EBPOM World Congress of Prehabilitation Medicine 2023

Abstract Competition Booklet

1

Standising protocol using botox for abdominal wall reconstruction

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Competition Track

EBPOM abstract competition

Abstract

INTRODUCTION

In the UK, abdominal wall reconstruction (AWR) remains a significant challenge, both surgically and financially. The most commonly used surgical technique used for this procedure is component separation technique (CST). BTA (Botulism toxin A) is a safer alternative or adjunct to CST increasing fascial closure rates, reducing recurrence and minimising postoperative complications. The most commonly used types of BTA preparations include Botox (onabotulinumtoxinA) and Dysport (abobotulinumtoxinA). Currently there is still no standardisation of practice for its use in AWR. or evidence based research into the most effective BTA to use. This literature review aims to summarise available evidence and make formal recommendations for a standardised protocol for use of BTA pre-operatively.

METHODS

A literature review was conducted for this project using the database PubMed. Filters were human studies and English language papers only (Figure 1). The bibliographic references of selected papers were utilised to enable identification of relevant papers not retrieved through the electronic search.

RESULTS

Dysport was reported to be associated with lower recurrence rates of 2% compared to 4.9% reported when employing Botox. Cost analysis shows Dysport is cheaper than Botox per optimal dose, costing £154 for 500 units compared to £276.4 for 200 units of Botox.

When Botox is injected earlier than 35 days or later than 14 days preoperatively, both fascial closure rates and recurrence rates worsen. On average studies reported a 79% closure rate when injected more then 35 days prior and a 41% closure rate when less then 14 days prior compared to 98.7% when used with the 14-35 day time frame pre-operatively.

Dysport is shown to be effective when used up to 42 days pre-operatively achieving closure rates of 97-100%. Therefore Dysport has a wider time-frame of clinical effectiveness. Further studies into the use of BTA in movement disorders also support this, finding that Dysport has a longer duration of action in the muscles than Botox.

A lower-than-average fascial closure rate of 78% is reported when fewer than 200 units of Botox are used. Contrastingly, 500 units of Dysport seems to be the accepted optimal dose for this preparation in all studies. To make comparisons in clinical settings, a dose conversion ratio of 1:2-1:3 Botox:Dysport is needed.

DISCUSSION

These findings highlight optimal; BTA dosing, pre-operative administration time frames and BTA subtype. The dosage used for Botox must be around 200-300 units or 500-600 units for Dysport to attain minimum complications, recurrence and enhanced closure rates.

The optimal timing of BTA pre-operatively seems to be around 2-5 weeks for Botox and 2-6 weeks for Dysport. This could be more suitable in the current climate of the NHS, with limited availability of clinic appointments, longer waiting times and frequently cancelled/postponed lists.

Dysport, the product with the longer duration of action, would also aid healing post-operatively and reduce risk of recurrence due to prolonging the time during which the muscles would be paralysed and therefore tension-free.

When taking into account complications, closure rates, pre-operative administration timing and cost effectiveness the findings from this review conclude Dysport to be the most effective BTA for AWR and to potentially be the basis for further investigation into making it part of a standardised protocol.

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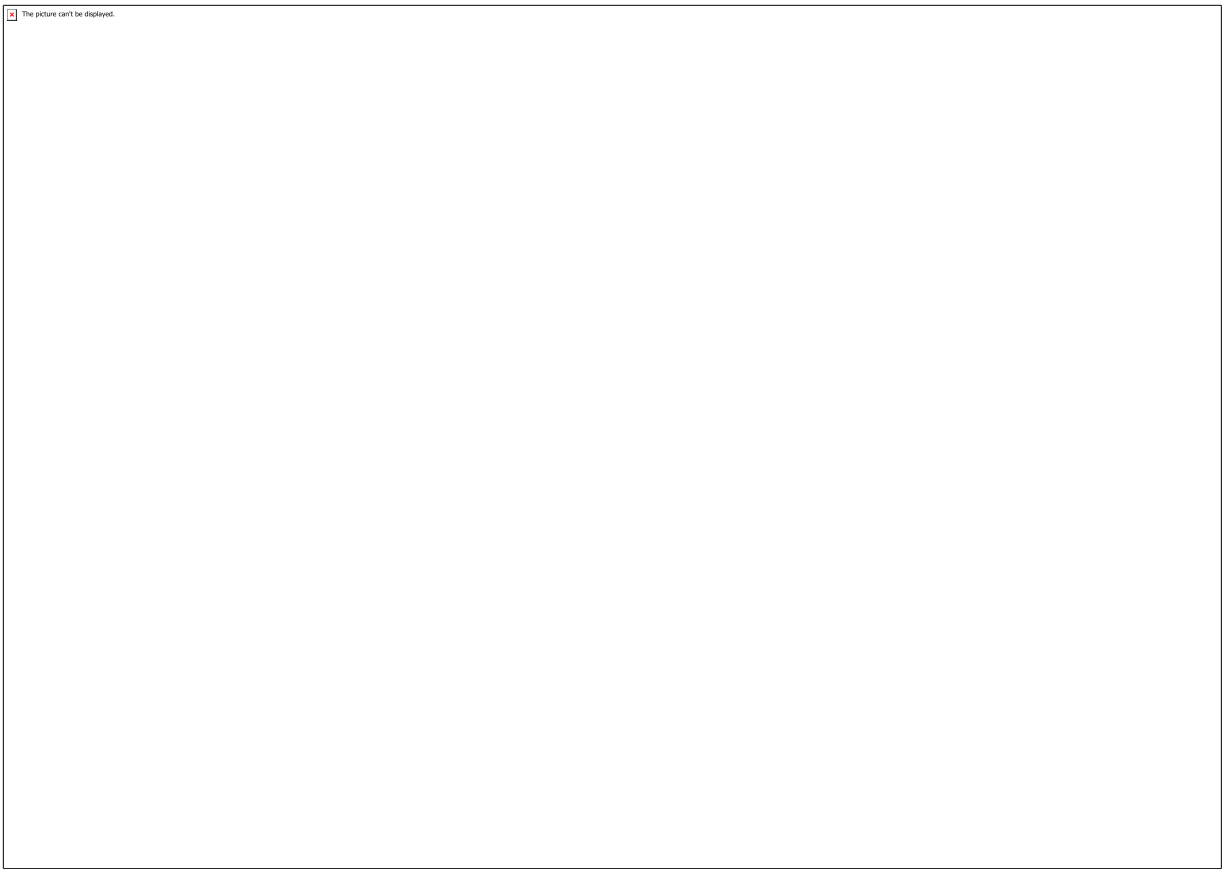

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botox

2

Case report: Successful management of a parturient with Eisenmenger's syndrome and pulmonary hypertension undergoing cesarean section

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Competition Track

EBPOM abstract competition

Abstract

Introduction

Eisenmenger's syndrome (ES) results from uncorrected congenital abnormalities of the heart facilitating left to right shunt and chronic volume overload of the pulmonary vasculature, leading to irreversible changes.

Pregnancy in the setting of pulmonary hypertension (PAH) and ES is associated with a substantial maternal and fetal risk. Maternal mortality in the presence of Eisenmenger's syndrome (ES) is reported to be 30 to 50%.

Methods (patient journey)

Mdm Y, a 37-year-old lady first presented at 7 weeks gestational age with a background history of large peri-membranous ventricular septal defect complicated by Eisenmenger disease. Baseline oxygen saturation in room air was 86-88% at rest. Despite being counseled extensively on the high maternal risks associated with pregnancy, she opted to continue the pregnancy.

A multidisciplinary team (MDT) discussion was set up involving the anesthetists, cardiologists, cardiothoracic surgeons, neurosurgeons, neonatologists, pediatric cardiologist, and obstetricians.

Prior to induction, a intra-arterial line and central line was inserted with the patient in a semi Fowler's position. Defibrillation pads, 5-lead ECG, SpO2 and BIS monitor were placed. Nitric oxide was connected to the anesthetic machine on standby. Right femoral arterial and venous cannulas were inserted to facilitate ECMO initiation should it be required. A transoesophageal echocardiography probe was inserted and the shunt flow was monitored by the cardiologists intraoperatively.

Results

She was induced through titrated doses of ketamine, midazolam, and remifentanil infusion. Surgery was performed via a lower transverse incision. After delivery, she was sent to intensive care unit to watch for haemodynamic changes and ensuring adequate uterine tone. Both mother and infant recovered well postoperatively.

Conclusion

With advancement in obstetric care and development in cardiac surgery, mothers with cardiac disease can now be safely delivered surgically with early engagement of multidisciplinary support. Frequent multidisciplinary discussions to discuss care based on change in patient's condition during different trimesters of pregnancy, and having a dedicated team of specialists taking care of the patient is critical.

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Eisenmenger's syndrome, Pulmonary Hypertension, Antenatal Management, Peripartum Management, Anaesthesia Considerations

3

Effect modification by Body Mass Index between general versus spinal anaesthesia and in-hospital mortality after hip fracture surgery

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Competition Track

EBPOM abstract competition

Abstract

Introduction:

The estimated annual incidence of hip fractures exceeds 1.5 million worldwide [1]. Most occur in geriatric patients who have multiple comorbidities and the majority of hip fractures are treated surgically. This contributes to significant perioperative morbidity and mortality. [2] One of the modifiable risk factors that may influence postoperative outcomes is the mode of intraoperative anaesthesia; commonly either a single-shot spinal technique (SA) or general anaesthesia (GA). Existing literature comparing GA and SA for hip fracture surgeries has yielded inconclusive results. [3] In addition, no previous study has pre-specified patients' body mass index (BMI) when studying hip fracture outcomes. This study utilises the largest nationwide database of inpatient hospital admissions in Japan. Our main objectives are to identify if there is a mortality benefit between GA and SA, as well as if there is an effect modification by BMI on the risk of in-hospital mortality after hip fracture surgery between GA or SA.

Methods:

We retrieved and utilised the Japanese Diagnosis Procedure Combination (DPC) inpatient database, which includes discharges and administrative claims data from more than 1,549 acute care hospitals, covering approximately 90% of all tertiary-care emergency hospitals in Japan. A total of 554,255 patients who underwent hip fracture surgery between April 1st, 2010 to March 31st, 2018 were analysed.

Results:

554,255 patients admitted for hip fracture surgery were analysed (mean age 83.5 years). Patients who underwent GA for hip fracture surgery had a significantly lower risk of death compared with those who had SA (odds ratio [OR], 0.87; $p<0.001$). However, there was statistically significant heterogeneity in mortality risk based on BMI. Patients with BMI>30 experienced significantly higher mortality (OR, 2.86;

p=0.017) whereas patients with BMI<18.5 had significantly lower mortality (OR, 0.81; p<0.001) under GA.

Conclusion:

GA correlated with overall significantly lower 30-day mortality after hip fracture surgery in our study population. When stratified, patients with higher BMI (>30) who underwent GA had higher risk of death, whereas patients with lower BMI (<18.5) had significantly lower mortality. Hence, we conclude that effect modification exists by BMI in hip fracture patients, and the mode of anaesthesia may impact mortality outcomes in specific patient groups. These results could change perioperative practices and guidelines for hip fracture surgeries and future randomised studies should further investigate this association.

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hip fracture, general anaesthesia, spinal anaesthesia, mortality , body mass index

4

Perioperative air embolism during hip arthroscopy

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Competition Track

iPOETTS abstract competition

Abstract

Introduction Perioperative air embolism is a common complication in operations such as hip arthroplasty, laparoscopy, and surgical sites above heart level, especially in the sitting position [1]. Despite rarely being discussed, air embolism may occur in patients receiving hip arthroscopy. We will report a 65-year-old female confronted with perioperative air embolism.

Case Description This is a 65-year-old female (body height: 149cm, body weight: 69kg) without any systemic diseases. She was scheduled to receive hip arthroscopy due to left femoral acetabular impingement. The induction period went smoothly with fentanyl 75 mcg, lidocaine 40 mg, propofol 140 mg, rocuronium 40 mg, and dexamethasone 5 mg. Intubation was also uneventful with a video-assisted laryngoscope. However, five minutes after the incision (100 minutes after anesthesia started, table 1), end-tidal carbon dioxide ($EtCO_2$) dropped from 31 to 20 mmHg. No apparent change was noticed in blood oxygen saturation and ventilator. The attending physician adjusted the fraction of inspired oxygen to 100%, switched to manual ventilation, and checked whether circuit leakage was present. Despite the above management, blood oxygen saturation gradually dropped to 70%, and $EtCO_2$ dropped to 15 mmHg. The attending physician asked the surgeon to pause the surgery and called for help. There was no circuit leakage detected and little secretion in the tube. The change in peak inspiratory pressure and tidal volume were listed in table 1. An arterial line was inserted, and arterial blood gas was examined (table 2). Later, blood oxygen saturation gradually elevated to 98%, and $EtCO_2$ also increased to 28 mmHg with no further management. Fifteen minutes after the episode (115 minutes after anesthesia started), her vital signs regained normal value.

After discussing with the surgeon, we decided to postpone the surgery. Sugammadex 200 mg was prescribed. With regular spontaneous breathing and clear consciousness, the patient was extubated. The following chest computerized tomography revealed no specific finding. The patient was discharged the next day, and further cardiovascular examinations revealed normal results.

Discussions Pulmonary embolism is an unneglectable perioperative complication, with an incidence rate of 0.18% [2]. Etiologies include gas, thrombus, amniotic fluid, fat, bone marrow, and foreign bodies [3]. Among the above etiologies, air embolism had only been discussed in a few studies, and one of the

studies discussing shoulder arthroscopy mentioned the influence of air injection pressure and puncture injury in the surgical site [1], which might explain the course of our case. In our case, 250 mL of air was injected into the surgical site, followed by a dramatic drop in $EtCO_2$.

After reviewing previous studies to explore the relationship between pulmonary embolism and the prognosis, most of the patients ended up with no major adverse events. Also, the benefit of prophylactic treatment didn't outweigh the risk. Despite the low incidence rate of air embolism in hip arthroscopy, both surgeons and anesthesiologists should keep in mind the diagnosis to make early detection.

Conclusions Perioperative air embolism is not common in patients receiving hip arthroscopy. However, we should always come up with this diagnosis if a dramatic drop in $EtCO_2$ is noticed.

Reference

[1] Hegde RT, Avatgere RN. Br J Anaesth. 2000;85(6):926-927.

[2] Chen T, Chen Q, Xu W, Guo J, He J. Clin Ther. 2021;43(11):1957-1968.e10

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end-tidal carbon dioxide,, air embolism, hip arthroscopy, anesthesia, management

5

Perioperative air embolism during hip arthroscopy

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[1] Hegde RT, Avatgere RN. Br J Anaesth. 2000;85(6):926-927.

[2] Chen T, Chen Q, Xu W, Guo J, He J. Clin Ther. 2021;43(11):1957-1968.e10

[3] Williamson JA, Helps SC, Westhorpe RN, Mackay P. Qual Saf Health Care. 2005;14(3):e17

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Poster keywords

air embolism, hip arthroscopy, anesthesia, end-tidal carbon dioxide, management

6

Intranasal Dexmedetomidine as an anxiolytic premedication in perioperative paediatric anaesthesia

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Competition Track

EBPOM abstract competition

Abstract

Introduction:

Pharmacological anxiolysis for children in the perioperative period is varied and challenging. We present data from a recent project aimed at assessing the diverse methods of premedication, the cost implications of theatre cancellation due to the agitated or distressed child and offer insight into our introduction of a novel anxiolytic agent; dexmedetomidine via the intranasal route (IN), in a large UK district general hospital.

Methods:

Our initial assessment of annual cancellation data spanning two years of elective paediatric operating revealed 455 short notice or on the day cancellations, with over 5% due to an agitated or distressed child. This equates to some 50 hours of missed operating time. The cost implications for this have been estimated at around £20,000.[1] A subsequent departmental audit of pharmacological anxiolytic practice revealed a myriad of premedication practices limited to the per oral, intramuscular and buccal routes of administration, with a reliance on benzodiazepines.

Consequently, we sought and later gained approval from the trust medicines and formulary committee for the introduction of dexmedetomidine; a highly selective α2 adrenergic receptor agonist that produces dose-dependent sedation with limited respiratory depression and modest haemodynamic effects.[2] This in combination with a guide for administration via intra nasal route has been a functional and useful addition the anaesthetists 'tool kit' during the perioperative period.

Results:

Initial prospective data (2022/2023 n=38) assessing the use of dexmedetomidine in the perioperative period suggests favourable Observer Assessment of Alertness/Sedation scores (OAA/S)[3] with no immediate complications and crucially progress to planned anaesthesia and surgical treatment. Comparable OAA/S scores were seen on arrival to theatre and at the time of cannulation between IN dexmedetomidine, and oral clonidine and midazolam. With improved OAA/S score when compared with

buccal lorazepam and IM ketamine. Local cancellation data remains under assessment but currently stands at n=2 (over 6months).

Conclusions:

Our data shows intranasal dexmedetomidine has been a useful addition to perioperative armamentarium, with improved or comparable sedation effects to the commonly used benzodiazepines, and clondine. To date no theatre cancellation has occurred in the distressed child pre-medicated with IN dexmedetomidine, though we appreciate the need for ongoing data collection. We offer a concise guide for the introduction and use of IN dex for our colleagues at EBPOM.

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Poster keywords

Paediatrics , Dexmedetomidine , Safety , Perioperative , Sedation

7

Neoadjuvant therapy for resectable lung cancer: a new standard of care and the key role of prehabilitation

Sonya Soh, Francesco Carli
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Competition Track

EBPOM abstract competition

Abstract

Introduction:

Growing evidence favours neoadjuvant chemo-immunotherapy over upfront surgery for operable non-small cell lung cancer[1].

Both lung cancer surgery and systemic therapy reduce functional capacity, predicting worse postoperative outcomes [2, 3]. A multimodal prehabilitation program may attenuate this dual-hit. Our goal was to explore the role of prehabilitation delivered concomitantly with neoadjuvant therapy for stage II and III lung cancer patients.

Methods:

At a single university centre, successive measurements of physical, nutritional and psychosocial fitness were obtained for 15 lung cancer patients receiving prehabilitation. Median age was 64 years and BMI 26.8. 40% were ASA II and 60% ASA III; 33% had stage IIb disease while 67% had stage IIIa or b. During prehabilitation, 13 patients fully completed their neoadjuvant therapy, all 15 underwent surgery and eight returned for postoperative follow-up. Postoperative data were collected retrospectively.

Results:

Prehabilitation was delivered over 80.5 days (median) before surgery. At baseline, 33% of patients were sarcopenic based on Fat-Free Mass Index (FFMI), 33% of patients were malnourished based on Patient-Generated Subjective Global Assessment (PG-SGA) score and 40% screened positive for anxiety and 40%, depression, based on the Hospital Anxiety and Depression Scale (HADS).

Overall, six-minute walk test (6MWT) improved by 33.5m (p=0.004) and FFMI was maintained preoperatively. Compared to baseline, there was no significant decrease in 6MWT or FFMI

postoperatively (Table 1). Supervised exercise was delivered to 47% of patients with 90% compliance, while the remaining were prescribed home exercise. A dietician followed 87% of patients with 88% compliance.

Psychosocial counselling was provided for 33% of patients. Preoperative reduction in HADS anxiety score approached significance (p=0.07).

Post-surgical median length of stay was four days. Two patients required postoperative ICU admission. Nine patients experienced postoperative medical or surgical complication.

Conclusion:

As the paradigm shifts towards neoadjuvant therapy for operable lung cancer, prehabilitation may play an essential role in mitigating physical deterioration caused by systemic therapy and surgery.

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Prehabilitation, Lung cancer, Neoadjuvant therapy

8

Impact of Optimisation of Electronic Medical Record Documentation for the Postoperative Acute Care Unit on Junior Doctors

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Competition Track

EBPOM abstract competition

Abstract

Introduction

The aim of this study was to evaluate the impact of optimising documentation in the Postoperative Acute Care Unit (PACU) Navigator in EPIC Medical Electronic Medical Records on junior doctor satisfaction and time spent on various administrative processes, (including admission, daily ward rounds, night rounds, and discharge) at the University College Hospital London. Priorities for postoperative elective patients differ from the usual ICU patients, and optimising documentation for this population is essential.

Methods

A survey was conducted among 13 junior doctors (Perioperative Medicine Fellows) involved in perioperative care at the PACU of University College Hospital London between July and December 2022. The survey focused on junior doctor satisfaction with the documentation process in the PACU Navigator and the time spent on various administrative processes. The documentation in the PACU Navigator was optimised during the survey period, and the results were compared to the previous six months. The survey also took into consideration the unique priorities of postoperative elective patients.

Results

The results of the survey showed that optimising documentation in the PACU Navigator was effective in reducing the time spent on administrative processes. The average time spent on admission decreased from 45 minutes to 30 minutes, the time spent on daily ward rounds decreased from 40 minutes to 25 minutes, the time spent on night rounds decreased from 30 minutes to 20 minutes, and the time spent on discharge decreased from 35 minutes to 15 minutes. Junior doctors reported a significant improvement in their satisfaction with the documentation process, and felt that the targeted PACU

navigator contributed to an improvement in the quality of care provided to the postoperative elective patients.

Conclusion

Optimising documentation in the PACU Navigator in EPIC Medical Electronic Medical Records can lead to decreased time spent on various administrative processes for postoperative elective patients, ultimately resulting in better patient care and clinical decision-making. Future studies should further explore the unique priorities of this population and how optimising documentation can improve efficiency and quality of care.

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Perioperative medicine, Electronic medical record, EPIC, Junior doctor satisfaction

9

Implementation of home blood pressure monitoring for elective surgical patients in preoperative anaesthetic clinic

Xinyan Zhang, Chunlei Tan
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Competition Track

EBPOM abstract competition

Abstract

Introduction

Elevated blood pressure (BP) is a common problem during preoperative assessment and often result in unnecessary referrals to general practitioner(GP), postponement of surgeries and wastage of hospital resources. This is in spite of the fact that high clinic BP could be due to white coat effect (WCE) and may not reflect patients' baseline BP. The prevalence of WCE perioperatively is not clear, but since WCE can affect both hypertensive and normotensive persons[1], it is imperative for anaesthetists to differentiate between normotensive patients with WCE and hypertensive patients with poorly controlled BP.

The objective of this study was to identify the incidence of WCE in Preoperative Anaesthetic Assessment Clinic (PAAC) among elective surgical patients. We also aimed to assess the feasibility and applicability of home blood pressure (HBP) monitoring preoperatively using loaned BP monitors.

Methods

This was a prospective, observational, single-center study. Patients with BP ≥160/90mmHg in PAAC were recruited. They were trained and instructed to check HBP twice a day with the BP monitor on loan from PAAC and to visit their GP if HBP was higher than 160/90mmHg. WCE was diagnosed when the discrepancy between the average clinic BP and HBP readings exceeded 20/10 mmHg[2].

Results

214 patients were recruited into the study over 18 months. 176 of them had completed HBP data and were included into the final analysis. The median age was 68.2 years (IQR 62.5–75) and 73.3% of them had a known history of hypertension.

WCE was observed in 92.1% of patients (162/176, 95% CI 87.0-95.6) and 101 of those with WCE had mean HBP less than 140/80mmHg. Only 19 patients (10.8%) had HBP readings higher than 160/90mmmHg and warranted a GP consult. None of the patients had surgery cancelled due to elevated BP. All the BP monitors were returned to PAAC.

Conclusion

WCE is commonly seen among patients with raised clinic BP and should be taken into consideration during preoperative assessment to avoid unnecessary GP referrals or cancellation of surgery. HBP monitoring is an easy and feasible way to detect WCE and could be implemented as part of the routine preoperative assessment.

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10

Feasibility and effect of Multimodal Prehabilitation to improve functional capacity and quality of life in patients undergoing Endovascular Aneurysm Repair surgery. A pilot study.

Miquel Coca-Martinez[1,2], Jade St-Pierre[3], Elie Girsowicz[4], Daniel Obrand[4], Oren Steinmetz[2], Jason Bayne[4], Kent Mackenzie[2], Franco Carli[1], Heather Gill[2]
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Competition Track

iPOETTS abstract competition

Abstract

Introduction:

Endovascular aortic aneurysm repair (EVAR) is a less-invasive approach for elective treatment of abdominal aortic aneurysms (AAA) than open surgery. Postoperative EVAR recovery is generally faster compared to open repair and, as a result, research investigating the effects of prehabilitation on postoperative recovery and quality of life have lagged behind other specialties1. The objective of this pilot study is to determine the safety and feasibility of prehabilitation in patients undergoing EVAR and its impact on perioperative functional capacity and quality of life.

Methods

Candidates for EVAR with an infra-renal abdominal aortic aneurysm <7.5cm were invited to participate in a 6-week multimodal prehabilitation program that included 1) supervised exercise training with one weekly session at the hospital and a home-based exercise prescription combining aerobic and resistance exercises; 2) Education and nutritional support, 3) Psychosocial support and 4) Smoking cessation therapy. Patients' functional capacity (6-minute walk test, CPET) and quality of life (SF36) were assessed at baseline, before surgery and 6 weeks postoperative. Compliance to each prehabilitation component was recorded as well as the occurrence of any adverse event during the supervised training.

Results

A total of 24 patients were included, 17 males (70%) and 7 females (30%). No adverse events occurred during the program. Compliance to each component of the program (median [IQR]) was 66%[67] for supervised training, 100%[67] for home-based training and 100%[100] for nutrition. The multimodal prehabilitation program elicited a significant increase in functional capacity and quality of life preoperatively, followed by a non-statistically significant postoperative decline from baseline values (figures 1 and 2).

Conclusion

The implementation of Multimodal Prehabilitation for patients awaiting EVAR is feasible and safe. Multimodal Prehabilitation improved both functional capacity and Quality of life preoperatively. However, a decline in both measurements was observed 6 weeks after surgery. More research is needed to study the impact of prehabilitation on postoperative recovery and quality of life after EVAR.

References

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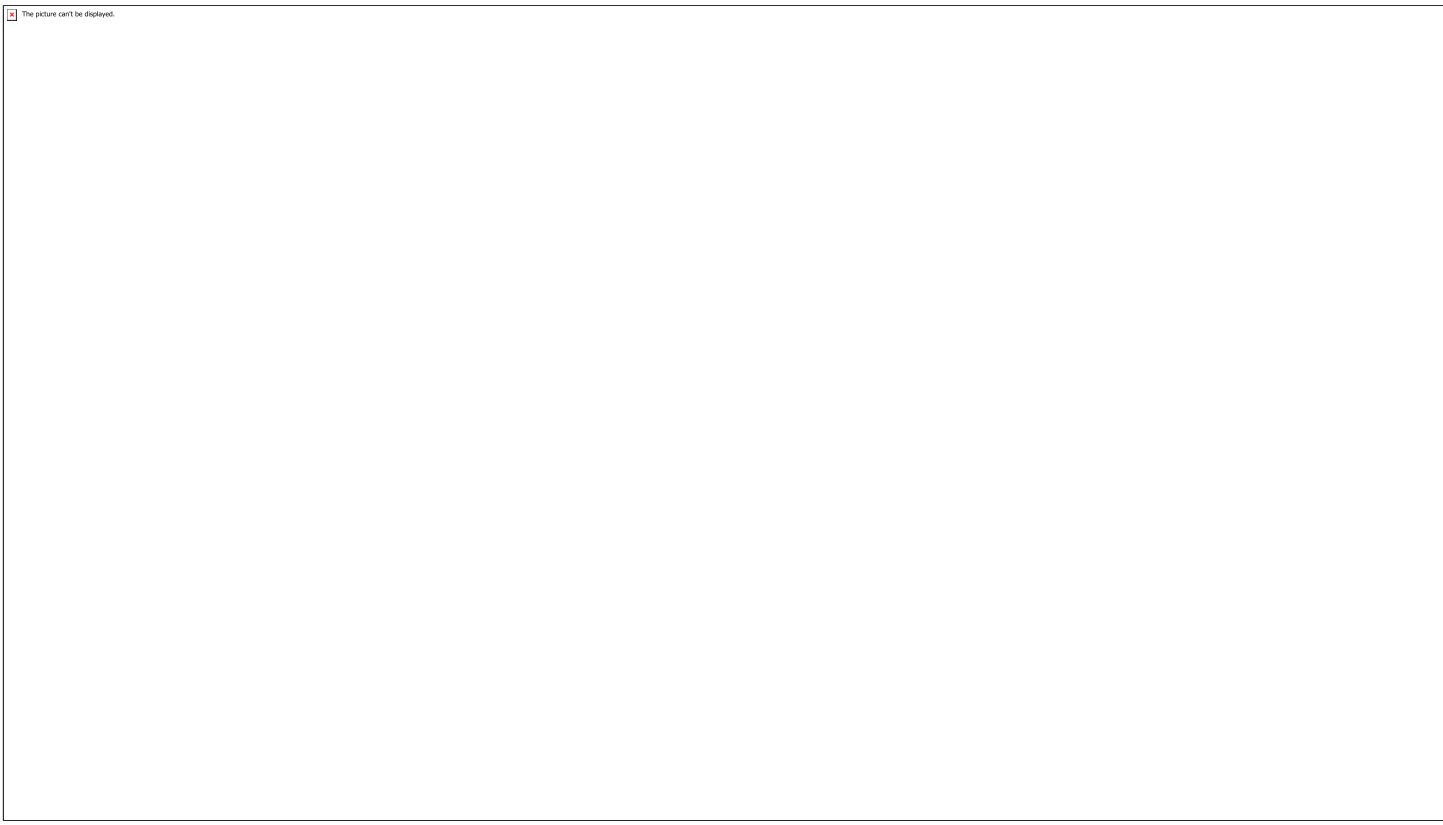

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Poster keywords

EVAR, MULTIMODAL PREHABILITATION, QUALITY OF LIFE, FUNCTIONAL CAPACITY, VASCULAR SURGERY

11

Effort-independent cardiopulmonary exercise test variables are associated with postoperative complications in patients who underwent elective colorectal surgery

Ruud Franssen[1], Annefleur Berkel[2], David ten Cate[3], Job van der Palen[4], Nico van Meeteren[5], Jeroen Vogelaar[6], Gerrit Slooter[3], Joost Klaase[7], Maryska Janssen-Heijnen[1], Bart Bongers[6]
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Competition Track

iPOETTS abstract competition

Abstract

Abstract

Introduction: Risk assessment for adverse postoperative outcomes is an important predictive step in the preparation of patients for major (abdominal) surgery [1]. The usefulness of effort-independent preoperative cardiopulmonary exercise test (CPET) variables, such as the slope of the relation between the minute ventilation and carbon dioxide production (VE/VCO2-slope) and the oxygen uptake efficiency slope (OUES), to complement preoperative risk assessment in patients scheduled for major abdominal surgery is unclear. This study aimed to investigate the prognostic value of these effort-independent CPET-derived variables for 30-day postoperative complications after elective colorectal surgery.

Materials and Methods: A retrospective explorative study was performed using data of patients who completed a preoperative CPET and underwent elective colorectal surgery in four hospitals in the Netherlands. Preoperative VE/VCO2-slope, OUES, as well as 30-day postoperative complications were assessed. Multivariable logistic regression analyses and receiver operating characteristic (ROC) curves were used to investigate the prognostic value of the relationship between the preoperative CPET-derived variables and postoperative complications.

Results: Data from 102 patients (60.1% males) with a median age of 72.0 [interquartile range, IQR, 67.8-77.4] years were analyzed. Forty-four patients (43.1%) had one or more postoperative complications. Merely 10 (9.8%) patients had a general complication only. Median [IQR] values were 33.2 [28.5-36.5] and 29.9 [26.1-33.1] for VE/VCO2-slope, and 20.2 [16.0-25.6] and 22.8 [19.5-28.9] for OUES/kg, in patients with and without postoperative complications, respectively (see Figure 1). In multivariate analysis adjusted for surgical approach (open versus minimally invasive surgery), the VE/VCO2-slope (odds ratio (OR) 1.08 confidence interval (CI) 1.02-1.16) and OUES (OR 0.94, CI 0.89-1.00) were statistically significant associated with the occurrence of 30-day postoperative complications.

Conclusion: Patients with a higher VE/VCO2-slope or a lower OUES/kg have a higher risk for 30-day postoperative complications after colorectal surgery. The effort-independent VE/VCO2-slope and OUES might be used to assist in preoperative risk assessment of patients undergoing colorectal surgery. These variables could be especially valuable in patients who are unable or unwilling to exercise until maximal volitional exertion.

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Figure 1. CPET outcomes of patients with (yes) and patients without (no) 30-day postoperative complications following colorectal surgery.
Grey dots represent individual patients. Horizontal lines with error bars represent the median and interquartile range.
Statistically significance was tested using the Mann-Whitney U test.
Abbreviations: OUES/kg = oxygen uptake efficiency slope normalized for body mass; VE/VCO2-slope = the slope of the relation between minute ventilation and carbon dioxide production up to the respiratory compensation point.

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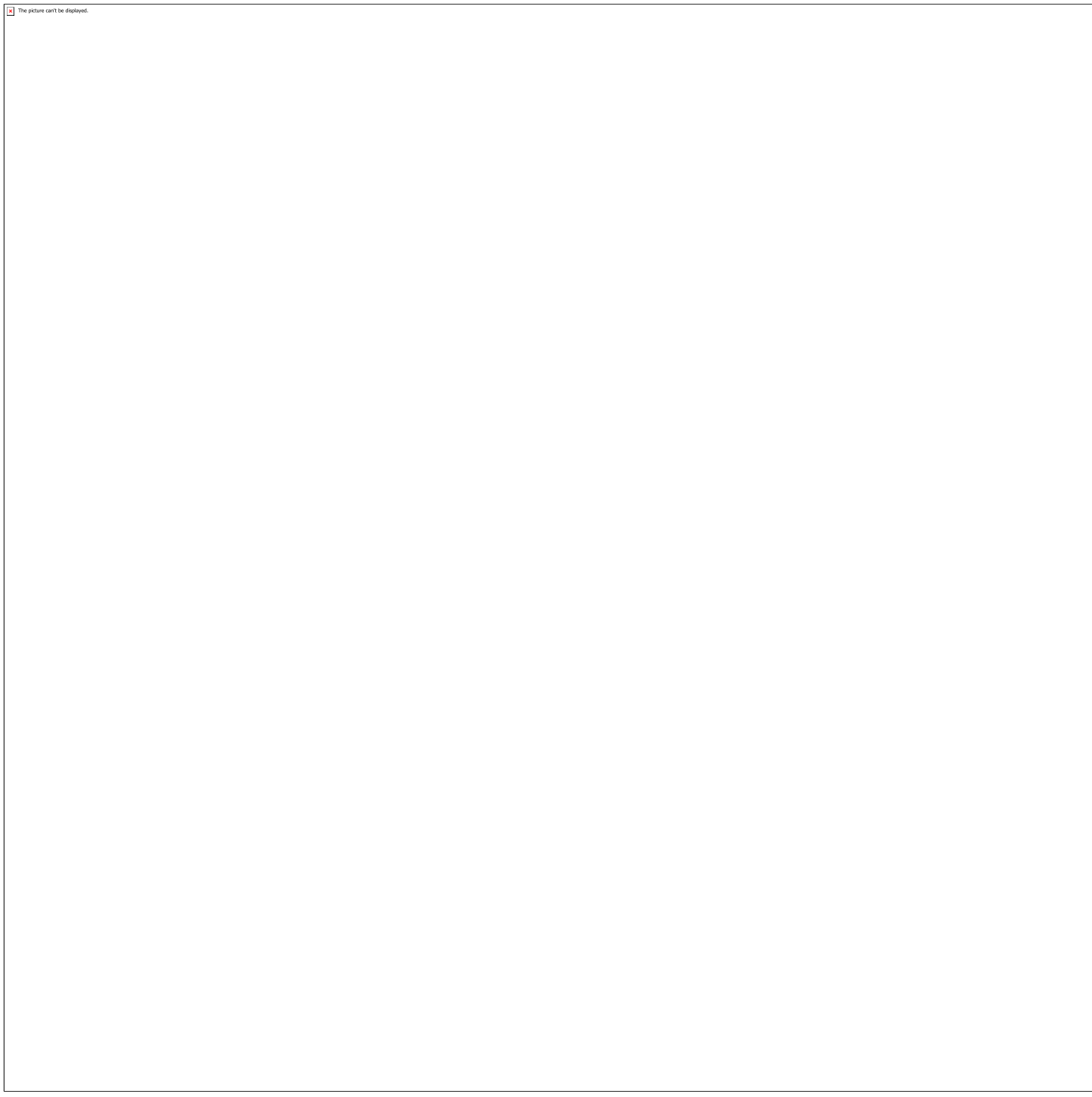

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Poster keywords

Preoperative care, Preoperative risk assessment, Cardiopulmonary exercise testing, Abdominal surgery, Oxygen uptake efficiency slope

12

Preoperative anemia in elderly going for major abdominal surgery is associated with morbidity but no difference in quality of life

Phui Sze Au Yong[1], Yuhe Ke[1], Eunice Kok[1], Brenda Tan[1], Hanis Binte Abdul Kadir[2], Hairil Rizal Abdullah[1]
[1]Singapore General Hospital, Singapore, Singapore. [2]Singhealth Health Services Research Unit, Singapore, Singapore

Competition Track

EBPOM abstract competition

Abstract

EPBOM Abstract

Introduction

Preoperative anemia can negatively affect physical function and quality of life in an elderly person due to limited physiologic reserves and vulnerability to the stress of major abdominal surgery. While there are many studies which look at morbidity and mortality, few studies look into how anemia affects quality of life after major surgery. This study aims to determine the association of anemia with health-related quality of life outcomes in elderly after major abdominal surgery.

Methods

EQ-5D is a standardised measure of health-related quality of life developed by the EuroQol group. It assesses health status in 5 dimensions of health. Ethics approval was obtained from SingHealth Centralized Institutional Review Board and written consent obtained from patients. This prospective observational study was conducted in the preoperative anesthesia clinic of a tertiary hospital in Singapore from 2017 to 2021.

Results

499 patients were recruited, of which 469 were analysed. 37.5% of the study population had preoperative anemia. The anemic group was associated with older age, higher age-adjusted Comprehensive Complication Index score ($p<0.001$), higher incidence of diabetes mellitus ($p<0.001$) and higher proportion of patients with ASA status 3 or 4 ($p<0.001$). Anemia was significantly associated with

the presence of morbidity at postoperative day 5 as indicated by the presence of POMS-defined complications. Of those who were anemic, 36.9% had POMS-defined complications at day 5 compared to 15.7% in the non-anemic group ($p<0.001$). Comparing the EQ-5D visual analog scale (VAS) at 1-month, the anemic group had a mean VAS score of 78.12 (95% CI 76.29-79.95), lower than non-anemic group which had a score of 79.11 (95% CI 77.63-80.59). Subsequent timepoints revealed the same between-group contrast of -0.99 (95% CI -3.08-1.10, $p = 0.353$). Both groups demonstrated the same increase in VAS score by a mean of 2.64 (95% CI 1.13-4.14) at 3 month and 4.69 (95% CI 3.18-6.21) at 6 months, as compared to 1 month ($p < 0.001$).

Conclusion

There is a significant increase in early postoperative morbidity at day 5 for anemic patients but no significant difference in health-related quality of life outcomes measured by the EQ-5D between anemic and non-anemic patients. Both groups demonstrate similar trend of improvement in EQ-5D scores at 3 months and 6 months postoperatively.

References

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Poster keywords

EQ5D, POSTOPERATIVE MORBIDITY SURVEY, HRQOL, ABDOMINAL SURGERY, ELDERLY

13

Multidisciplinary prehabilitation to improve frailty and functional capacity in high-risk elective surgical patients: a retrospective pilot study

Henry Man Kin Wong[1], Qi Ding[2], Bosco Hon Ming Ma[2], Grace Pik Yi Hou[3], Calvin KW Kwong[1], Anna Lee[3]
[1]Department of Anaesthesia and Intensive Care, Prince of Wales Hospital, Hong Kong, Hong Kong. [2]Department of Medicine and Geriatrics, Shatin Hospital, Hong Kong, Hong Kong. [3]Department of Anaesthesia and Intensive Care, Prince of Wales Hospital, The Chinese University of Hong Kong, Hong Kong, Hong Kong

Competition Track

EBPOM abstract competition

Abstract

Introduction

Frailty is associated with worse outcomes and higher healthcare costs[1]. With the potential "teachable" moment from long surgical waiting time, we examined the feasibility of a pilot prehabilitation program (structured exercise training, nutritional counselling/therapy, psychological support) on high-risk frail patients undergoing major elective surgery.

Methods

A single-centre, retrospective pilot (Dec 2020-Nov 2021) on a one-stop prehabilitation program in collaboration with geriatricians. Anaesthetists screened patients for inclusion with Malnutrition Screening Tool (MST), 6-minute walk test (6MWT)[2] and Duke Activity Status Index (DASI) at least 4 weeks preoperatively. Patients with MST>1 were referred for nutritional optimization; patients with ASA≥3 and CFS 4-6, together with 6MWT<400m or DASI<34 were referred for exercise prehabilitation. Patients undergoing major hepatectomy, esophagectomy, pancreaticoduodenectomy and radical cystectomy were also referred for prehabilitation. Exercise prescription was a structured exercise training, supervised by physiotherapist, 2-3 sessions per week for 4-6 weeks preoperatively. Changes in cardiopulmonary performance, muscle strength, functional mobility and nutritional status were recorded before and after prehaiblitation. Clinical outcomes including length of stay, 30-day mortality and DAH30 were recorded.

Results

Over a 12-month period, 72 out of 111 patients (64.9%) from prehabilitation clinic were eligible, of which 54(75%) were successfully enrolled. Adherence rate to prehabilitation was high in 52(96.3%) patients. The mean(SD) age was 71.9(6.9) years and mean(SD) number of prehabilitation sessions attended per patient was 6.3(2.9). (44.2% ASA>=3, 25% CFS>=4). Muscle strenght improved after prehabilitation. Mean(95% CI) hand grip strength improved from 24kg(22.2-25.8) to 25.2kg(23.5-27.0).

Mean(95% CI) 30s Chair Stand increasd from 11.7(10.7-12.7) to 13.6(12.6-14.6). Functional mobility also improved as demonstrated by shorter mean(95% CI) TUGT 10.8(9.7-11.9) to 8.7(7.9-9.5). There was no difference in 6MWT, DASS and nutritional status.

Conclusion

This is the first out-patient based, one-stop multidisciplinary prehabilitation program for high-risk surgical patients in Hong Kong. The study demonstrated its feasibility in perioperative pathway. Prehabilitation may improve muscle strength and functional mobility.

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Poster keywords

Prehabilitation, Frailty, High-risk surgical patients, multidisciplinary

14

What prehabilitation advice is given to oncology patients by clinical nurse specialists and advanced nurse practitioners?

Tessa Renouf[1], Rachael Barlow[2], Tunia Patel[2]
[1]The Royal Marsden NHSFT, London, United Kingdom. [2]Cardiff and Vale University Health Board, Cardiff, United Kingdom

Competition Track

iPOETTS abstract competition

Abstract

Introduction

This study is one of two studies in a series exploring the knowledge, attitudes and beliefs of clinical nurse specialists (CNS'S) and advanced nurse practitioners (ANP'S) to prehabilitation advice in oncology patients. In this study the objectives were to explore what prehabilitation advice is being given in practice to oncology patients by CNS's and ANP's.

Methods

Cross sectional online questionnaire open for 3 months (March- June 2022) to establish the knowledge, attitudes and beliefs of ANP's and CNS's working with oncology patients in the United Kingdom to prehabilitation, disseminated through professional organisations and social media. Data was analysed using descriptive statistics (Ns and percentages) using MS forms and the Statistical package for Social Sciences (SPSS).

Results

The questionnaire gained (n-415) responses. Prehabilitation advice was routinely given by 89% (n 371) or respondents, out of this (47.2%, n 175) was multimodal, encompassing five prehabilitation elements. Nearly half, (48%) of respondents worked in trust's which used the term "prehabilitation". Respondents free text answers to the questionnaire illuminated a vast array of advice being given; from financial, emotional and social advice to discussions on patient treatment and logistics. Key to this was the theme of individualised, person-centred advice given throughout.

Conclusion

The study highlighted the wealth of advice given to patients by CNS's and ANP's including prehabilitation advice. Further, it explored importance that this prehabilitation advice is person centred and the intrinsic role that the respondents have in prehabilitation advice provision. Recommendations include the implementation of a nurse prehabilitation advice resource used to give quick, tailor-made advice to

their patients in often limited consultation time and greater provision of education around prehabilitation. Therefore, enabling CNS's and ANP's to provide personalised prehabilitation advice in consultations and through their patient's cancer journeys.

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Poster keywords

Prehabilitation, Nursing, Oncology, Advice

15

Barriers and facilitators to giving prehabilitation advice by clinical nurse specialists and advanced nurse practitioners in oncology patients

Tessa Renouf[1], Rachael Barlow[2], Tunia Patel[2]
[1]The Royal Marsden Hospital NHS Foundation Trust, London, United Kingdom. [2]Cardiff and Vale University Health Board, Cardiff, United Kingdom

Competition Track

iPOETTS abstract competition

Abstract

Introduction

This study is the second of two studies in a series exploring the knowledge, attitudes and beliefs of clinical nurse specialists (CNS'S) and advanced nurse practitioners (ANP'S) to prehabilitation advice in oncology patients. In this study the objectives were to explore and identify the barriers and facilitators to giving prehabilitation advice by CNS's and ANP'S in oncology patients.

Methods

Cross sectional online questionnaire open for 3 months (March- June 2022) to establish the knowledge, attitudes and beliefs of ANP's and CNS's working with oncology patients in the United Kingdom to prehabilitation, disseminated through professional organisations and social media. Data was analysed using descriptive statistics (Ns and percentages) using MS forms and the Statistical package for Social Sciences (SPSS).

Results

The questionnaire gained (n-415) responses. Prehabilitation advice was routinely given by 89% (n 371) or respondents. Many (60%) identified a lack of guidance and referral processes as a barrier to giving prehabilitation advice, this corresponded between respondents' confidence to give prehabilitation advice and subsequent referrals (<0.001). Other factors included time (61%), a lack of patient interest (44%) and limited relevance to patient's (35%).

Conclusion

The principle finding of this research is the correlation between lack of guidance and confidence/ referral's around prehabilitation advice. Familiarity with guidelines was strongly associated with provision of prehabilitation advice and referral for all prehabilitation elements due to an increase in confidence and knowledge. The barrier of time was also identified by over half of respondents, this was also explored in respondents' unwillingness to give prehabilitation advice expressing that they did not

have the capacity to give prehabilitation information. Barriers to a lack of patient interest to giving patients prehabilitation advice and of respondents being concerned about overwhelming their patients with advice also came out strongly in free text answers. Recommendations include education around prehabilitation and patient needs. Further to this, the authors recommend the implementation of standardised nurse prehabilitation advice resource integrated into the cancer pathway linking into referral pathways which can be used by multiple health care professionals to provide individualised advice throughout the patients cancer journey.

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Poster keywords

Prehabilitation, Nursing, Oncology, Advice , Barriers/facilitators

16

An evaluation of the cardiology-anaesthetic multidisciplinary service.

Brooke Morgan, Tom Fletcher, Thomas Mathew, Rahul Basu
Nottingham University Hospitals, Nottingham, United Kingdom

Competition Track

EBPOM abstract competition

Abstract

Introduction: Underlying cardiovascular disease significantly contributes to perioperative morbidity and mortality, with almost half of adults aged ≥45 years undergoing non-cardiac surgery having at least two cardiovascular risk factors[1]. At Nottingham University Hospitals, preoperative cardiology assessment was prolonging non-cardiac surgery waiting times. As a result of increasing demand on preoperative and cardiac services following the Covid-19 pandemic, a weekly consultant-led cardiology-anaesthetic multidisciplinary team (MDT) meeting was established. Anaesthetists working in the preoperative assessment clinic could refer patients with the aims of rapidly being able to risk stratify, optimise, and facilitate safer surgery in high-risk individuals. We evaluated the service's efficacy in enabling surgery and the impact on operative outcomes.

Methods: Data was collected on patients referred to the MDT since its conception in December 2021 to February 2023, including: patient demographics, type and urgency of surgery, questions asked of the MDT, actions undertaken, and operative outcomes.

Results: 101 patients with an average age of 70 years were assessed in the MDT over 15 months, from 18 surgical specialties. 76% had known cardiac disease. Actions following the MDT most commonly included expediting further investigations, anaesthetic management advice, and medication adjustment. It was decided to proceed straight to surgery in 58% of cases, with another 22% proceeding pending further investigations or risk discussion. Only 13% of surgeries were put on hold with the need for cardiovascular optimisation. Five surgeries were cancelled after risk discussion, and three proceeded without a general anaesthetic. Out of the 39 patients who have had their operation to date, 79% had no perioperative complications. Three (8%) had surgical complications, and five (13%) had medical complications, only one of which was cardiac in nature and was managed without further sequelae.

Conclusion: Since the cardiology-anaesthetic MDT has been established, we believe we have been able to streamline the assessment and decision-making process, and proceed with surgeries that otherwise would have been delayed, with fewer complications. This all leads to improved operative efficiency in a time of significant surgical backlog, and increased patient satisfaction with their individualised perioperative care.

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Poster keywords

multidisciplinary, cardiology, preoperative, patient safety, efficiency

17

Fasting Clocks: An insufficient nudge to improve pre-procedural fasting governance

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Competition Track

EBPOM abstract competition

Abstract

Introduction: Prolonged perioperative fasting drives perioperative complications[1] and compliance with fasting guidelines is poor[2]. Quality improvement programs in this area are limited in their generalisability[3,4]. Behavioural economics provides a framework for developing novel QI interventions[5]. We hypothesised that visual cues from 'fasting clocks' in combination with reduced friction via documentation 'fasting templates' would 'nudge' clinicians: reducing fasting durations, and improving guideline compliance.

Methods: A preintervention audit was conducted July-August 2019. Traffic-light 'fasting clocks' were developed and placed on two separate non-surgical wards. Staff were educated on their use, and the use of 'fasting templates'. After a run-in period, fasting inpatients were prospectively identified. Patient's fasting for other reasons (imaging, or unsafe swallows) were excluded. Uptake of intervention tools was noted, and data extracted from medical records. Ethics approval was obtained from the local IBR. The primary outcomes were: fasting length, adherence to hospital fasting guidelines, and intervention uptake. Comparisons were performed using Student t-test, Wilcoxon rank-sum test, chi-square, or Fisher's exact test, where appropriate.

Results: A total of 124 fasting episodes were identified across the pre and post intervention periods. Differences in between the pre- and post-intervention groups are highlighted in Table 1. Post intervention, fasting timers were appropriately utilised in the majority of fasting episodes (60%), however the fasting templates were not utilised (0%).

Mean fasting length was over 1 hour shorter in the post-intervention group however this did not reach statistical significance (13.2 v 12.1 hours, p=0.26). Adherence with hospital guidelines was significantly

higher in the post-intervention group (0% v 15.4%, p=0.005) and the number of unnecessary fasting episodes was lower (48.7% v 23.8% p=0.006).

Conclusion: Our study is the first of its kind to explore the use of 'fasting clocks', a novel behavioural economics-based approach, to improved guideline compliance. Implemented within a non-surgical ward environment, this intervention achieved high uptake, indicating the potential for 'real world' generalisability. Intervention uptake and/or efficacy may be higher within a surgical ward setting. Despite a trend towards improved fasting duration, there was no significant difference between groups observed. This may be partly attributable to ward disruptions over the study period secondary to the COVID-19 pandemic. Fasting clocks show promise, however require further evaluation prior to widespread implementation.

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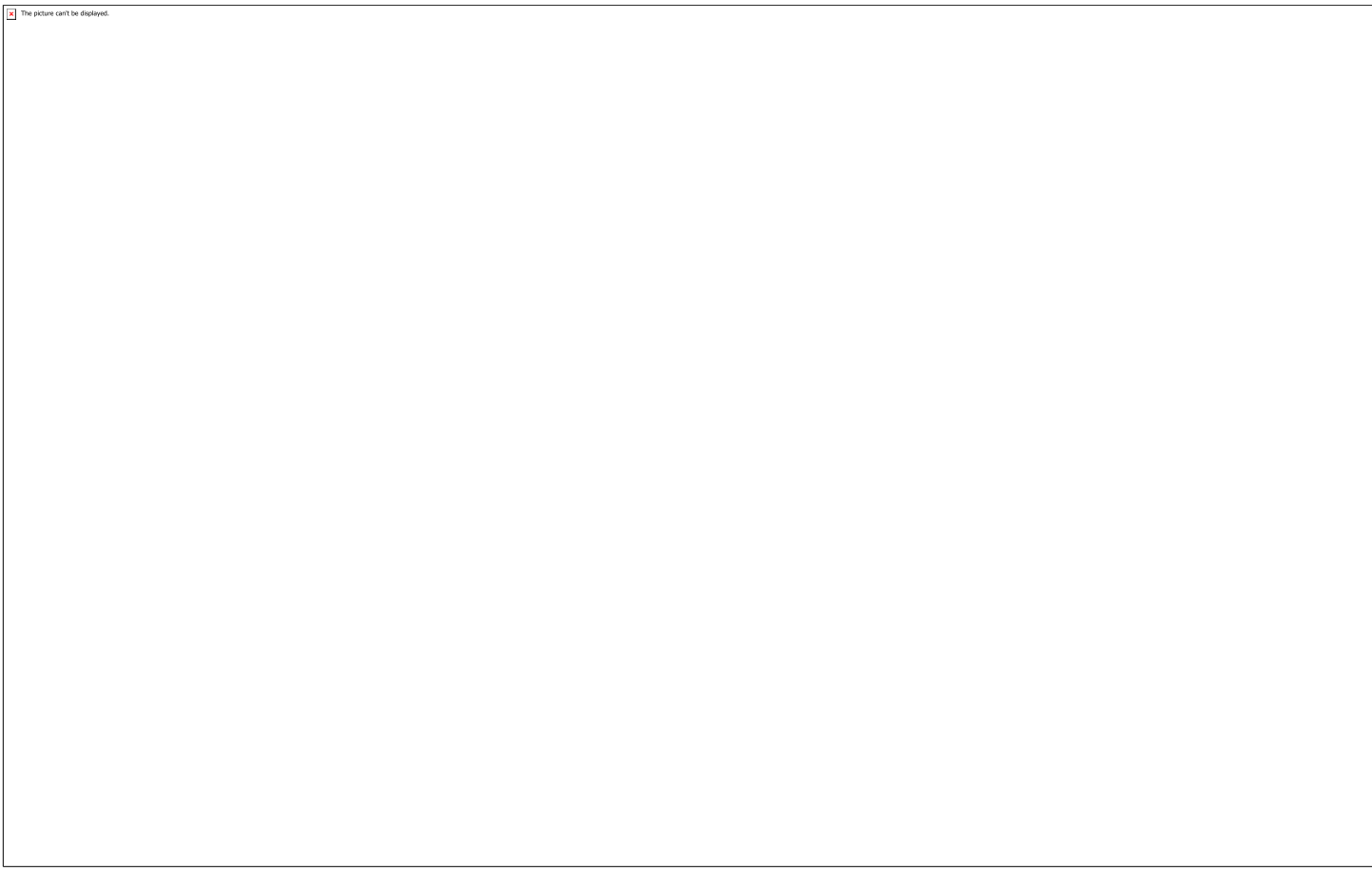

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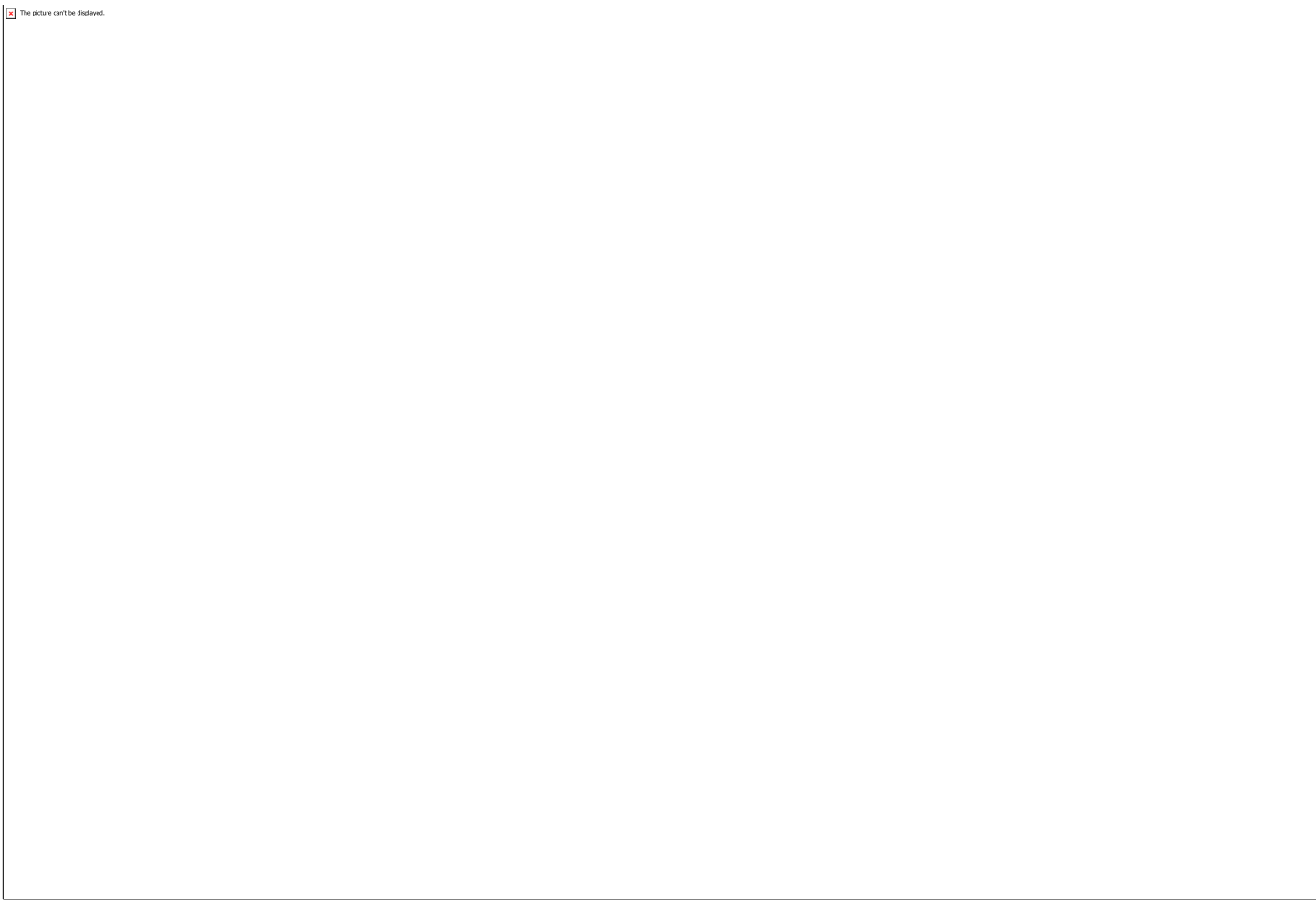

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Poster keywords

Fasting, Behavioural Economics, Quality Improvement, General Medicine, Australia

18

Acute kidney injury after gynaecological surgery – a systematic review and meta-analysis

Carni Reza, Niels Klarskov, Ilda Amirian
Department of Gynecology & Obstetrics, Herlev Hospital, Herlev, Denmark

Competition Track

EBPOM abstract competition

Abstract

ABSTRACT

INTRODUCTION. Acute kidney injury (AKI) is an abruptly occurring loss of renal function, which includes both kidney injury and kidney impairment. It is associated with mortality and morbidity due to the increased risk of developing chronic kidney disease. The aim of this systematic review and meta-analysis was to determine the incidence of post-operative AKI in gynaecological patients without pre-existing kidney injury.

METHODS. Systematic searches were made for studies examining the association between AKI and gynaecological surgery published between 2004 and March 2021. The primary outcome was to compare two subgroups of studies; a screening group where AKI was diagnosed by systematic clinical screening and a non-screening group where AKI was diagnosed randomly.

RESULTS. Among the 1,410 records screened, 23 studies met the inclusion criteria, reporting AKI in 224,713 patients. The pooled incidence for post-operative AKI after gynaecological surgery in the screening subgroup was 7% (95% confidence interval (CI): 0.04-0.12). The overall pooled result for post-operative AKI after gynaecological surgery in the non-screening subgroup was 0% (95% CI: 0.00-0.01).

CONCLUSION. We found a 7% overall risk of post-operative AKI after gynaecological surgery. We found a higher incidence of AKI in the studies screening for kidney injury, illustrating that the condition is underdiagnosed when not screened for. An important risk exists of healthy women developing severe renal damage as AKI is a common post-operative complication with a potentially severe outcome that may be prevented in early diagnosis.

Key Points

- Risk of post-operative acute kidney injury (AKI) after gynaecological surgery is 7% in studies screening for kidney injury.
- AKI is followed by a potentially severe outcome that may be prevented through early diagnosis.

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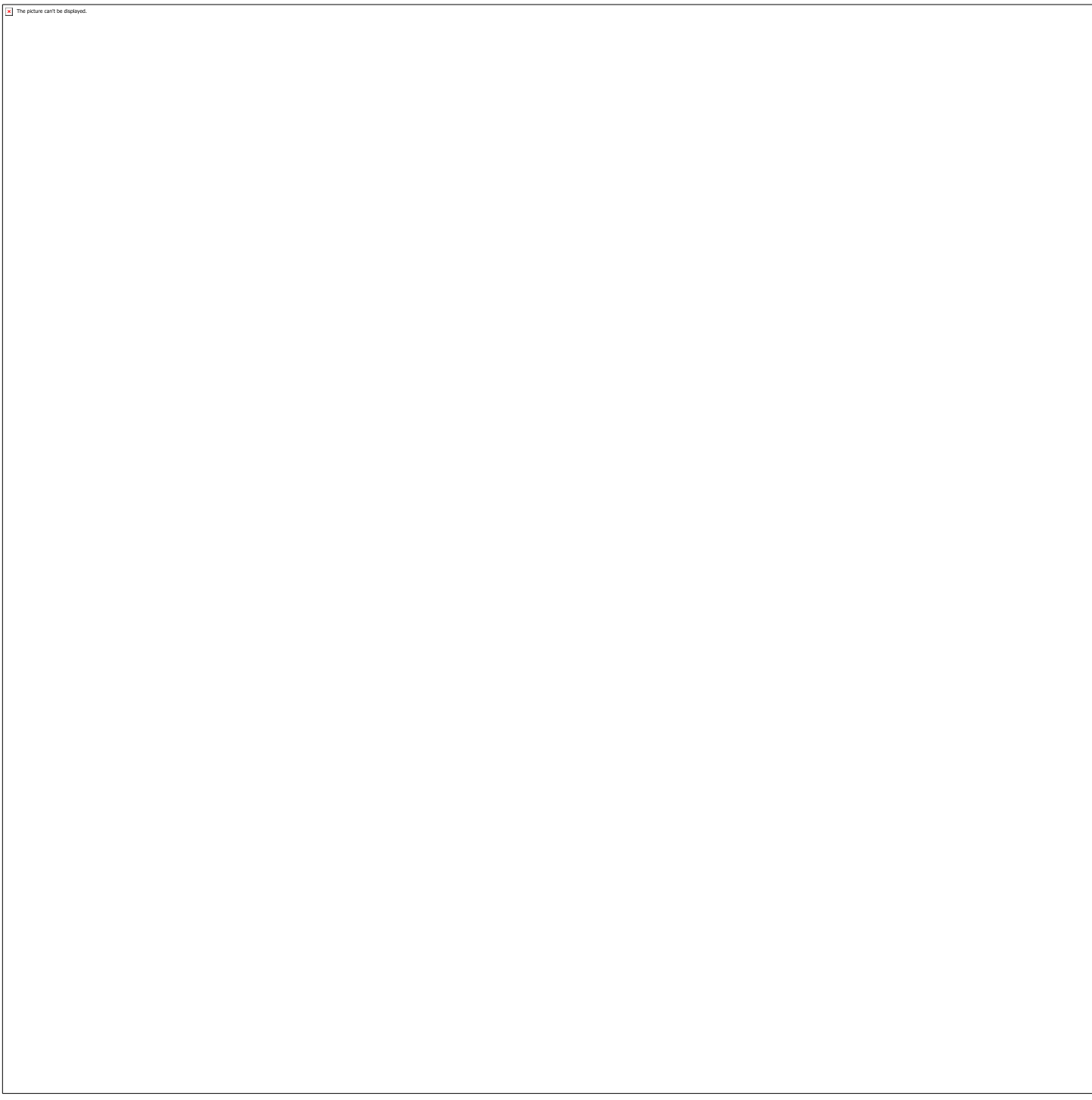

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Poster keywords

Gynaecological surgery, postoperative, acute kidney injury, systematic clinical screening, systematic review.

19

Does a Multimodal Prehabilitation Program Improve Sleep Quality and Duration in Patients Undergoing Colorectal Resection for Cancer? Pilot Randomized Control Trial

Sarah Atoui[1], Francesco Carli[1], Paquito Bernard[2], Lawrence Lee[1], Barry Stein[1], Patrick Charlebois[1], Sender Liberman[1]
[1]McGill University, Montreal, Canada. [2]UQAM University, Montreal, Canada

Competition Track

iPOETTS abstract competition

Abstract

Introduction: About 8.8–79.1% of patients complain of sleep disorders before surgery (1, 2), reportedly double that of the general population (3). This pilot randomized controlled trial aimed to assess the impact of a multimodal prehabilitation program compared to standard of care (SOC) on sleep quality and parameters (sleep onset latency (SOL), wake after sleep onset latency (WASO), total sleep time (TST) and sleep efficiency (SE)) in colorectal cancer patients during the preoperative period and up to 8 weeks after surgery. A secondary objective is to explore how the baseline walking capacity and symptoms of anxiety and depression might influence the effect of the intervention on sleep outcomes.

Methods: One hundred two patients (48.3% female, mean age 65 years) scheduled for elective resection of colorectal cancer were randomized to either multimodal prehabilitation (n = 50) or the SOC (n = 52) groups. The Enhanced Recovery After Surgery (ERAS) protocol was standardised. Self-reported sleep quality was collected at the baseline, before surgery, and 4- and 8 weeks after surgery. However, the Actigraph sleep parameters were collected for 4 consecutive weeks before and after surgery.

Results: No significant differences between groups were observed over time for all subjective and objective sleep parameters. A small positive change in the perceived sleep quality was observed only at the preoperative time point in the prehabilitation group compared to the SOC group (delta (T1-T0) = -1.1, 95% CI (-2.1 to -.1); p = .048). However, patients with low baseline walking capacity and anxiety symptoms showed improvement in the WASO preoperatively (d = .56, 95% CI (1.2 - 37.2); p =.04) and TST at 8 weeks after surgery (d = .51, 95% CI (92.3-127.7), p = .02).

Conclusions: Patients with physical performance limitations or anxiety symptoms at the baseline may benefit more from multimodal prehabilitation in decreasing wakefulness during the night and increasing sleep duration.

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Poster keywords

Prehabilitation, Multimodal intervention, Colorectal surgery, Sleep quality, Sleep parameters

20

A survey of preoperative surgical nutrition practices, opinions, and barriers across Canada

Natalia Tomborelli Bellafronte[1], Roseann Naser[2], Leah Gramlich[3], Francesco Carli[4], A. Sender Liberman[5], Daniel Santa Mina[6], Geoff Schierbeck[7], Olle Ljungqvist[8], Chelsia Gillis[1]
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Competition Track

iPOETTS abstract competition

Abstract

Introduction: Malnutrition is prevalent and associated with adverse surgical and patient outcomes. Despite being potentially modifiable, malnutrition risk screening is not a standard preoperative practice. We conducted a survey to understand healthcare professionals' (HCP) opinions and barriers regarding screening and treatment of malnutrition.

Methods: HCPs working with adult surgical patients in Canada were invited, through professional society newsletters, to complete an online survey with open- and closed-ended questions. Barriers to preoperative malnutrition screening were assessed using the Capability Opportunity Motivation-Behaviour model [1]. Quantitative data were analyzed using descriptive statistics and qualitative data were analyzed using summative content analysis.

Results: Of the 225 HCPs surveyed (n=111 dietitians, n=72 physicians, n=42 allied health), 96%-100% believed that perioperative malnutrition is a modifiable risk factor associated with worse surgical outcomes and is a treatment priority. Yet only 63% (n=141/225; dietitians: 88% vs. physicians: 40%) of respondents reported screening for malnutrition, and 42% (48/113) referred positively screened patients to a dietitian. The most prevalent barriers for malnutrition screening were related to opportunity, including availability of resources (57%, n=121/212), time (40%, n=84/212) and support from others (38%, n=80/212) (figure 1). Qualitative findings suggest a perceived difficulty in meeting demands of screening as a preventative care given the mandate of tertiary care organizations. HCPs suggested the referral process begin in the surgeons' office (with electronic health records) and involve a collaboration between acute and primary care settings (figure 2).

Conclusion: There is a gap between perception and practice among surgical HCPs pertaining to perioperative malnutrition. Although HCPs believe treatment for malnutrition is a priority, the

opportunity to screen for nutrition risk was a great barrier. To address this gap, HCPs suggest the preoperative nutrition care pathway be re-imagined with a link to primary care services.

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Poster keywords

Prehabilitation, Surgical nutrition, Malnutrition, Pre-Operative, Enhanced Recovery After Surgery

21

Project APO (Arthroplasty Pain Optimisation) – Improving Arthroplasty Pain Management at Fremantle Hospital

Callan Jolliffe, Leena Nagappan
Fiona Stanley Fremantle Hospitals Group, Perth, Australia

Competition Track

EBPOM abstract competition

Abstract

Introduction

Poorly controlled acute postoperative pain is associated with increased morbidity, functional and quality-of-life impairment, delayed recovery, higher healthcare costs, prolonged opioid use and is a predictor of chronic pain.(1) A Fremantle Hospital audit found up to 49% of arthroplasty patients experience severe postoperative pain, resulting in 30% of patients failing to meet rehabilitation goals. These findings were considered unacceptable and informed Project APO; a Quality Improvement initiative.

Methods

A clinical service redesign methodology approved by the Western Australian Department of Health, which employs principles from 6 Sigma, LEAN and Change Management was utilised, with stakeholders engaged throughout the project.(2) Process Mapping revealed 49 issues that informed subsequent data collection. After quantifying these, a root cause analysis was performed to generate and implement solutions.

Results

Patient survey (n=24) found 71% felt they did not receive adequate information regarding pain and pain management preoperatively. The survey found 50% of patients searched for additional pain management information. The most common search locations were YouTube (28%) and Google (28%). The survey found 83% of patients wanted formal education on pain management, with written (43%) and video (32%) preferred.

Half of Fremantle Hospital's Surgical Nurses (n=20) were surveyed. Results showed 100% wanted more education on arthroplasty pain management and only 25% had received this received this education. Self-reported knowledge and confidence (scale 1-10) on post-operative pain management was 5.3 and 6.8 respectively. Only 60% of staff stated they could accurately predict the course of postoperative pain. Subsequent questions revealed only 20% could. The survey revealed no clear severe pain escalation pathway existed.

Medical record audit (n=50) found when severe pain was reported, PRN analgesia was administered 55% of the time. When PRN analgesia was provided, on 56% of occasions the smallest dose was administered.

Solutions and Conclusion

The solutions from Project APO included establishing a virtual pain education clinic, design and implementation of a severe arthroplasty pain escalation pathway, establishing staff education, procurement of cold-therapy units and distribution of written educational resources. Additionally, Project APO informed further activities including optimising Day 0 mobilisation and the development of educational videos.

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Poster keywords

Quality Improvement, Virtual Education, Arthroplasty, Acute Pain, Analgesia

22

Exercise capacity prior to major cancer surgery: A cross-sectional observational study of the validity of the 6MWT and 30STS

Grace Butson[1], Lara Edbrooke[1,2], Hilmy Ismail[1], Linda Denehy[1,2]
[1]Peter MacCallum Cancer Centre, Melbourne, Australia. [2]The University of Melbourne, Melbourne, Australia

Competition Track

iPOETTS abstract competition

Abstract

Background: Cardiopulmonary exercise testing (CPET) is the gold standard for measuring exercise capacity(1), however, it is resource intensive and has limited availability. This study aimed to determine: 1) the association between the six-minute walk test (6MWT)(2) and the 30-second sit-to-stand test (30STS)(3) with CPET peak oxygen uptake (VO2peak) and anaerobic threshold (AT) and 2) determine 6MWT and 30STS cut points associated with higher risk of postoperative complications.

Methods: A cross-sectional study, retrospectively analysing data collected from a tertiary cancer centre over a 23-month period. Measures included CPET VO2peak and AT, 6MWT and 30STS test. Correlations were used to characterise relationships between variables. ROC analyses determined 6MWT and 30STS cut points that aligned with CPET variable cut points.

Results: 156 participants were included. The 6MWT and 30STS displayed moderate correlations with VO2peak, rho=0.65, p=0.01 and rho=0.52, p<0.005 respectively. Fair correlations were observed between AT and 6MWT (rho=0.36, p=0.01) and 30STS (rho=0.41, p<0.005). The optimal cut points to identify VO2peak <15ml/min/kg were 493.5m on the 6MWT and 12.5 stands on the 30STS test and for AT <11ml/min/kg were 506.5m on the 6MWT and 12.5 stands on the 30STS test.

Conclusion: Both the 6MWT and 30STS test could be used as alternative tools for measuring exercise capacity preoperatively in the cancer setting where CPET is not available. A range of 6MWT and 30STS cut points, according to sensitivity and specificity levels, may be used to evaluate risk of postoperative outcomes.

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Poster keywords

Cancer Surgery, Exercise Capacity, CPET, 6MWT, 30STS

23

Should patients be required to lose weight before surgery? A qualitative investigation of clinician, commissioner and policy-maker views on pre-surgical obesity reduction.

Joanna McLaughlin, Amanda Owen-Smith
Bristol Medical School, University of Bristol, Bristol, United Kingdom

Competition Track

EBPOM abstract competition

Abstract

Introduction:

Prehabilitation interventions to reduce obesity are encouraged in the UK NHS, but regional variation exists in the approach to policymaking. Despite National Institute for Health and Care Excellence (NICE) guidance to the contrary, [1.] 'health optimisation' policies with mandatory body mass index (BMI) thresholds are increasingly used to alter access to joint replacement surgery. The recent formation of Integrated Care Boards presents an opportunity for reassessment. This qualitative study investigated key informants' views on pre-surgical BMI-related policies.

Methods:

Semi-structured interviews were conducted with twenty participants (commissioners, policy-makers, and clinical/public health professionals) involved in health optimisation policymaking and implementation. The interview topic guide covered: evidence, policy and practice, inequalities, and the future of health optimisation. Interview transcript data were coded, formulated into matrices for cross-comparison and thematically analysed to identify key themes. [2.]

Results:

Current practice

Participants accepted obesity reduction as a worthwhile pre-surgical goal, but expressed concern over the use of BMI as a threshold and the limited evidence for health optimisation's impact on long-term outcomes. Some participants supported a mandatory element of health optimisation, but more prominent were concerns about a risk of worsening health inequalities through limiting access to surgery. Participants highlighted obesity's association with deprivation and under-provision of inclusive weight management support.

Variation

Participants identified structural elements allowing variation: lack of national guidance, commissioning structures which permit localised decision-making, lack of challenge to NICE guidance non-compliance, and uncertain ownership of prehab planning/budgetary responsibility. Local factors driving restrictive policies included the strength of local leadership, appetite for reputational/legal risk, waiting list/financial pressures, 'policy equalisation' across neighbouring geographies, framing obesity as a personal responsibility, and 'cherry-picking' evidence.

Future directions

Participants were consistent in identifying factors important in the expansion of good practice in prehabilitation: the need for adequate funding and leadership, digital and data linkage improvements, medical education and staff training, availability of accessible obesity services, and rigorous evaluation of existing approaches. There was variation in participants' views on where health improvement is best placed within surgical pathways and in the role of national prehabilitation requirements.

Conclusions:

Regional variation in pre-surgical obesity intervention reflects local drivers to introduce BMI policies that restrict access to surgery. Clinicians, commissioners and policy-makers seek to increase evidence-based prehabilitation sensitive to impacts on health inequalities.

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Poster keywords

elective surgery, obesity, health optimisation, weight loss, qualitative

24

A Study of Postoperative Delirium in Older Adults Undergoing Emergency Surgery

Nada Mousa[1,2], Ghada Hassan[2], Abd Alrahman Ahmad[2], Sabry Abdallah[2], Fang Smith[1]
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[2]Department of Anaesthesiology, Intensive Care and Pain Management, Faculty of Medicine, Menoufia University, Menoufia, Egypt

Competition Track

EBPOM abstract competition

Abstract

Introduction

Postoperative delirium (POD) is one of serious complications due to its detrimental economic and social effects and is associated with longer hospital stays and higher mortality[1]. This study investigated the incidence, independent risk factors, and outcomes of POD after emergency laparotomy (EL).

Methods

This observational cohort study investigated the incidence, independent perioperative risk factors, and outcomes associated with POD in elderly (≥ 65) undergoing EL at Queen Elizabeth Hospital, Birmingham, UK, registered on National Emergency Laparotomy Audit (NELA) database. modified Richmond Agitation Sedation Scale (mRASS) and Confusion Assessment Method for ICU (CAM-ICU)[2] were used to conduct daily delirium screenings on patients for five days postoperatively. Clinical notes were scanned for keywords using validated chart abstraction method[3].The final diagnosis was made using Diagnostic and Statistical Manual of Mental Disorders-5 (DSM-5). Univariate and multivariate analyses were performed for entire study population as well as a subgroup of patients without pre-existing neurological dysfunction.

Results

Of the 185 patients analysed, 30.3% (56) developed POD, which was significantly associated with ageing, preoperative kidney disease, neurological disorders, and sepsis. POD was also significantly related to higher ASA, NELA mortality, operative severity, and physiological severity scores, as well as the urgency of the operation. POD was significantly associated with increased ICU admission, longer hospital stay, and duration of mechanical ventilation. Ageing, female sex, preoperative neurological dysfunction, sepsis, higher operative severity score, and postoperative mechanical ventilation were independent risk factors. A subgroup analysis of 159 patients without pre-existing neurological disorders showed that 27% (43 patients) developed POD, and ageing, preoperative chronic kidney disease, low albumin level, and postoperative mechanical ventilation were independent risk factors.

Conclusion

POD is common after EL in elderly, with longer hospital stays and high mortality. Ageing, sepsis, kidney and neurological diseases are independent risk factors. Effective preventive strategies targeting the risk factors may help reduce POD and improve outcomes.

Acknowledgement

We thank Higher Education Ministry in Egypt for funding and Assistant Prof. Thomas Jackson and Prof. Tonny Veenith for their guidance.

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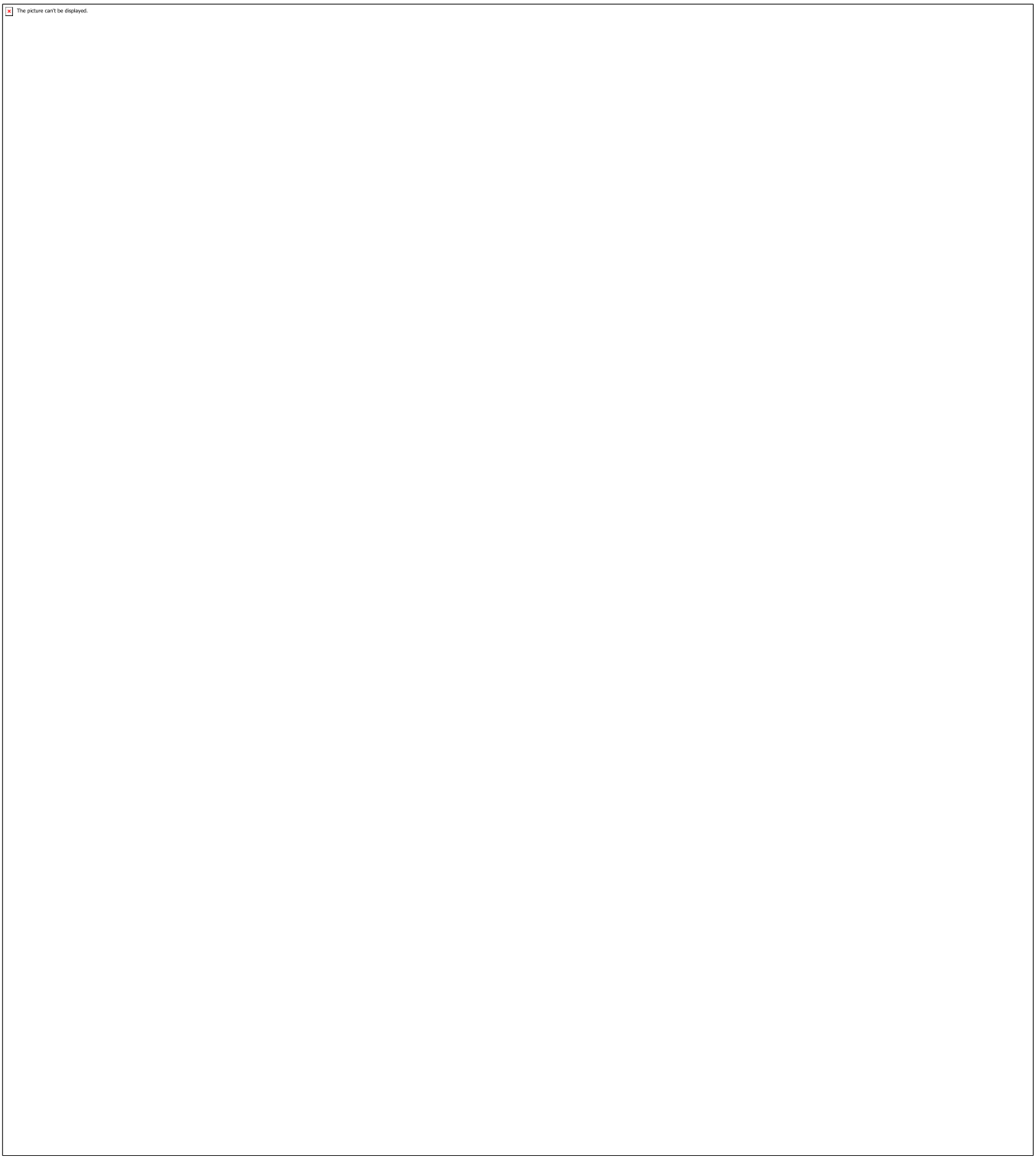

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Poster keywords

Postoperative delirium, Emergency laparotomy, Delirium, NELA, Elderly

25

Socioeconomic disparities in preoperative comorbidities in patients on the elective surgical waiting list in the North East North Cumbria region.

James Prentis[1], Mackenzie Fong[2], Bob Gafney[3], Chris Snowden[1], Edward Kunonga[3], Claire Madigan[4], Eileen Kaner[2]
[1]Freeman Hospital, Newcastle, United Kingdom. [2]Newcastle University, Newcastle, United Kingdom. [3]NECS, Newcastle, United Kingdom. [4]Loughborough University, Loughborough, United Kingdom

Competition Track

EBPOM abstract competition

Abstract

Introduction: Patients living in areas of greatest socioeconomic deprivation have a significantly higher risk of surgical complications. One likely determinant is the greater prevalence of comorbidities and related health risk behaviours in this group, especially those known to heighten the risk of complications and prohibit access to surgical services. Generating a profile of the population waiting for surgery, including prevalence and nature of comorbidities and risk behaviours, would allow policy makers and commissioners to prioritise peri-operative healthcare resources e.g., prehabilitation, to improve surgery access and outcomes. Research concerning the characteristics of patients waiting for surgery in England is scarce. Therefore, our aim was to examine the prevalence and nature of comorbidities of patients across the socioeconomic spectrum waiting for high volume low complexity surgical procedures.

Methods: This cross-sectional study used data from the Rapid Actionable Insight Driving Reform (RAIDR) database linking primary and secondary care data within the North East and North Cumbria region (NENC). Patients were included if they had been classified as priority three (can wait >1 month) and four (can wait >3 months) and awaiting surgery in a high-volume low complexity surgical speciality (general surgery, orthopaedics, gynaecology, urology, and ENT). Outcomes were examined by deprivation using the index of multiple deprivation (IMD) score. Outcomes of interest were smoking status, BMI, type 2 diabetes mellitus, atrial fibrillation, COPD, hypertension, and presence of serious mental illness or learning disability.

Results: Data from 86,503 patients were included in the analysis and 32% of patients were from the most deprived quintile (IMD1). 59% were female, 25% were living with obesity and 15% were smokers. Patients in IMD1, though younger, had significantly increased rates of comorbid disease and health risk behaviours.

Conclusions: People living in areas of greater socioeconomic deprivation are disproportionately represented on surgery waiting lists and are living with significantly more co-morbidities and health risk behaviours known to impact surgery access and outcomes. Service provision and resource allocation must be planned, designed, and delivered with deprivation in mind, otherwise health inequalities will be

amplified. Prehabilitation interventions represent one such service that can minimise inequalities; these should prioritise weight management, smoking cessation, and management of hypertension.

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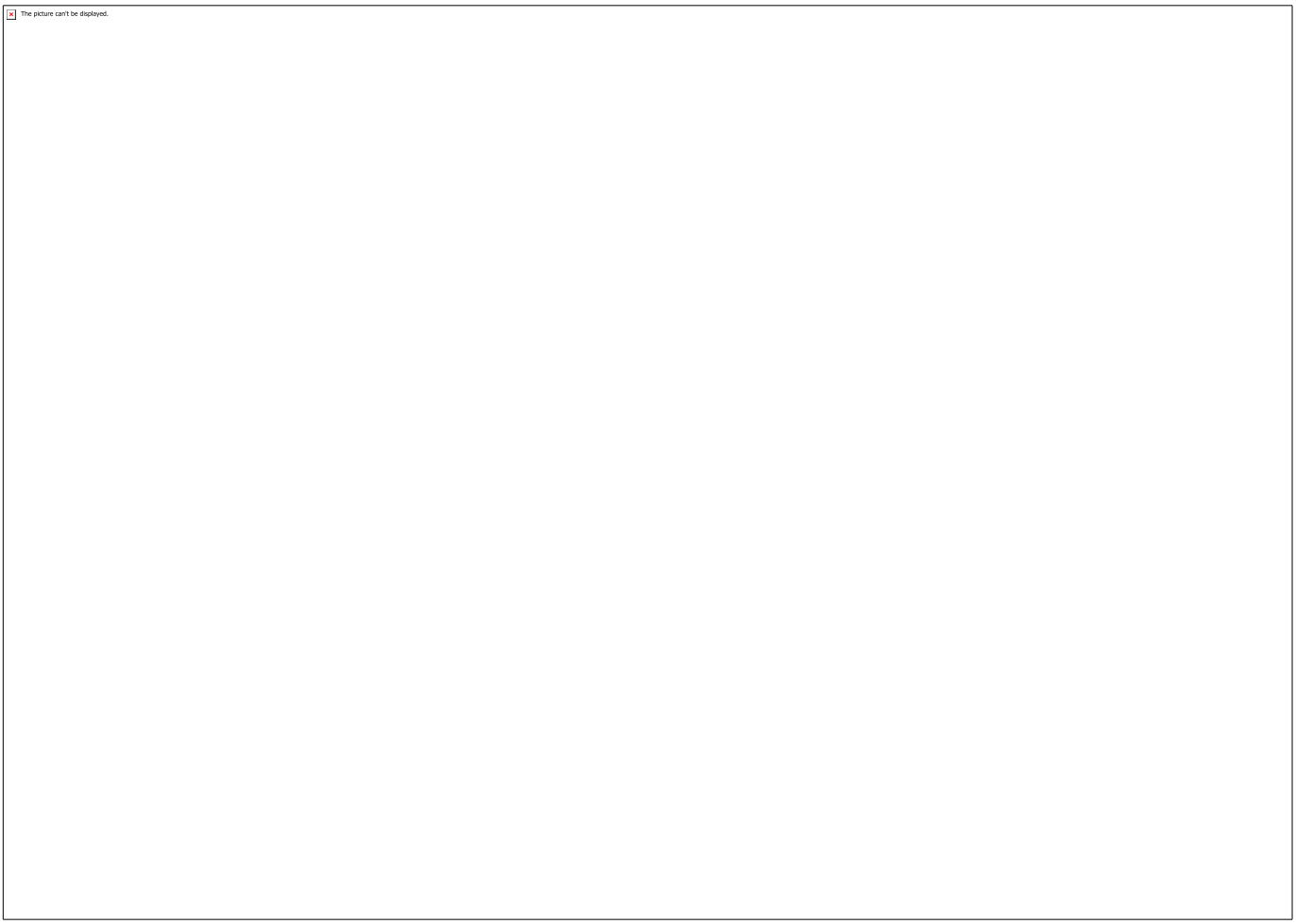

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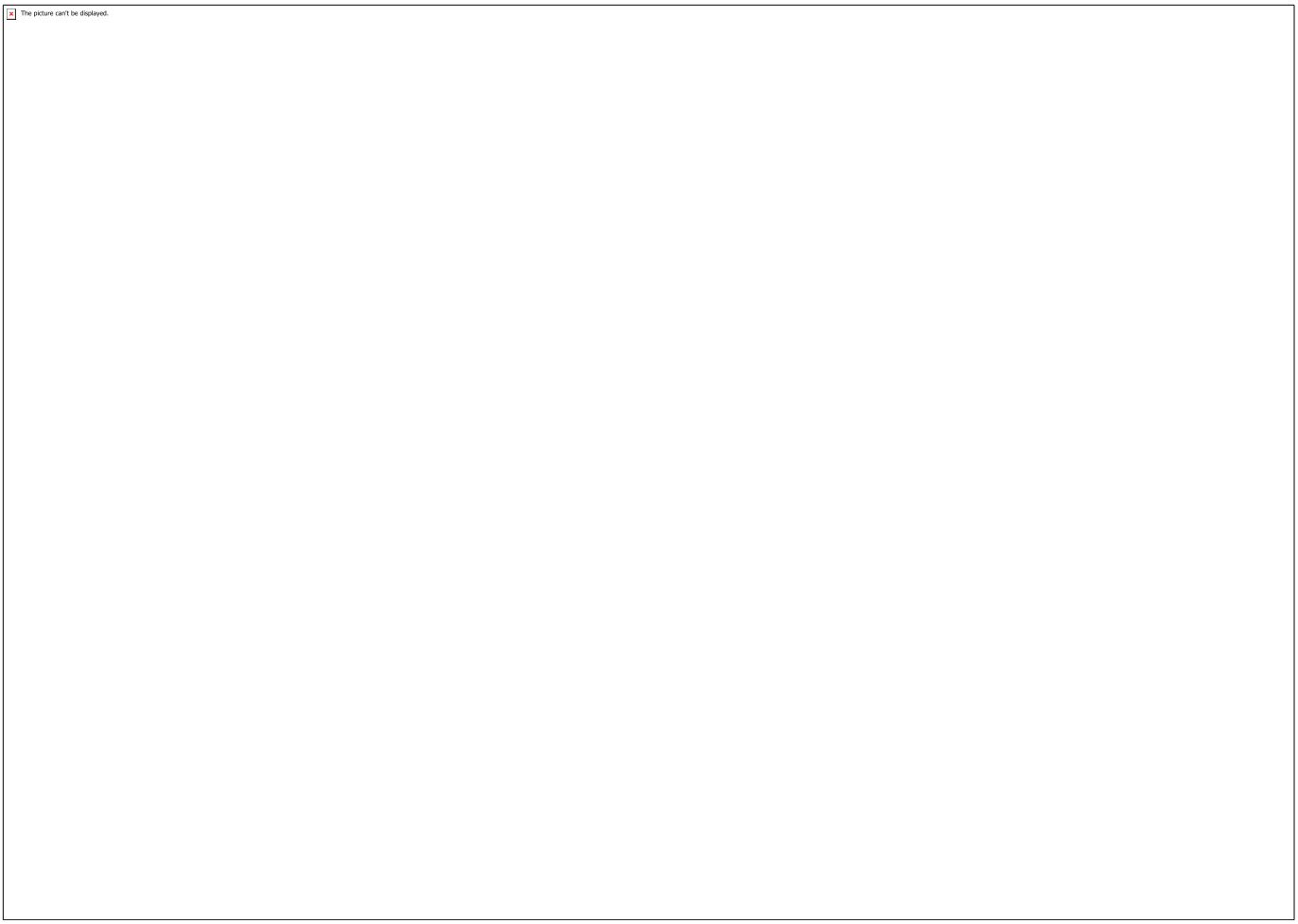

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Poster keywords

social deprivation, population health management, prehabilitation, early screening, comorbidities

26

Preoperative PhA as a prognostic indicator of postoperative complications in patients undergoing colorectal surgery

Natalia Tomborelli Bellafronte[1], Sarah Atoui[2], A. Sender Liberman[3], Thomas Schricker[4], Francesco Carli[4], Chelsia Gillis[1]
[1]School of Human Nutrition, McGill University, Montreal, Canada. [2]Division of Experimental Surgery, McGill University, Montreal, Canada. [3]Department of Surgery, McGill University Health Centre, Montreal, Canada. [4]Department of Anesthesia, McGill University, Montreal, Canada

Competition Track

iPOETTS abstract competition

Abstract

Introduction: Phase angle (PhA), derived from bioelectrical impedance analysis (BIA), is a measure of cellular membrane integrity. PhA is associated with muscle mass and function and is a prognostic factor for survival and disability in cancer populations. No study has investigated the association between preoperative PhA and functional recovery post-colorectal surgery (CRS). Our objective was to characterize patients undergoing CRS according to preoperative PhA, and investigate whether PhA predicts postoperative complications and functional recovery.

Methods: CRS patients were evaluated from 0 to 15 days before surgery and 4-6 weeks after discharge from hospital. Six-minute walk test (6MWT), handgrip strength (HGS) and 30s-sit-to-stand (30s-STS) tests assessed muscle function at both timepoints. Before surgery, patients completed the EQ-5D generic quality of life questionnaire and z-scores were calculated according to sex and age of a Canadian reference population. PhA was calculated from BIA and standardized PhA (zPhA) was determined by calculating z-scores according to the sex, age and BMI of a reference population. We stratified the sample into low- and high- preoperative zPhA based on a cut-point of -1.29 (associated with preoperative 6MWT <400m, a prognostic indicator) and compared groups using descriptive statistics as median [interquartile range] or mean ± SD. Complications throughout primary stay and until 30-days after discharge were evaluated by Comprehensive Complication Index (CCI). Negative binominal regression models (adjusted for comorbidities) were used to evaluate the relationship between preoperative zPhA with CCI and functional recovery (postoperative 6MWT- preoperative 6MWT).

Results: Of 129 patients, 53% were women, 78% had cancer diagnosis, 84% underwent laparoscopic surgery, and median age was 67 years [53-76]. Compared to higher zPhA (n=68), patients with low preoperative zPhA (n=61) had a raw PhA of 4.06 ± 0.83° versus 5.63 ± 0.92° (p<0.001), were older (73y [55-80] versus 64y [53-73], p=0.03), had lower preoperative functional capacity (6MWT: 432 ± 154m versus 513 ± 120m, p<0.001; HGS: 21kg [16-27] versus 31kg [25-39], p<0.001; 30s-STS: 12 ± 5 versus 17 ± 5, p<0.001), lower weight (72 ± 14kg versus 79 ± 13kg, p=0.02), reduced fat-free mass index (16.9 ± 3.6kg/m^2 versus 18.7 ± 2.7kg/m^2, p=0.002), and reported worse quality of life (EQ-5D: 0.73 ± 0.20 versus

0.83 ± 0.09, p=0.002). Preoperative zPhA did not predict functional recovery (p=0.811), but complication incidence was greater for those with lower compared to higher zPhA (IRR:1.51, 95%CI:1.12,2.02).

Conclusion: Our findings suggest that preoperative PhA, which is a practical and feasible tool, can be applied as a predictor of postoperative complications in CRS patients. [Funding:MITACS].

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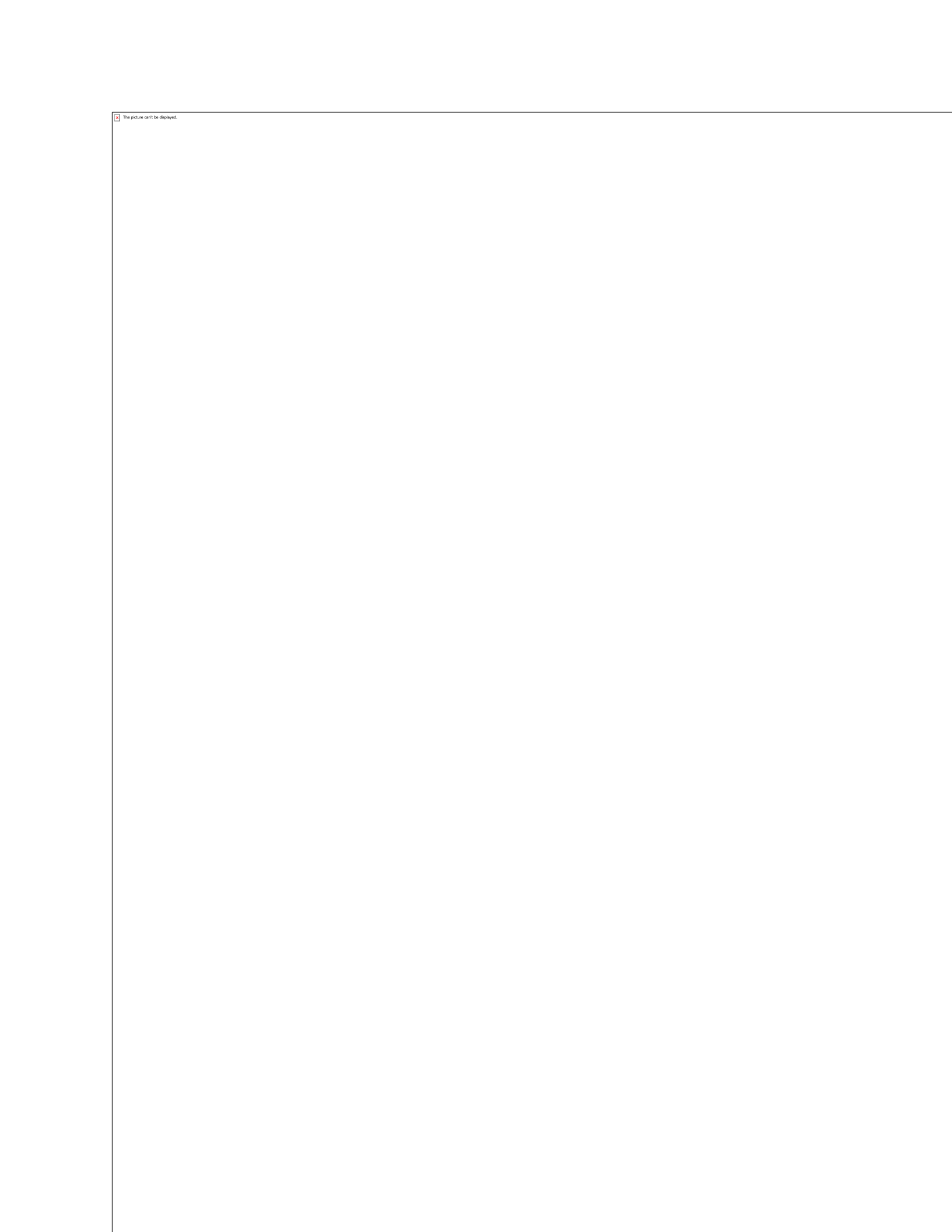
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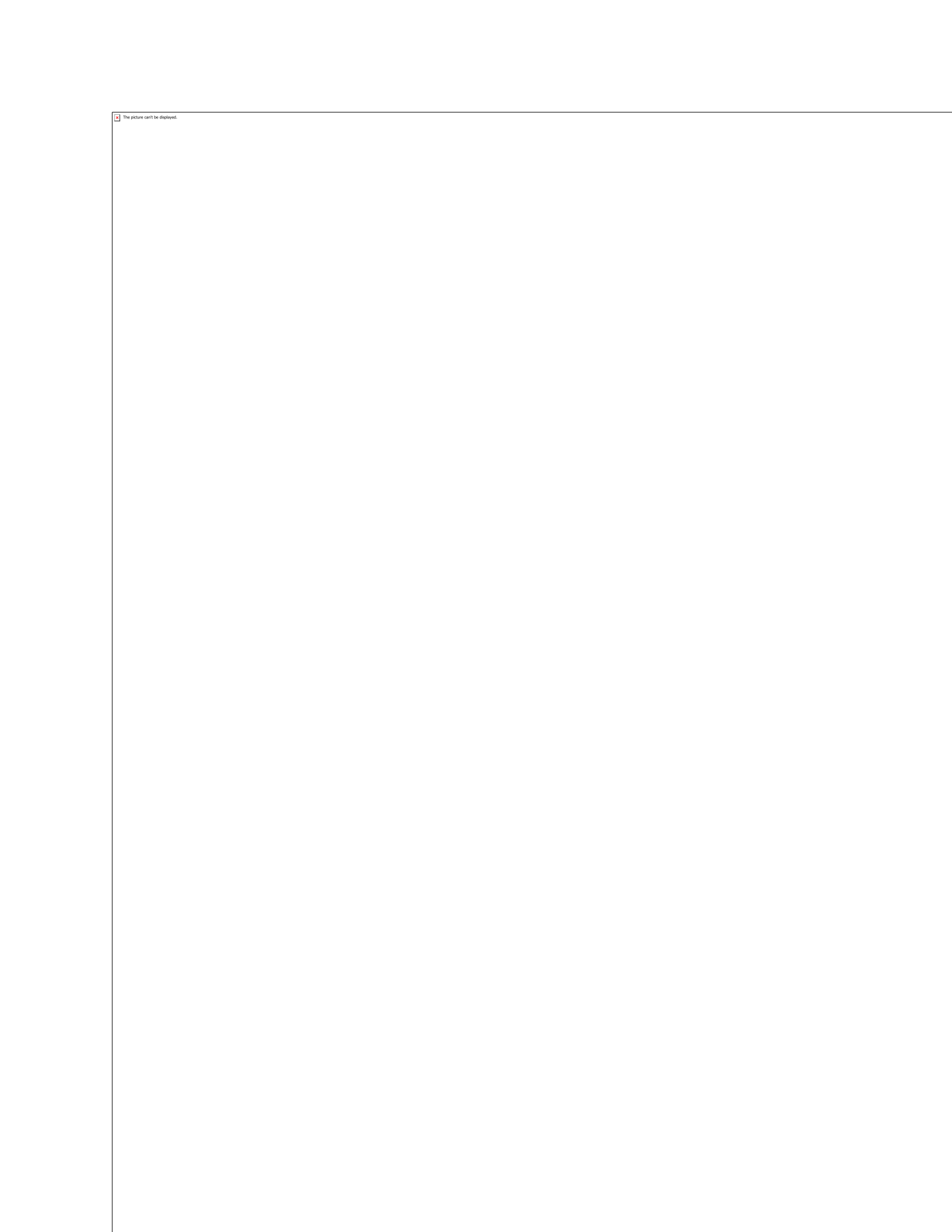
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Poster keywords

Phase angle, Post-operative complications, Pre-Operative, Colorectal Surgery, Physical Function

27

Healthcare professional perspectives of delivering a digital prehabilitation intervention within routine clinical care

Rebecca Livingston[1,2], James Durrand[2], Dean Wilkinson[2], Kerry Colling[2], Nicola Powley[2], Nathan Griffiths[2], Garry Tew[3], David Yates[4,5], Claire Brookes[4], Gerard Danjoux[1,2,5], Leah Avery[1]
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Competition Track

EBPOM abstract competition

Abstract

Introduction

Surgical pathways are increasingly incorporating preoperative health optimisation, termed 'prehabilitation' to better prepare patients for surgery. However, uptake relies on healthcare professionals (HCPs) promoting their use and providing ongoing support to maximise engagement. We sought to identify the behavioural determinants, barriers and enablers to HCPs promoting and supporting patients to use a theory and evidence-informed multibehavioural digital prehabilitation intervention (iPrepwell).

Methods

Twenty perioperative HCPs from six clinical specialties were purposively sampled from two NHS Trusts. Participants completed a Capability, Opportunity, Motivation - Behaviour (COM-B) self-evaluation questionnaire and subsequently took part in a semi-structured interview informed by COM-B findings. Interview data were coded and thematically analysed independently by two researchers using the Theoretical Domains Framework (TDF). The TDF comprises 14 domains (e.g., knowledge, behavioural reegulation, intentions), distilled from 33 theories of behaviour change. This offered a theoretical lens to data analysis to inform digital intervention development.

Results

Eleven TDF domains were identified from the data. These included 'Knowledge', 'Skills', 'Memory, attention and decision-making', 'Behavioural regulation', 'Social influence', 'Environmental context and resources', 'Social/professional role and identity', 'Beliefs about capabilities', 'Beliefs about consequences', 'Intentions' and 'Emotion'.

HCPs reported the need for training to enable them to perform three specific delivery roles (i.e., promoter, prompter, and overseer), and the need for interpersonal skills training specific to these intervention roles to maximise patient interaction. A lack of 'Opportunity', (e.g., time with patients, resources and processes/systems to deliver prehabilitation within existing organisational climate and pressure) and 'Motivation' (e.g., beliefs about the effectiveness of prehabilitation, patient suitability, and professional compatibility with intervention roles) were considered barriers to engaging with prehabilitation programme use and delivery.

Conclusion

Delivery of a digital prehabilitation intervention to preoperative patients relies on HCP training to target 'Capability' (to understand 'why' and 'how' to deliver the intervention), 'Opportunity' (a simple protocol for intervention delivery), and 'Motivation' (delivery to be compatible with clinical/professional roles and approaches to patient care). These findings have informed the content of a training intervention to facilitate digital intervention delivery to maximise uptake and engagement of pre-surgical patients.

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Poster keywords

Digital, Prehabilitation, Healthcare professionals, Barriers and enablers, Behaviour change theory

28

Nutritional Assessment Findings of Complex Colorectal Surgery Patients; Results from a Pilot Colorectal Prehabilitation Study

Marie Sheahan, Emmet Andrews, Shane Killeen, Morgan McCourt
Cork University Hospital, Cork, Ireland

Competition Track

iPOETTS abstract competition

Abstract

Introduction:

There is an extensive body of evidence that those who are undernourished, as marked by a history of weight loss and symptoms indicative of poor nutritional state, have greater surgical morbidity and mortality (Gillis et al 2021).

The objective of this study was to assess the nutritional status of patients scheduled for complex colorectal surgery using Patient Generated Subjective Global Assessment (PG-SGA).

Methods:

This cohort study used data collected from patients enrolled in a pilot multimodal prehabilitation programme from June 2021 to May 2022. Patients were aged >18years and were scheduled for major colorectal surgery. The nutritional status of these patients was assessed using PG-SGA. PG-SGA comprises of: history of weight loss, dietary intake change, gastrointestinal symptoms, functional capacity, and metabolic demand related to the underlying disease and physical exam focused in the detection of muscle wasting, loss of subcutaneous fat and the presence of oedema (Da Silva et al, 2015)

Qualitative analysis of the relationship between SGA score and Body Mass Index (BMI) and age was assessed using scatter plots on Excel.

Results:

From 30 patients referred to the pilot programme, PG-SGA was completed on 24 patients. Table 1 shows the demographics of the patients who completed the study.

Based on PG-SGA nutritional triage recommendations, 87.5%(n=21) of patients assessed required dietetic intervention. Within this group 29% had a SGA score between 4-8 indicating an intervention by a dietitian in conjunction with a nurse or physician was required. 33.3% had a critical need for improvement in symptom management and nutritional intervention based on PG-SGA score >9.

The Pearson's coefficient calculated for Body Mass Index and SGA (-0.03) and Age and SGA (+0.164) indicated no correlation.

Conclusion:

Though the sample size was small, this study does suggest that nutritional optimisation as part of a prehab programme is warranted .Dietitians have an essential role within multimodal prehabilitation programmes ensuring appropriate preoperative nutritional assessment and optimisation .

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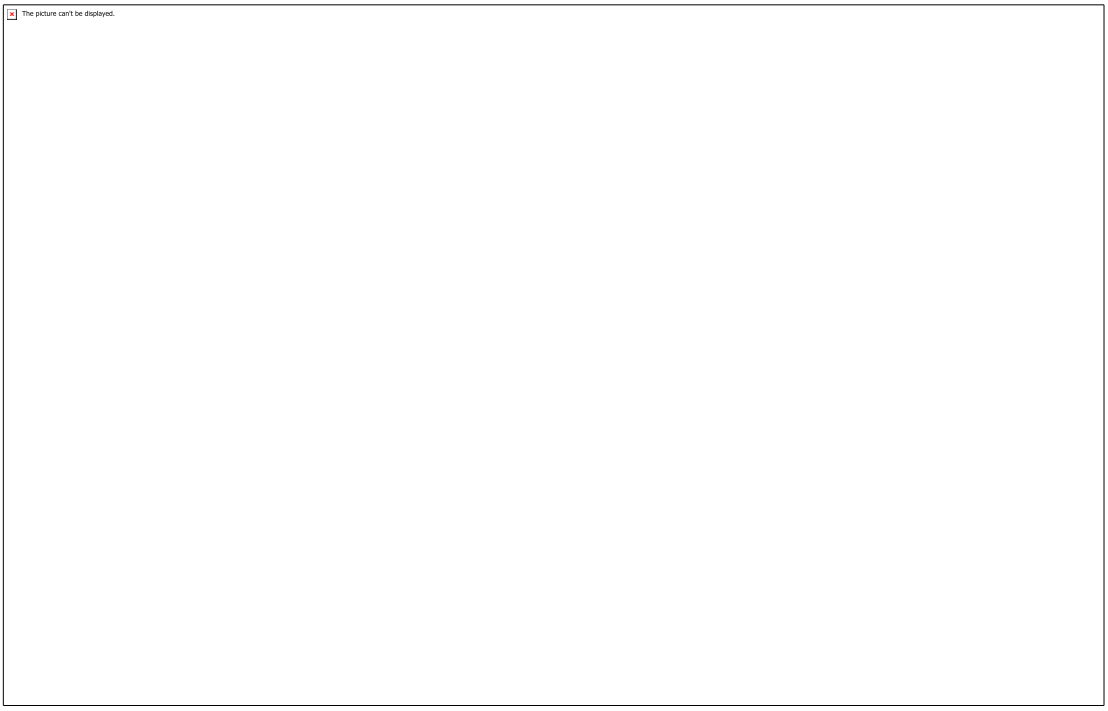

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Poster keywords

Dietitian, Nutrition, Assessment, Colorectal, Multimodal Prehabilitation

29

Feasibility and effectiveness of a smart device application for home-based prehabilitation in patients undergoing cancer surgery: A prospective observational study

Soohyuk Yoon[1], Dongju Lee[1], Ho-Jin Lee[1,2], Susie Yoon[1,2]
[1]Seoul National University Hospital, Seoul, Korea, Republic of. [2]Seoul National University College of Medicine, Seoul, Korea, Republic of

Competition Track

iPOETTS abstract competition

Abstract

Introduction: Prehabilitation before surgery can reduce postoperative complications and improve recovery. Home-based prehabilitation programs have the advantage of being cost-effective and requiring less effort, as they involve patients self-administering after receiving guidance from a physician. This study aims to develop a smart device application-based prehabilitation program and evaluate its feasibility and effectiveness for cancer patients scheduled for surgery.

Methods: This prospective observational pilot study recruited 23 adult patients in a prehabilitation program, who were scheduled for lung or liver cancer surgery. Patients visited a preoperative clinic to receive exercise, nutrition, well-being assessment, and education for using a smart device application (Fit-Op, Figure 1) at least 3 weeks before surgery. We evaluated the compliance with the program, the patient's satisfaction with using the application (7-point scale), and the 6-minute walk distance on the day before surgery.

Results: Among 23 patients included in this study, 20 (15 lung cancer and 5 liver cancer patients) were included in primary analysis. The median (IQR) duration of program participation was 40 (26–55) days. They all completed task of aerobic exercise (more than 30 min, 3 days per week). Additionally, 65% (n=13) of the participants completed a resistance exercise task of 2–3 sets of 10 repetitions, three days per week. A survey questionnaire was completed by 90% (n=18) of the participants, and no adverse events occurred during the study. In patient satisfaction questionnaires, 75% (n=15) answered 'very satisfied' or 'satisfied' in using the application for physical training and 75% (n=15) responded they experienced an improvement in their functional capacity. Six-minute walk test distance (median [IQR]) significantly increased after participating in the prehabilitation program (Pre: 524.1 [471.8–565.2] vs. Post: 540.0 [503.1–572.6] m; P=0.002 by Wilcoxon signed-rank test, Figure 2).

Conclusion: Prehabiliation program using a smart device application was feasible and safe for patients scheduled for cancer resection surgery. This may improve their physical health status before surgery.

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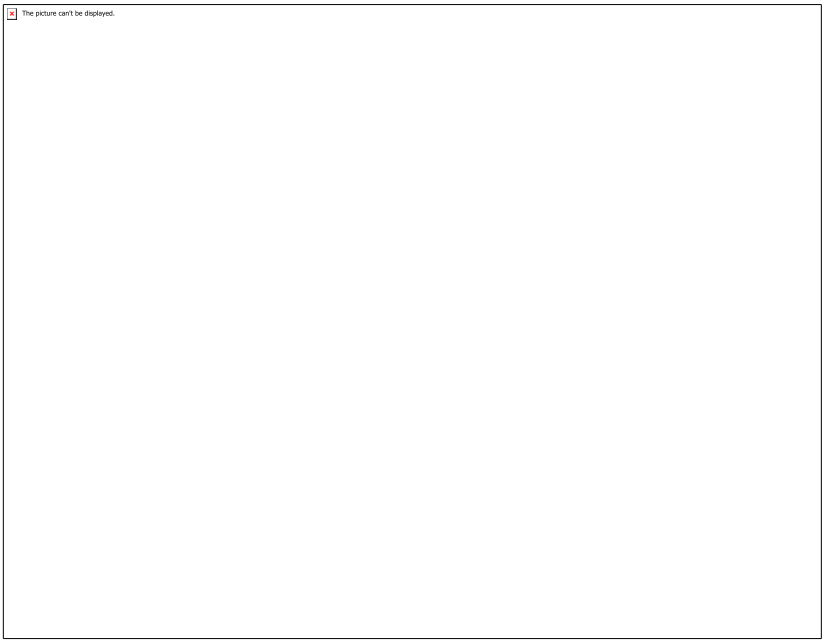

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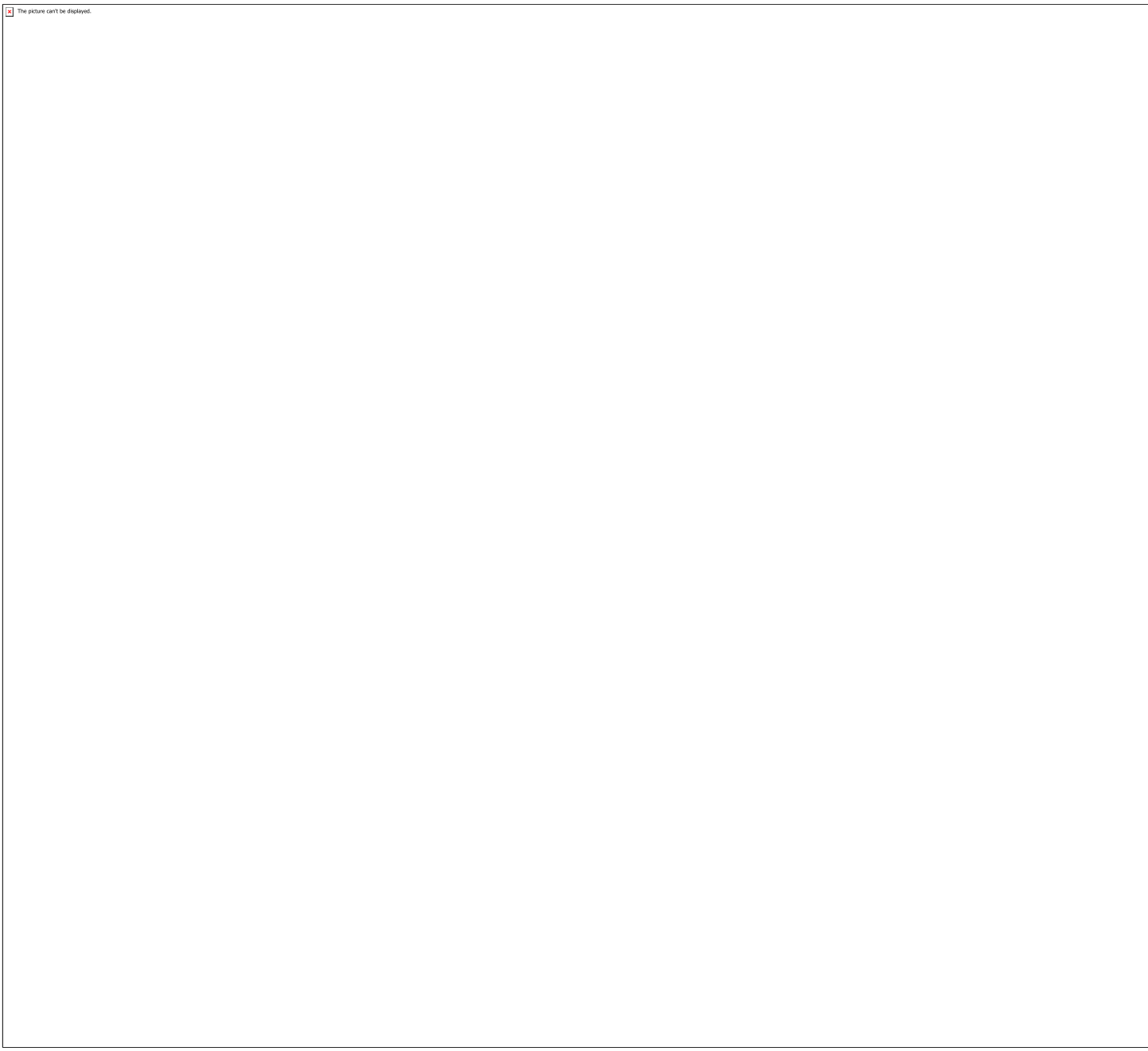

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Poster keywords

prehabilitation, smart device application, home-based, exercise, cancer surgery

30

Prehabilitation – Improving The Road To Recovery In Head And Neck Cancer Patients

Nupur Shukla, Nelson Low
Monash Health, Melbourne, Australia

Competition Track

EBPOM abstract competition

Abstract

INTRODUCTION: Head and neck cancer diagnoses in Australia continue to rise. The use of free tissue transfer in reconstruction has improved outcomes; however, it adds a layer of surgical complexity. Associated risk factors include a smoking history, alcohol intake and poor nutrition, making this a high-risk cohort. Cancer prehabilitation is a multimodal approach that optimises patients in the pre-operative period. Current literature shows promising results in cardiothoracic and abdominal surgery. Little is known of its effect on head and neck patients.

PURPOSE: We aim to create a prehabilitation program for patients with head and neck malignancies. This pilot study will collect prospective data on the rate of complications, length of stay and disposition. Our overall goal is to improve morbidity and mortality in this cohort.

METHODOLOGY: We propose running an integrated program focusing on physical and cognitive strengthening, nutritional optimisation, and support. This would involve ENT and plastic surgeons, anaesthetists and physicians working with allied health professionals such as physiotherapists, dietitians, speech pathologists and psychologists to optimise patients. With so many disciplines involved patients can be left overwhelmed. The employment of a 'co-ordinator' or 'liaison nurse' would benefit patients and families. Despite the short timeframe between diagnosis and treatment, prehabilitation can be run as home-based exercises and cognitive programmes to suit this patient group.

CONCLUSION: Prehabilitation is an opportunity to best prepare patients for the high demands of surgery. Given its success in other surgical groups, it is an important research target for head and neck cancer patients.

Program permission

yes

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Poster keywords

prehabilitation, head & neck, cancer, multimodal approach , pilot study

31

Outcomes following cardiopulmonary exercise testing in pre-operative assessment clinic, a district general's experience.

Steven Dixon[1], Caroline Murphy[2], Azlan Tsia[2], John Barrett[2]
[1]Royal Blackburn Hospital, Blackburn, United Kingdom. [2]Blackpool Victoria Hospital, Blackpool, United Kingdom

Competition Track

iPOETTS abstract competition

Abstract

Introduction: Cardiopulmonary exercise testing (CPET) provides an objective measure of cardiovascular fitness as part of a comprehensive pre-operative assessment. A low anaerobic threshold (AT) is generally considered to be associated with poorer post-operative outcomes [1]. However, there is a lack of consensus on the degree to which it can be utilised as a prognostic indicator [1,2]. This study aimed to review the association between low AT, planned post-operative admission destination (Surgical High Care (SHCU) vs High Dependency Unit (HDU)) and post-operative outcomes.

Methods: Retrospective data was collected for 334 consecutive patients who attended a pre-operative assessment clinic in 2019, of which 236 proceeded with major abdominal or nephro-ureteric surgery. Surgery performed, planned and actual postoperative admission destination, anaerobic threshold, length of stay and any complications were recorded and analysed. Statistical analysis was then performed using chi-squared and wilcoxon rank sum test.

Results: Only those who were triaged to HDU post-operatively for a left-hemicolectomy had a significantly higher rate of post-operative complication compared to those admitted to SHCU ($p<0.004$). An AT <11 was not associated with a significantly increased rate of post-operative complication. There were generally no significant differences in length of stay between those admitted to HDU electively and SCHU, nor a significant difference for those with an AT <11. Eight patients had unexpected HDU admissions with a median AT of 9.3

Discussion: Further research is required on how to best utilise CPET results and to develop prognostic tools to predict post-operative outcomes. This will help to inform patients of their operative risks and make appropriate use of the limited resource of HDU beds.

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Poster keywords

CPET, CPEX, Cardiopulmonary exercise, pre-operative assessment, length of stay

32

A multidisciplinary postoperative teaching programme – working together for a safer patient journey.

Parineeta Ghosh[1,2], Isra Hassan[1,3], Eleanor Powell[3,4], Carolina Britton[1,5], David Walker[1,5]
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Competition Track

EBPOM abstract competition

Abstract

Introduction

With the attendant risks of an ageing and increasingly comorbid patient population undergoing high risk surgery, it is vital that we can provide excellent care to ensure a safe perioperative period for our patients.

An innovative online training programme "Post-Anaesthetic Care Unit (PACU): A multidisciplinary post-operative teaching programme" has been developed at University College London. Its objective is to support nurses and allied health professionals in providing care to surgical patients with appropriate training in this specialised environment.

Methods

This pilot study aims to evaluate this course in the development of a cross-skilled workforce to look after the high-risk surgical patient. This is of particular significance given the pressures on the NHS with regards to backlog of surgical services.

The course is being piloted across 7 Welsh health boards. Eligibility of students were self-identified or recommended by supervisor. Advertised using flyers (Figure 1.) which were circulated via email to all trusts in the region. All students were invited to participate in a 'pre-course' survey which gathered data from about attitudes, priorities, and behaviours towards medical educational intervention.

Figure 1. Course flyer

Results

A total of 89 students have participated in the study.

Table 1. shows the demographics of participants.

Overall, the programme was viewed positively, especially for gaining and applying new knowledge and increasing confidence. Pre-course survey revealed 4 main themes – relevance to role, confidence, fill a gap in education and high standard of nursing care.

Conclusion

At present there are no standard for nursing care in looking after post-operative patients on a Post-Anaesthetic Care Unit (PACU). This Royal College of Nursing accredited programme will help establish a nursing standard of care. Alongside it will also help relieve pressures on Critical Care services and allow surgical teams to continue to undertake safe surgery by being able to provide a cross-skilled healthcare workforce.

This is an ongoing educational research project with results which will aid in the co-creation of the course with student staff partnership.

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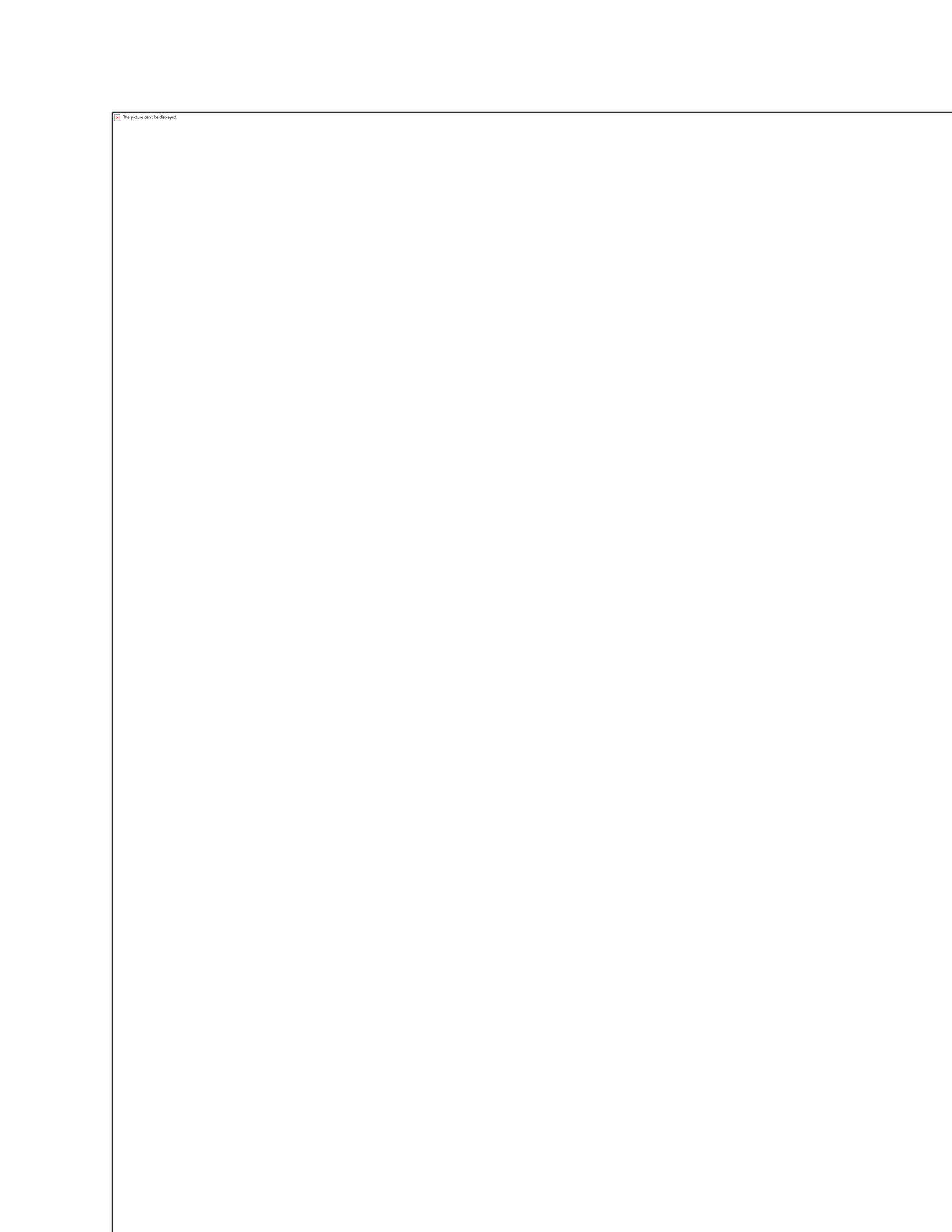
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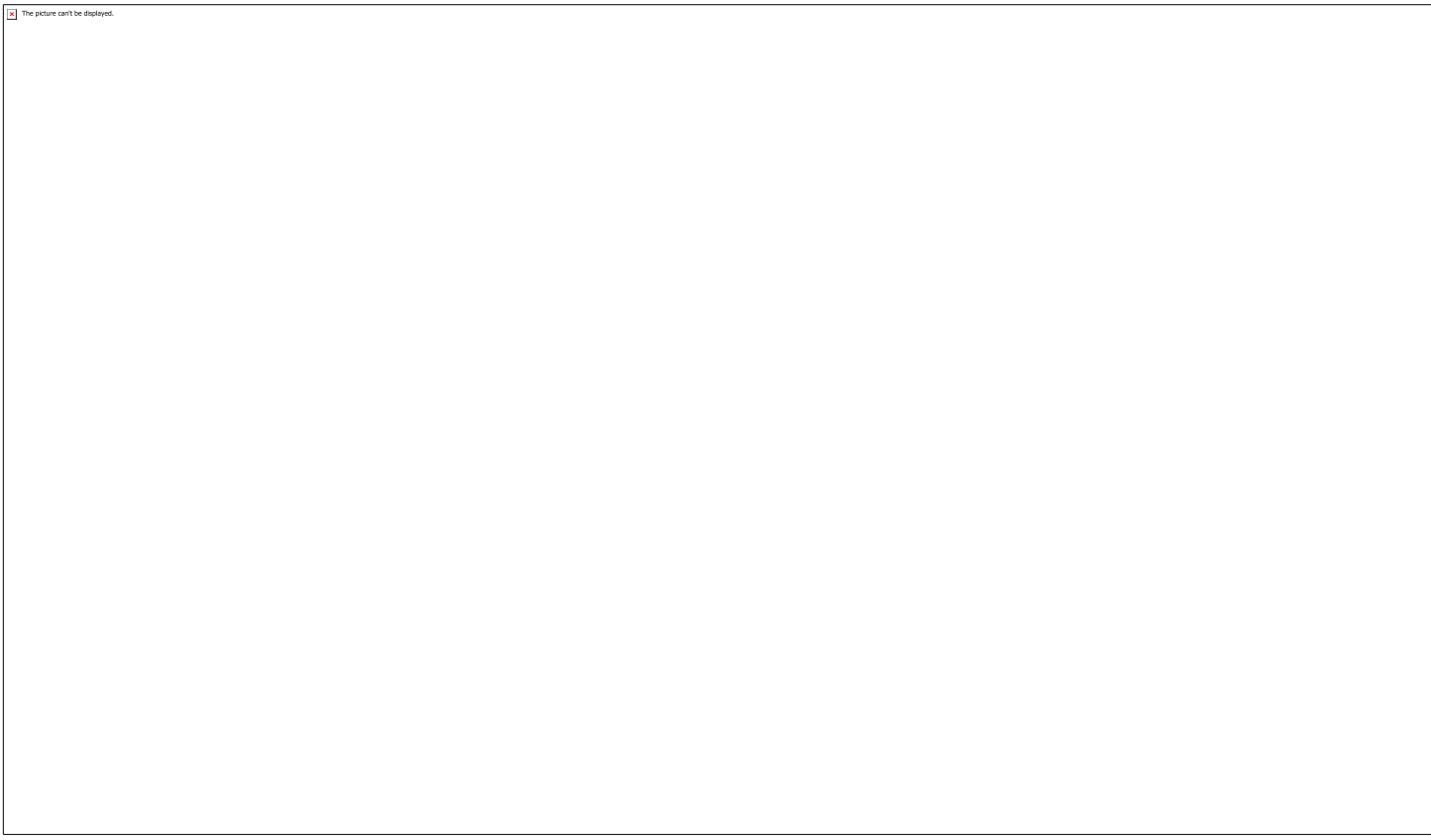

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Poster keywords

PACU, Teaching Programme, Multidisciplinary, High-risk patient care, Online learning

33

Assessing Adherence to Intra-Operative Antibiotic Prophylaxis Guidelines

Andrew Duncan[1], Sean Boyd[2], Aine Cafferkey[2]
[1]Royal Perth Hospital, Perth, Australia. [2]St James Hospital, Dublin, Ireland

Competition Track

EBPOM abstract competition

Abstract

Introduction:

The objective of our study was to assess intra-operative antibiotic choice for cases lasting less than 4 hours and to examine if hospital guidelines were followed during these cases.

Methods:

We performed a retrospective chart review on every case that lasted less than four hours for a period of two weeks in St James Hospital and reviewed if the antibiotic was administered as per hospital guidelines. Any case which did not have clear guidelines was excluded. We only focused on antibiotic choice, as other components of antibiotic prophylaxis (dose, timing, and re-dosing) were reviewed in separate audits.

Results:

During the 2-week period, we retrieved 195 intra-operative charts for cases lasting less than 4 hours. Of these 195 cases, 187 had clear Surgical Antimicrobial Prophylaxis guidelines. The most common Surgical Specialty was General Surgery, in which 92% of cases followed antimicrobial guidelines.

Overall, 84% of cases had adhered to the Antimicrobial Prophylaxis guidelines. The most common reason for non-adherence was due to usage of a different drug in the same class, i.e. gentamicin used instead of amikacin in Urology cases.

Conclusion:

Clear hospital guidelines with education sessions provide an important guidance to aid anaesthetists in choosing which antibiotics to administer intra-operatively. They ensure patients avoid the pitfalls associated with incorrect antibiotic administration, namely Surgical Site Infections.

We would like to further our research by repeating this audit in the future, with a combined audit assessing all 4 components of appropriate antibiotic prophylaxis.

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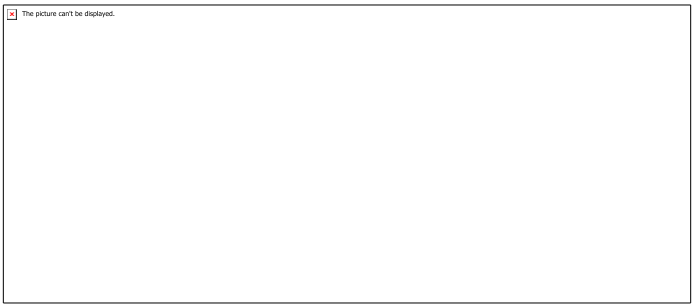

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Poster keywords

antibiotics, prophylaxis, adherence, intra-operative, peri-operative

34

Does prehabilitation for lung surgery facilitate the role of inpatient physiotherapist?

DO JUN KIM
McGill University Health Centre, Montreal, Canada

Competition Track

iPOETTS abstract competition

Abstract

Introduction: Postoperative physiotherapy enhances patient recovery for a safe and early discharge home. According to ERAS guidelines for lung surgery, patients are assessed by a physiotherapist during their hospital stay for mobility, chest physiotherapy, postoperative education and for readiness of a safe discharge home1. On average, length of stay for lung surgery is 3-4 days, thus receiving at least 3-4 physiotherapy sessions during their hospital stay. The purpose of this study is to determine whether patients who underwent a prehabilitation program would require fewer postoperative physiotherapy visits.

Methods: This study received ethics approval. The medical charts of 87 lung cancer patients (Mean age: 67 ±35.3) enrolled in a prehabilitation program from October 2021 to March 2023 were collected and analysed for perioperative surgical and medical data, and postoperative physiotherapy usage prior to hospital discharge. The multimodal prehabilitation program included either supervised or homebased exercise training, nutritional supplementation and relaxation technique over a perioperative period of 6-15 weeks. In particular, the number of physiotherapy session was documented by physiotherapists on the unit who were not aware of patients who received the prehabilitation program.

Results: Among the 87 patients, 68 patients underwent surgery, 10 patients did not undergo surgery and 9 patients were still awaiting surgery. Twenty-five patients required one physiotherapist visit on the first day and 8 patients required 2 visits to be cleared for discharge. In total, 33 (48.5%) of 68 patients, required 1 or 2 days of physiotherapist visit prior to their discharge. (Table1)

Conclusion: Patients who received the prehabilitation intervention tended to require less physiotherapist visits post-operatively. This could potentially reduce caseload for a physiotherapist who can then spend more time on complex cases, with better allocation of limited physiotherapist resources in an already overloaded health system. Better communication between prehabilitation team and the inpatient physiotherapists should be facilitated to promote earlier hospital discharge.

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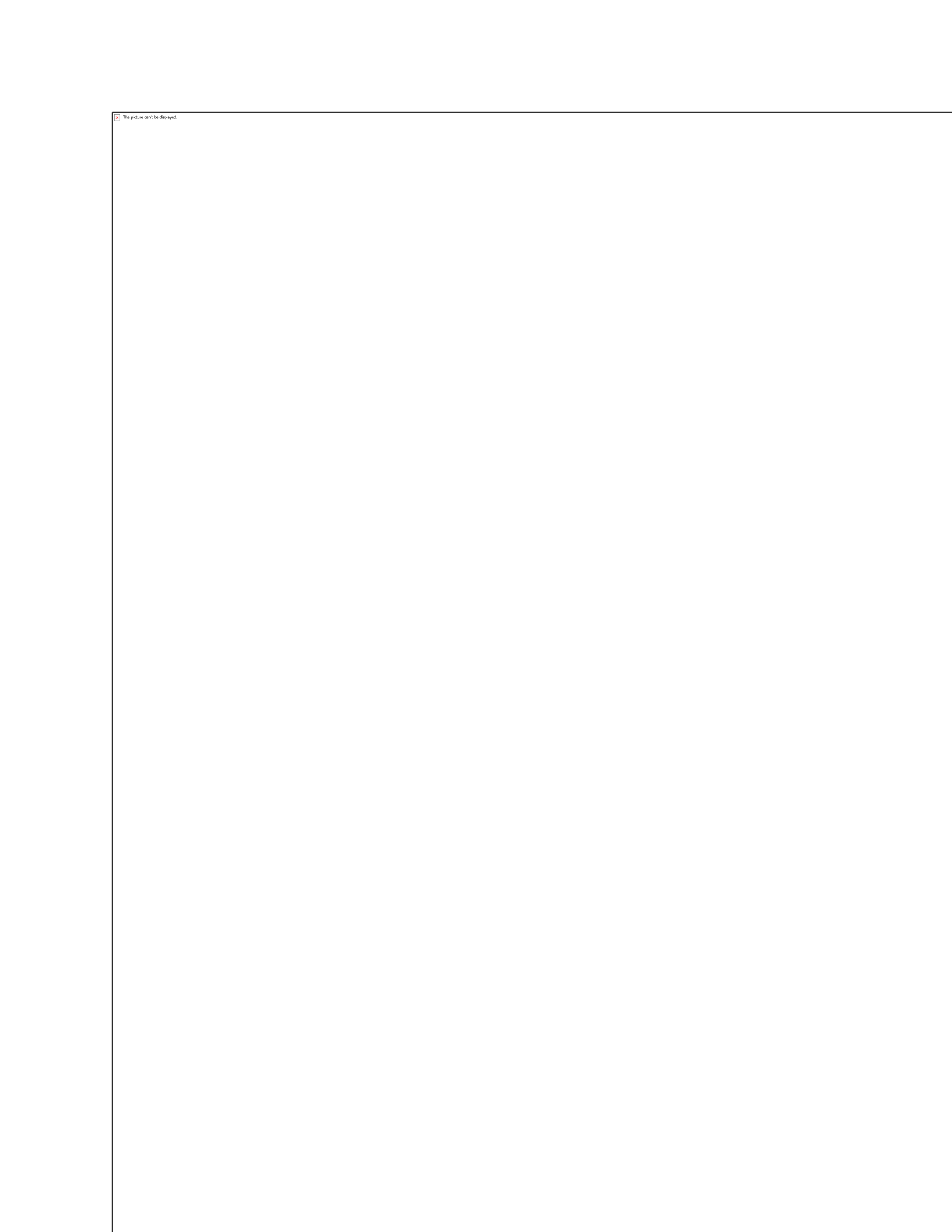
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Poster keywords

Prehabilitation, Lung surgery, Physiotherapist, Facilitate, Discharge

35

Multimodal Supervised Telehealth-based Prehabilitation Program for Patients Undergoing High-Risk Surgery: Preliminary Results of a Pilot Trial

Atilio Barbeito[1,2], Leigh Ann Yeager[2], Kathryn Porter-Starr[1], Sandhya Lagoo[1,2], Cori Corcoran[2], Jeanna Blitz[1], Karthik Raghunathan[1,2]
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Competition Track

iPOETTS abstract competition

Abstract

Introduction: Low fitness and poor functional status are among the strongest predictors of postsurgical complications.[1] Prehabilitation aims to improve surgical outcomes by enhancing physical function and fitness in the weeks preceding surgery.[2] Hospital-based prehabilitation programs delivered under direct supervision have the highest compliance rates, yet barriers such as travel time, distance, and transportation limit participation.[3] We present the preliminary results of a study of multimodal supervised telehealth-based prehabilitation in patients undergoing elective high-risk surgery. The study's primary aim is to determine the feasibility, acceptability, and safety of the prehabilitation program. The secondary aim is to establish effect sizes for outcomes of interest.

Methods: Eligible patients were ≥ 50 years old undergoing high-risk surgery and physically deconditioned. The intervention consisted of 3x weekly supervised and individualized exercise sessions delivered via telehealth combined with nutritional support in the form of daily protein, vitamin D and multivitamin supplements within the 3-4 weeks preceding surgery and for 4-6 weeks postoperatively. Participants received twice daily text messages encouraging adherence to the interventions. Feasibility was measured as the percentage of eligible patients agreeing to participate in the program. Acceptability was defined as participating in or consuming ≥75% of the exercise sessions or protein supplements available. Safety was evaluated by the number of adverse events. To evaluate gains in fitness, 2-minute step test (2MST), handgrip strength (HS) and 5-repetition sit-to-stand (5XSTS) test average scores were compared between baseline and post-prehabilitation. Nutrition, anxiety and depression and health-related quality of life were measured pre and post intervention using validated questionnaires. One-sided paired t-tests and Cohen's d were used to test for significance and to calculate the effect size of the score improvements, respectively.

Results: To date, 14 patients have been enrolled in the study. Patients are 93% male between the ages of 50 and 79. The median BMI was 30.1 (range 19.8-34.9). Fourteen patients have undergone prehabilitation and 8 also completed the rehabilitation intervention. For the prehabilitation phase, compliance with the exercise and nutritional interventions was 90% and 50%, respectively. Compliance during the rehabilitation phase was 56% and 33% for the exercise and nutritional interventions, respectively. There were no adverse events. The prehabilitation intervention resulted in improvements in 2MST, 5XSTS and HS scores of 34% ($p<0.001$, $d=-1.4$ [-2.23,-0.54]), 33% ($p<0.001$; $d= 1.35$ [0.5, 2.18])

and 2.71% (p=0.356; -0.2 [d= -1.17, 0.77]) respectively. PG-SGA scores improved by 41% (p=0.369; d=0.42 [-0.42, 1.25]). Gains in fitness were mostly maintained following surgery and further enhanced following rehabilitation. HADS and SF-36 scores improved by 23% (p=0.228, d= 0.34 [-0.43, 1.09] and 22% (p=0.155) respectively post-intervention (Table and Figure).

Conclusion: A multimodal, supervised telehealth-based prehabilitation and rehabilitation program consisting of exercise plus nutritional support is feasible and safe and has adequate acceptability, especially the exercise portion of the intervention. The intervention resulted in significant improvements in fitness before and following surgery. Improvements in mental health and quality of life measures at 6 weeks after surgery were present but not statistically significant in this cohort.

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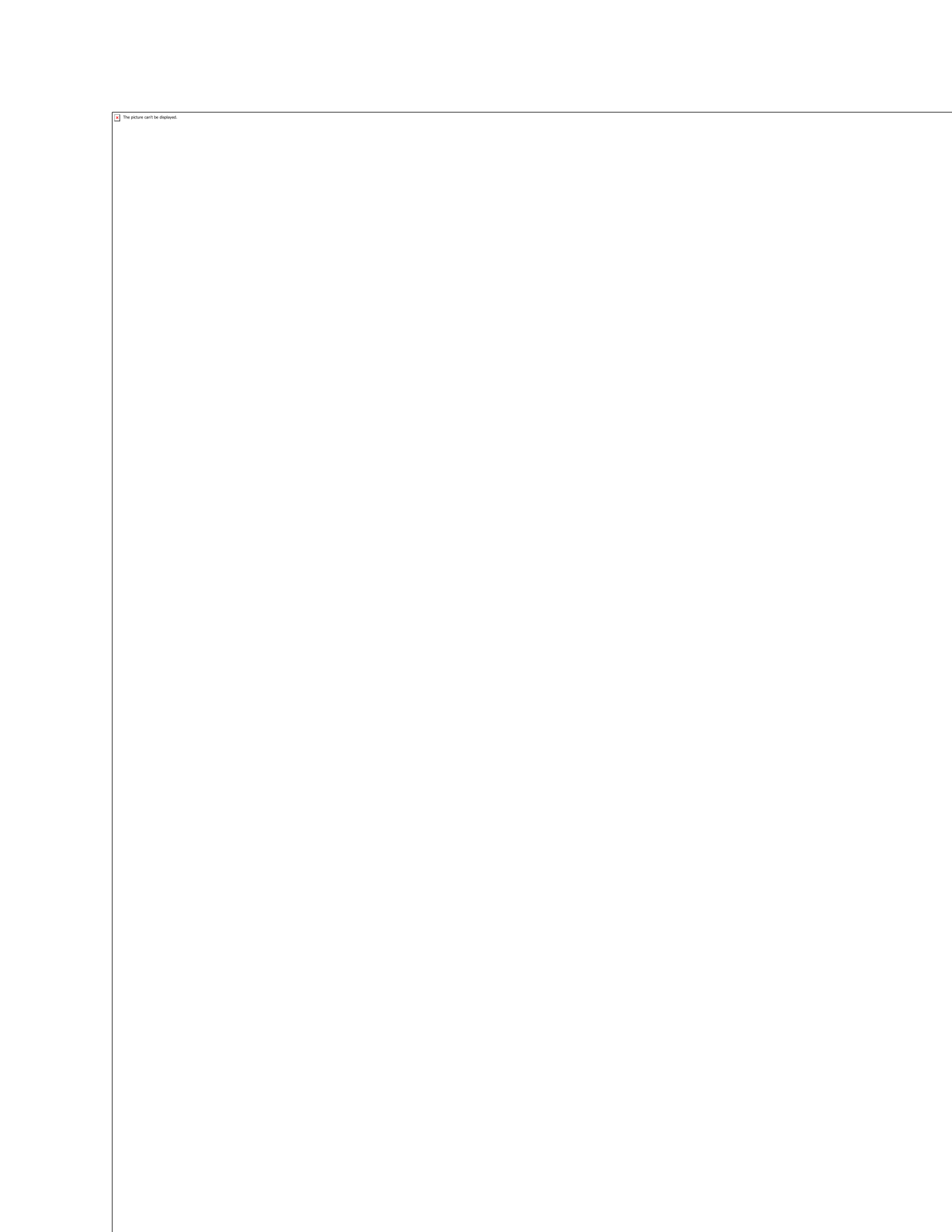
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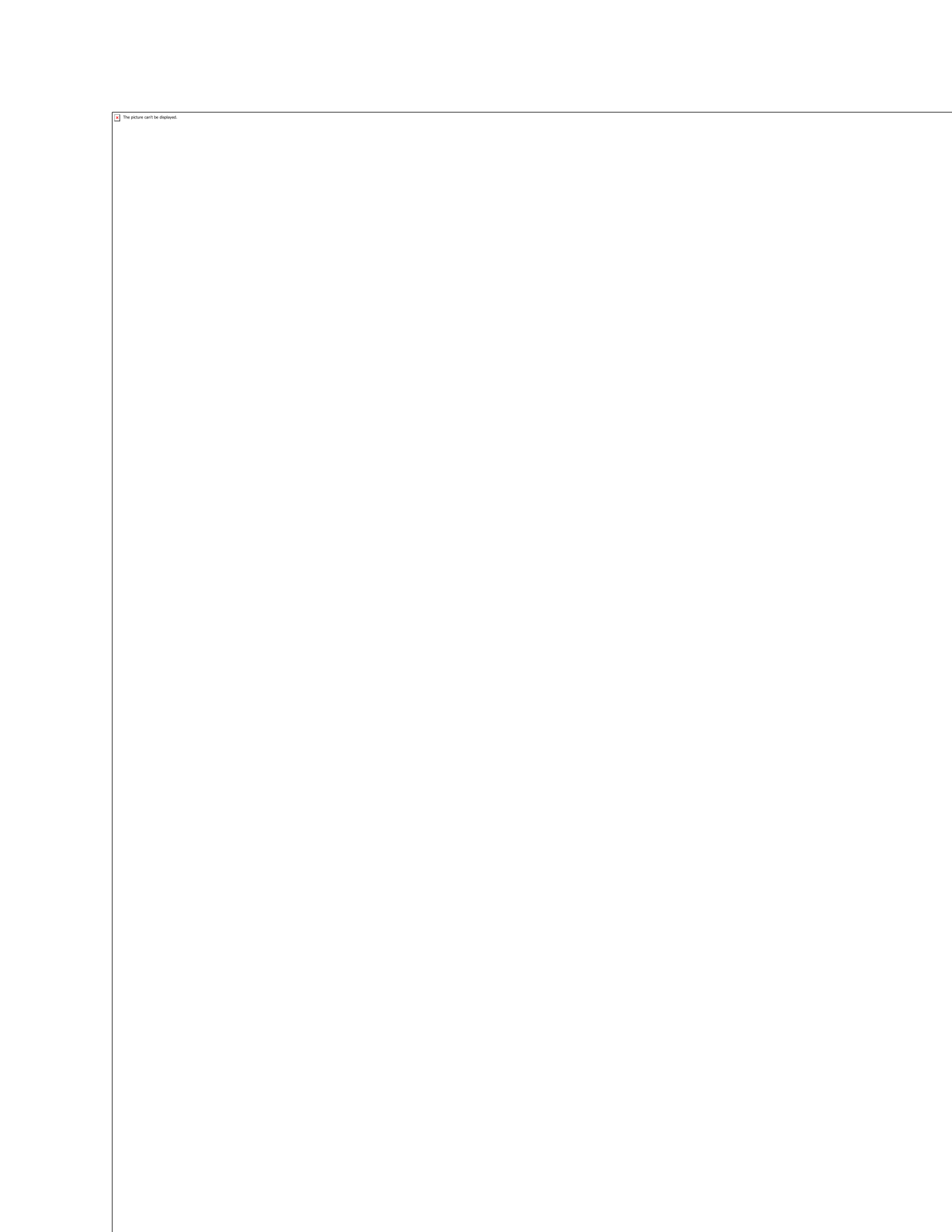
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Poster keywords

prehabilitation, frailty, telehealth, nutrition, exercise

36

Waiting Well

Neil O'Brien[1], Edward Kunonga[1], Marie Irones[1], James Prentis[2], Gerry Danjoux[3], Angela Farrell[4]
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Competition Track

iPOETTS abstract competition

Abstract

Introduction

The impacts of the Covid-19 pandemic have been disproportionately distributed across the population, with people from more deprived communities suffering greater negative impacts, a situation reflected in those awaiting surgery. The Waiting Well programme is a regional (North-East/North Cumbria: NENC) Integrated Care Board (ICB) led initiative established to support the preoperative physical and mental health of patients awaiting priority 4 elective surgery, who are identified as being at highest risk.

Method

In July 2021 representatives from primary and secondary care, public health and the voluntary sector collaborated to create the framework for programme delivery across 5 regional areas in NENC. The primary focus is to support preoperative patients at greatest need based on social deprivation, health inequalities, adverse lifestyle behaviours and co-morbid disease. The programme is underpinned by a smart 'digital dashboard' which enables identification of patients, based on risk factor profile, at the level of any GP practice across the region. The 5 areas have created models for 'local' programme delivery with funding to develop infrastructure and services made available.

The model has 4 component parts:

- Data driven risk stratification to identify target cohort
- Assertive outreach to contact patients
- Holistic personal assessment
- Tiered offer of support driven by patient identified needs

Results

All 5 areas are now seeing patients. The month-on-month approaches to patients and programme uptake are summarised in the table below. In 3 months, 1025 patients have been contacted. 492 accepted an offer of help. Of those who accepted 205 were from deciles 1 & 2, and this is starting to increase month on month.

	12/22	01/23	02/23
Contacted	309	423	293
% accepted	120 (39%)	190 (45%)	182 (62%)
Those contacted IMD 1&2	184	195	191
% accepted IMD 1&2	52 (28%)	76 (39%)	77 (40%)

Conclusion

We describe an innovative system-level approach, delivered across health, social and voluntary care sectors, to support those most at need before surgery. We have identified wide-ranging support needs required by patients from exercise/lifestyle to financial and emotional. Early patient feedback has been excellent, and we are greatly encouraged by the increasing levels of uptake of the programme which is consistent across the region.

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Poster keywords

Prehabilitation, System_wide, Collaboration, Population_health_management, Scale

37

Listen! The patient is speaking; Focus groups to reveal patients' experiences and opinions of prehabilitation to develop a remote prehabilitation intervention for patients awaiting liver transplantation.

Suzanne Lester[1], Dr Johnny Cash[2], Dr Bronwen Connolly[3], Prof Judy Bradley[4]
[1]Queen's University, Belfast, United Kingdom. [2]Belfast Health and social care trust, Belfast, United Kingdom. [3]Wellcome Wolfson Institute Experimental Medicine, Queen's University, Belfast, United Kingdom. [4]Clinical Research Facility Wellcome Wolfson Institute Experimental Medicine, Queen's University, Belfast, United Kingdom

Competition Track

iPOETTS abstract competition

Abstract

Introduction:

Morbidity associated with Liver disease whilst on the transplant list is significant, despite this, few UK patients have access to any form of prehabilitation. The main objectives of the focus groups were to (1) explore patients' experiences and opinions awaiting liver transplantation, (2) identify facilitators and barriers to prehabilitation and (3) understand views on structure, content, and delivery of prehabilitation.

Methods:

A purposive sample identified by clinicians from the Belfast transplant unit were recruited remotely by the PhD Fellow. Participants included were aged 16-80; awaiting liver transplantation or received liver transplantation in the last 5 years. Remote focus groups via MS TEAMS were audio recorded and transcribed. Two researchers independently analysed the transcripts applying Braun and Clarke's framework for thematic analysis. Themes were identified, discussed and agreed between the two researchers.

Results:

6 focus groups (5-6 participants each) were delivered in August 2022. Participant characteristics (n=23): 8 pre and 15 post-transplant; 17 male; mean male; mean age 60.7 years. 6 themes identified, (1) challenges awaiting transplant "I have lost everything, I couldn't even open a bottle of juice"; (2) current self-management strategies "I use steps daily"; (3) requests for pre-transplant support "psychological support is required"; (4) considerations for prehab content and delivery "if there was more audio communication people could listen to it when needed"; (5) considerations for prehab participation "family members need to be involved"; 6) information pre-transplant on post-transplant journey "I never had post-transplant walking advice or know what I should avoid".

Conclusions:

Focus group data will be used in the development of structure, content, and platform delivery platform delivery of a liver transplantation prehabilitation intervention.

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Poster keywords

Liver Transplantation , Prehabilitation , Focus Groups , Remote

38

Index of Multiple Deprivation (IMD) and adherence to a multimodal covid priority clinical study

Lesley Hawkins[1,2,3], Samantha Leggett[1,2], Anna Campbell[4], Chloe Grimmett[5], Malcolm West[1,6], June Davis[7], Denny Levett[1,2,3], Mike Grocott[1,2,3], Sandy Jack[1,2,3], The SafeFit Trial Steering Group[8]
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Competition Track

iPOETTS abstract competition

Abstract

Introduction:

Index of Multiple Deprivation (IMD) is a national measure of deprivation. Data is collected from Census and government databases, combined from seven domains and sub-domains of deprivation to create the IMD. Lower-layer Super Output Areas (LSOA) are ranked and scored to produce the 1-10 ranking1. For this abstract we will be using IMD Decile 1,2,3 and 10 (1=most deprived and 10=least deprived). There is no cut off point of deprivation, although the general rule is 1-31. During the Covid-19 pandemic the SafeFit Trial (NCT04425616) consented 1100 participants. This was a heterogeneous, self-referral trial delivering interventions aligned with three pillars of Prehabilitation (exercise, nutrition, and psychological support) and accessible to anyone in the UK ≥ 18 years living with/beyond cancer.

Methods:

Between 2020-2022 SafeFit participants demographic data including postcodes were collected at baseline, allowing us to match and analyse IMD Deciles against on-study adherence (OSA). 892/907 participants residing in England (only) were matched to live postcodes producing their IMD Decile ranking (1-10) from the indices of deprivation (IoD) 2019 database2. OSA was measured and recorded from participants Session Completion Logs (SCL). Only SCL fully analysed by 21/04/2023 were included in the final analysis.

Results:

IoD matched the postcodes of 150 (17%) IMD Decile 10 (least deprived) participants and 114 (13%) Deciles 1-3 (most deprived) participants. Adherence data were available for 175 out of 264 participants, (mean age 52.43yrs) with 153 identifying as female, 20 as male, 2 unknown (Table 1). Participants in Deciles 1-3 (n=76) had a higher OSA average of 93.9% (+/-13.8) than participants residing in Decile 10 (n=99) who had an average OSA of 89.5% (+/- 14.4). Participants in Deciles 1-3 also attended a higher number of sessions (averaged) per participant (18.7 vs 17.6) and a higher number identified as male (14.47% vs 9.09%) A visual comparison of OSA is detailed in Figure 1.

Conclusion:

From initial data analysis early indications are indicative that participants living in the most deprived areas had a higher, albeit non-significant on-study adherence (p=0.423) and higher attendance rate than participants living in least deprived areas. However, we acknowledge that the sample size is small and uneven between the two groups. Index of Multiple Deprivation should be assessed in further settings for trends and variations to uptake and adherence.

References:

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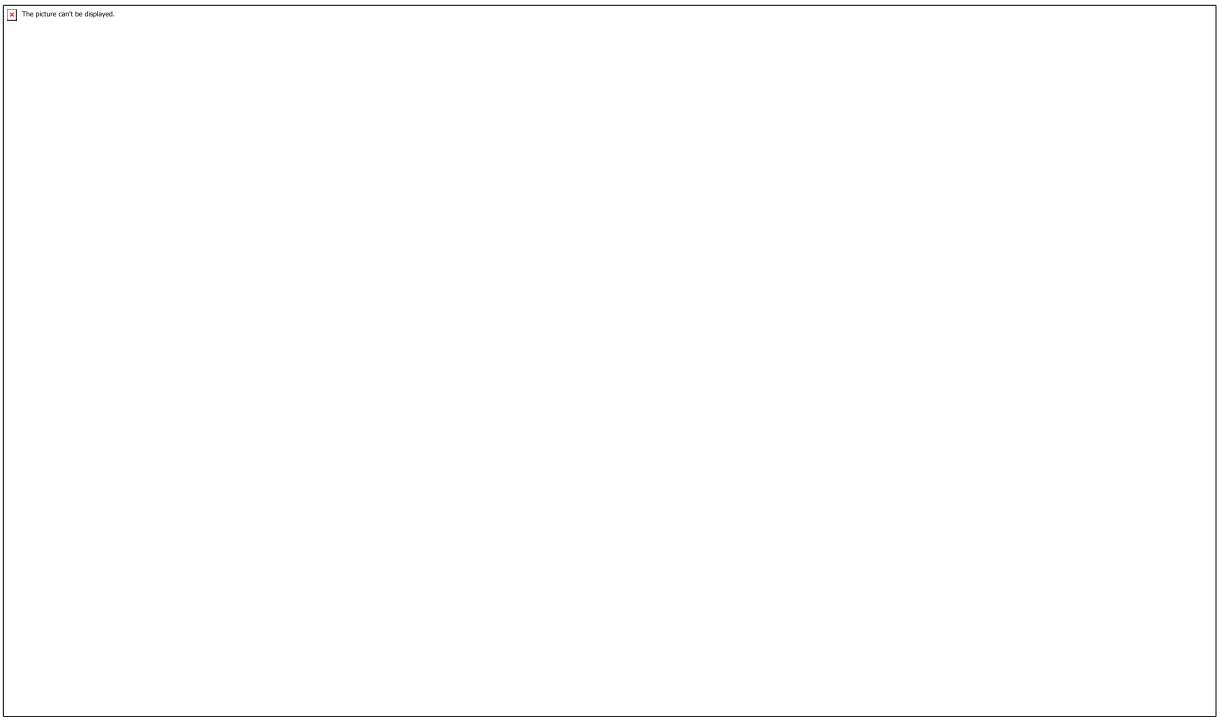

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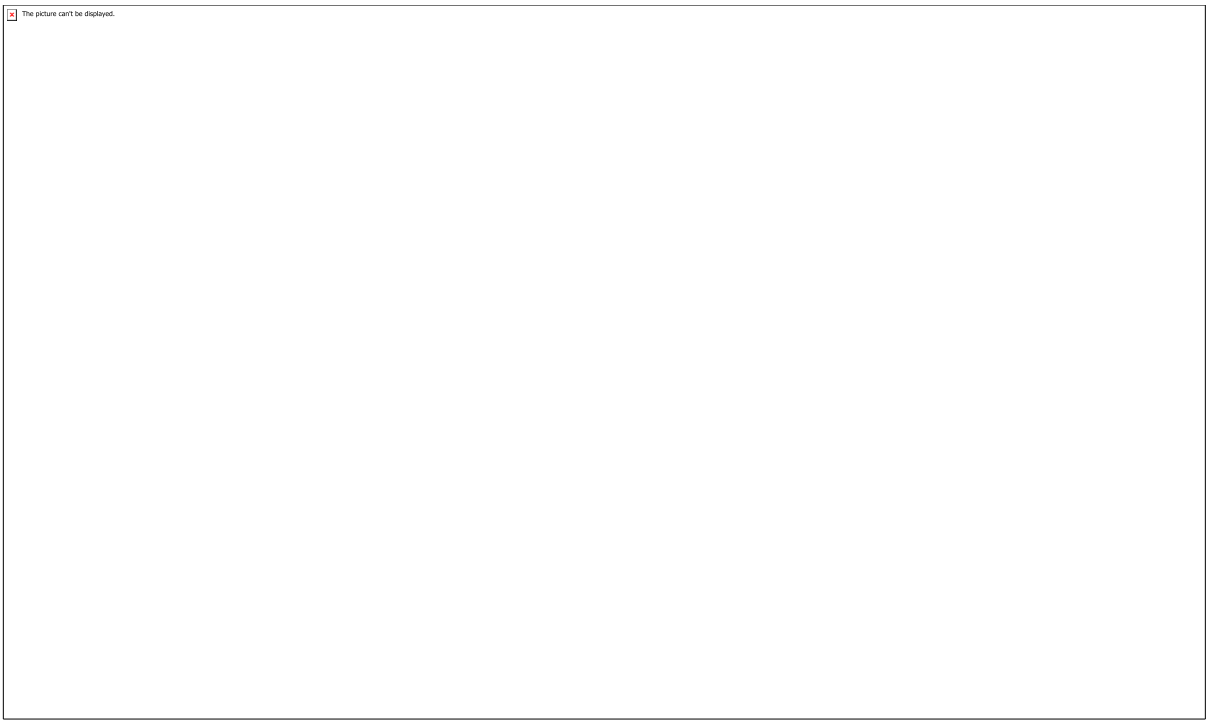

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Poster keywords

Virtual, Cancer, Covid, Prehab, Adherence

39

Reporting quality of randomized controlled trials in prehabilitation: A scoping review.

Dominique Engel[1,2], Giuseppe D. Testa[3,1], Francesco Carli[1], Daniel I. McIsaac[4,5,6], Daniel Santa Mina[7,8,9], Gabriele Baldini[1,10], Celena Scheede-Bergdahl[11], Stéphanie Chevallier[12,13], Linda Edgar[14], Christian M. Beilstein[2], Markus Huber[2], Julio F. Fiore Jr[15], Chelsia Gillis[12,1,15]
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Competition Track

iPOETTS abstract competition

Abstract

Objectives: Poor quality of reporting in prehabilitation trials can hamper appropriate study quality assessment and interpretation of findings.[1] Improving quality of prehabilitation research and the certainty of evidence for prehabilitation requires the conduct of methodologically robust clinical trials that are reported clearly and to expected standards.[2] The main objective of this scoping review was to provide an overview of the quality of reporting in randomized trials of prehabilitation and to generate recommendations.

Methods: The initial search focused on “prehabilitation” labelled RCTs. Studies meeting the following definition were included: A unimodal intervention of exercise, nutrition or cognitive/psychological training, or a combination thereof, undertaken for seven or more days before surgery to optimize a patient's preoperative condition. The final search was conducted on March 25, 2022, using MEDLINE, EMBASE, PsychInfo, Web of Science, CINHAL, and Cochrane. Identified studies were compared to available reporting guidelines: CONSORT 2010, TIDieR, CERT, Modified-CERT, PRESENT 2020 and CONSORT-SPI 2018. An agreement ratio (AR) was defined to evaluate how many times applicable guideline items were correctly reported. Quantitative data were analyzed using descriptive statistics:

frequencies, range (min – max), mean and standard deviation (SD) or median and interquartile range [IQR].

Results: The search identified 935 unique articles, and 70 articles published from 1994 to 2022 met inclusion criteria. The mean (SD) agreement ratio for all studies to all guidelines was 57% (20.9) with a range of 40 to 78%. Specific mean (SD) agreement and ranges were as follows: CONSORT-2010: 71% (16.3), 19-94%; TIDieR: 62% (17.7), 23 – 100%; CERT: 54% (16.6), 19 - 88%; Modified-CERT: 40% (17.8); 7 – 80%, PRESENT-2020: 78% (8.9), 56 – 85%; CONSORT-SPI 2018: 47% (22.1), 7 – 77%.

Conclusion: Overall reporting of research methods and interventions of prehabilitation trials is low. We suggest that reporting might improve with the development of a reporting checklist focused on prehabilitation intervention components and outcomes. Limitations: Some of the reporting guideline items were ambiguous, making it difficult to discern whether an item was met or not. We mitigated this limitation by having 2 independent reviewers.

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Poster keywords

Prehabilitation, Quality of Reporting, Reporting guidelines, Scoping review, ERAS

40

Outcomes of a Perioperative High Risk Shared Decision Making Clinic

Imogen Fecher-Jones[1,2], Alice Aarvold[1], Charlotte Allan[1], Gillian Ansell[1], Stephanie Berry[1], Carin Dear[1], Kathryn Dawson[1], Mark Edwards[1], Janette Penfold[1], Mai Wakatsuki[1], Denny Levett[1,2]
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Competition Track

iPOETTS abstract competition

Abstract

Introduction

Ten million people in the UK undergo major surgery every year. Postoperative mortality is the 3rd leading cause of death worldwide (1), and the known patient deconditioning following the COVID19 pandemic, risk counselling and optimisation prior to surgery has never been more important.

In 2018 we launched a high-risk service, offering the opportunity to discuss in-depth the risks of surgery and enable shared decision making (SDM) to take place. We present the outcomes of the last four years.

Methods

Patients are identified by the surgeon or following a Cardiopulmonary exercise test. 1 hour long consultations are undertaken with the patient and their family. Risk is discussed together with expectations of recovery, and quality of life. Medical optimisation and prehabilitation goals are also discussed. Patients then have time to reflect and make an informed decision regarding surgery. To evaluate the service, patients are asked to complete a number of questionnaires pre and post consultation including EQ5D, SDMQ9, Decisional Conflict Scale and Decision Regret.

Results

469 patients accessed the High-Risk SDM clinic from May 2018 – November 2022. 56% Male, 44% female, age range 24-94yrs, (mean 71yrs). Patients were from a range of specialties including; Colorectal (32%), Upper GI (21%), HPB (16)% and orthopaedics (17%).

The outcomes of the consultation are seen in Chart 1. 40% (n=187) of patients chose to go ahead with the surgery as planned, 15% (n=70) delayed their surgery for a period of optimisation, and 17% (n-79) decided not to go ahead with surgery.

The response rate to the SDMQ9 was 40% and identified that the majority of patients felt satisfied, involved in the SDM process and that decisions made were informed and based on their own values

(Decisional Conflict Scale). At 6 months 47% (n=56) completed a 'Decisional Regret' questionnaire. This found that the majority of patients felt they had made the right decision with regard to preceding to surgery or not, and the majority would make the same choice again.

Conclusion

High Risk SDM clinic is well accepted by patients and helps them to make informed choices regarding whether or not to proceed to very high risk surgery. Greater numbers are required to understand the significance of Decisional Regret and to also review variance across different surgical specialties.

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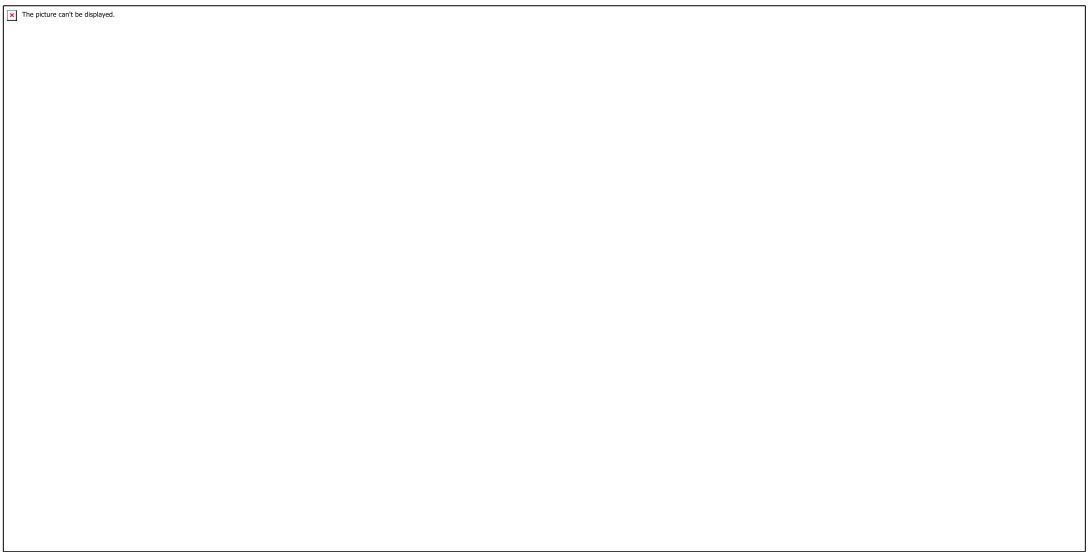

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Poster keywords

high-risk, shared decision making, patient choice

41

Specialist Prehabilitation Opens Door to Curative Major Colorectal Surgery

Sarah Driver, Paige Christopher, Tess Hughes, Steve O'Meara, Sharon Bassett, Jake Fallon, Neil Agnew
BCUHB, Wrexham, United Kingdom

Competition Track

iPOETTS abstract competition

Abstract

Introduction:

Specialist prehabilitation service optimised a 73 year old man diagnosed with colonic carcinoma, deemed not fit for major colorectal surgery. Past medical history included 2x MI, coronary artery stent, aortic valve replacement, cardiac pacemaker, hypertension, CVA, TIA and severe bronchiectasis. Previous surgery (2020) resulted in post-operative pneumonia with sepsis induced multi-organ failure and a prolonged stay on ICU.

Initial assessment highlighted a history of angina 2x pcm, exercise tolerance: 3m on the flat, climbing 2-3 steps, limited by severe breathlessness. CPET: very poor functional capacity with a peak V02 of 10.9ml/kg/min and VE/VC02 of 71.

Methods:

31 face-to-face sessions starting January 2023:

Physiotherapy/exercise: Inspiratory muscle training (IMT) – supervised sessions and home programme: 30 repetitions twice daily using a Powerbreathe medic plus, increasing resistance: 20cmH20 – 40cmH20.

Prescription: 1:1 strength and conditioning programme (marching for 3 minutes, ham curls 10x3, mini squats x10, wall press x10, SLR x5sec x10 L and R, Heel raises x10), tailored progressive HIIT programme (static bike). Gradual progressive overload programme used, Borg scale level 4-10 depending on session ability. Intervals of 30:60 (20 mins total), workout:recovery, levels 4:9, with 5-10 minute warm up/cool down. Target HR: 109-117bpm (70-85% of max HR).

Dietetics: PG-SGA (score: 7) highlighted recent weight loss and dietary concerns. Optimisation included: healthier diet first approach with nutritional supplements, hydration/stoma output support and

education (for both patient and son) to improve nutritional status, increase protein intake and maintain weight. Plan adapted weekly following review (weight / handgrip).

Psychology/OT: Solution Focused Therapy techniques and group wellbeing sessions enabled increased independence, confidence and social activity. Feeling a lack of control, he was supported to recognise and develop his own resources. Home assessment completed for adaptive aids to support fatigue management.

Results:

Over 12 weeks (31 sessions), results demonstrated dramatic development from a very low fitness level, particularly the improvement in V02/WR slope, indicating increased LV function.

With mood and engagement improved, patient became increasingly engaged and self-motivated. CFS reduced (4 to 3), weight gained, now able to walk to the shops and plans to maintain new lifestyle.

Survived subtotal colectomy (April 2023), 1x night HDU. 1x postoperative complication: ileus. Total LOS: 9 days.

Conclusion:

Specialist multimodal prehab was successful in dramatically improving low functional capacity to a level suitable to undertake major colorectal surgery. Patient attended increased number of sessions, as was required to attain sufficient fitness to undertake major colorectal surgery.

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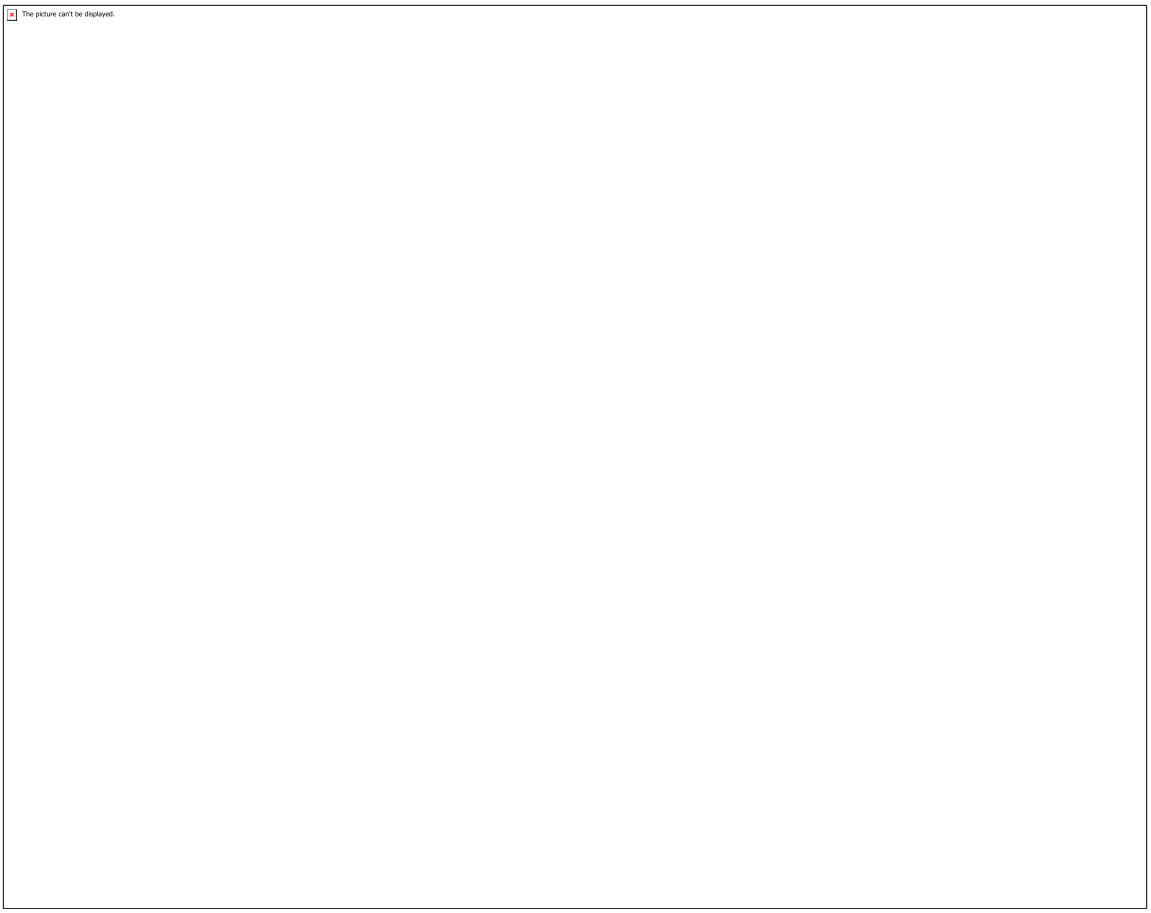

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Poster keywords

Prehabilitation, Multimodal , Surgery, Unfit , Optimise

42

Identifying barriers to regional anaesthesia education for trainers

Xiaoxi Zhang[1,2], Ross Vanstone[3], Simeon West[4], Lloyd Turbitt[5], Eoin Harty[1]
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Competition Track

EBPOM abstract competition

Abstract

Introduction

Regional anaesthesia (RA) plays an important role in perioperative care, providing superior analgesia, reduced postoperative complications, shorter recovery time, and earlier hospital discharge [1]. There has been emphasis on RA in recent years, with new prominence in the Royal College of Anaesthetists (RCoA) 2021 curriculum [2] and a national focus on a small number of high value "Plan A" blocks [3]. Recent efforts have been made to improve RA education, but many trainers do not feel confident in performing or teaching Plan A blocks [4]. This not only restricts patients' access to analgesia but also limits learning opportunities for trainees. The aim of our study is to identify barriers to regional anaesthesia education for consultants and specialists, which may inform strategies to drive wider competence, enhance training experience, and ultimately improve perioperative care.

Methods

A nationwide survey was conducted among anaesthetic consultants and specialists to explore barriers to regional anaesthesia education for trainers. The survey was distributed via college tutors and social media.

Results

A total of 369 consultants and specialists participated in the survey, with representation from all NHS deaneries. Provision of RA teaching varied extensively. The top barriers identified include cost of courses (n= 114), time constraints (n=102), lack of opportunities to maintain skills (n=96), lack of local learning resources (n=87), and anxiety that blocks reduce efficiency (n=83). Lack of support from surgical colleagues, equipment and departmental support were also contributing factors.

Conclusion

Overcoming barriers to RA education is essential to improving the availability and consistent delivery of RA to patients, and delivering the RA component of the RCoA curriculum. Our study indicates that additional funding, dedicated time for trainers to learn nerve blocks, and local opportunities to promote and teach RA techniques may address some of the barriers identified. Further research using qualitative methods may help to better understand the nuance related to challenges in RA education and identify potential solutions.

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Poster keywords

Regional anaesthesia, Medical education, Continuing professional development, Consultants, Specialists

43

Factors affecting patient uptake and engagement with a multibehavioural digital prehabilitation intervention.

Nathan Griffiths[1], Rebecca Livingston[1,2], James Durrand[1,3], Dean Wilkinson[1], Kerry Colling[1], Nicola Powley[1], Garry Tew[4], Alasdair O'Doherty[3], David Yates[4,5], Claire Brookes[4], Gerard Danjoux[1,5], Leah Avery[2]
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Competition Track

EBPOM abstract competition

Abstract

Introduction

Digital prehabilitation programmes can engage patients unsuited to face- to-face support. An indepth understanding of behavioural needs in terms of Capability, Opportunity and Motivation facilitates design of programmes likely to achieve better uptake, adherence, and effect preoperative change(1). We undertook a mixed-method systematic development process to co-design a digital multibehavioural prehabiitation programme (iPREPWELL) using the Behaviour Change Wheel (BCW)(2).

Method

Following full ethical approval, a purposive sample of perioperative patients were recruited at 2 NHS centres. Participants completed Capabilities, Opportunities, Motivations, Behaviours (COM-B) questionnaires informing a semi-structured interview to identify behavioural needs for the programme. This encompassed: Physical activity, smoking, alcohol, nutrition, sleep, and psychological wellbeing. Data were thematically analysed using the theoretical domains framework (TDF).

Findings informed a series of co-design workshops concerning:

- Information delivery
- Goal setting and progress tracking
- Feedback mechanisms linked to the behaviour change taxonomy.

Result

24 participants were recruited reflecting contemporary UK major surgical cohorts.

Key capability themes included:

- Emphasis of the benefits of preoperative behaviour change, and how to attain them.
- Content should be presented audiovisually by perioperative health care professionals (HCPs) to enhance credibility.

Opportunity themes emerged around:

- Social support elements including HCP-patient interaction and peer-support mechanisms.

Regarding motivation:

- Participants underling the need to retain autonomy over the programme with continual feedback on progress.
- Patients should be able to modify their own goals to assist with autonomy.
- The need to retain a sense of compassion and a non-judgemental approach was emphasised.

Conclusion

We undertook a novel theory and evidence informed co-design process and original application of the BCW in the prehabilitation context. The data collected have been incorporated with the existing clinical evidence-base into the iPREPWELL programme design.

The recent covid-19 pandemic has sharply focussed the prior need for robustly developed digital prehabilitation interventions. iPREPWELL is approaching feasibility testing at 2 centres in line with the MRC framework.

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Poster keywords

Prehab, Digital, Behaviour, Motivation, iprepwell

44

Prehabilitation improves preoperative aerobic fitness in patients scheduled for major intra-abdominal cancer surgery.

Daisy Jarvis[1,2], Jack Colbert[1,2], Amy Dewar[1,2], Nicholas Tetlow[1,2], John Whittle[1,2], Robert Stephens[1,2], The Prehabilitation Team at University College London Hospitals NHS Foundation Trust[1]
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Competition Track

EBPOM abstract competition

Abstract

Introduction

Reduced aerobic fitness, assessed by cardiopulmonary exercise testing (CPET), is independently associated with worse postoperative outcomes[1]. Neo-adjuvant chemotherapy (NAC) adversely affects fitness before surgery, but prehabilitation has been shown to mitigate this by improving aerobic fitness[2]. We hypothesised that 4–6-week prehabilitation programme will improve aerobic fitness in patients awaiting major cancer surgery.

Methods

We retrospectively reviewed CPET data from patients who enrolled on UCLH's prehabilitation programme between December 2021 and October 2022 and underwent a CPET at baseline and post-prehabilitation. All CPETs were performed in accordance with POETTS and ATS/ACCP guidelines. Prehabilitation was completed remotely, consisting of one-to-one physiotherapy, online group exercise classes, an exercise booklet, and nutritional support. Normality was assessed using Shapiro-Wilk test. Data were presented as mean (±SD), median (IQR) or frequency (%). Wilcoxon and paired samples t-tests were performed, with significance set at $p<0.05$.

Results

We identified 10 patients who underwent CPET before and after prehabilitation. Of these 8 (80%) were undergoing NAC during prehabilitation. Demographic data are presented in Table 1.

Comparing baseline to post-prehabilitation (Figure 1) there was a significant difference in A) median Anaerobic Threshold (AT) [7.5 (6.8–9.0) vs 9.0 (8.0–9.3) ml/kg/min]; p=0.047.

There was no significant difference in B) mean peak oxygen uptake (VO_{2Peak}) [12.0 (±2.7) vs 13.0 (±2.7) ml/kg/min; p=0.399], C) ventilatory equivalence for CO2 at AT (V_E/VCO_2) [38 (±5.1) vs 37 (±4.5); p=0.740] and D) median peak power output (PPO) [0.81 (0.63–0.94) vs 0.81 (0.76–1.05) W/kg; p=0.375].

Conclusion

Baseline CPET demonstrated aerobic deconditioning, when compared to perioperative risk cut offs. AT<11 ml/kg/min, VO_{2Peak} <15 ml/kg/min, V_E/VCO_2 at the AT > 34. Our prehabilitation programme improved preoperative aerobic fitness in patients scheduled for major intra-abdominal cancer surgery. VO_{2Peak}, V_E/VCO_2 at the AT and PPO were not significantly different after prehabilitation, however, we would typically expect these variables to have decreased considering 8/10 of patients were undergoing NAC alongside their prehabilitation. These data support the continued implementation of our local prehabilitation service to help improve aerobic fitness and mitigate the adverse effects of NAC within the perioperative pathway.

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Poster keywords

Prehabilitation, Cardiopulmonary exercise testing , Neo-adjuvant chemotherapy , Deconditioning , Anaerobic Threshold

45

Iron deficiency in orthopaedic patients: Improving efficiency in patients requiring elective lower limb arthroplasty

Ellen Stevens Thompson, Tom Salih, Samantha Warnakulasuriya
University College London Hospital, London, United Kingdom

Competition Track

EBPOM abstract competition

Abstract

Introduction

Iron deficiency anaemia (IDA) is common in joint arthroplasty patients and increases morbidity including transfusion risk (1). Pre-operative intravenous (IV) iron may reduce transfusions, but questions remain regarding patient benefits (2).

This Quality Improvement Project (QIP) engaged stakeholders, using 2021 audit data to develop a speciality specific guideline for anaemia. A lowered Haemoglobin (Hb) threshold for IV iron of 110g/l from 130g/l was decided, targeting higher risk patients whilst minimising delays. The guideline prompts clinicians to notify patients and GPs where Hb is 110-130g/l. We re-audited, aiming to evaluate patient outcomes and the impact of our improvement efforts.

Methods

The QIP used a plan-do-study-act approach. Following the introduction of the guideline, patients undergoing elective lower limb joint arthroplasty over two weeks in 2023 were identified. Data was gathered from the electronic health record (EHR) and compared to 2021. Microsoft Excel was used for analysis.

Results

Data is presented in Table 1. 35% of patients had Hb <130g/l in 2023, and 31% in 2021. In 2023, proportionately fewer were investigated with iron studies, but all patients with Hb <110 g/l and IDA received pre-operative IV iron. One patient had surgery delayed allowing for effect of iron. No patients with Hb 110-130 g/l received IV iron in 2023, compared with 1 in 2021. One patient with Hb <110g/l did not receive IV iron in 2021. There were no blood transfusions in 2023, but 2 patients were transfused in

2021. Of IDA patients with Hb 110-130g/l in 2023, only 50% of patients and GPs were contacted for further investigation.

Conclusion

Our data suggests that a Hb threshold of 110g/l for IV iron in lower limb arthroplasty is appropriate, as transfusion rates have not increased. Reduced iron study investigations highlight the need for vigilance within established pathways. We have demonstrated a lack of communication between secondary and primary care regarding management of anaemic patients, which is being addressed by an intervention of proforma templates within the EHR.

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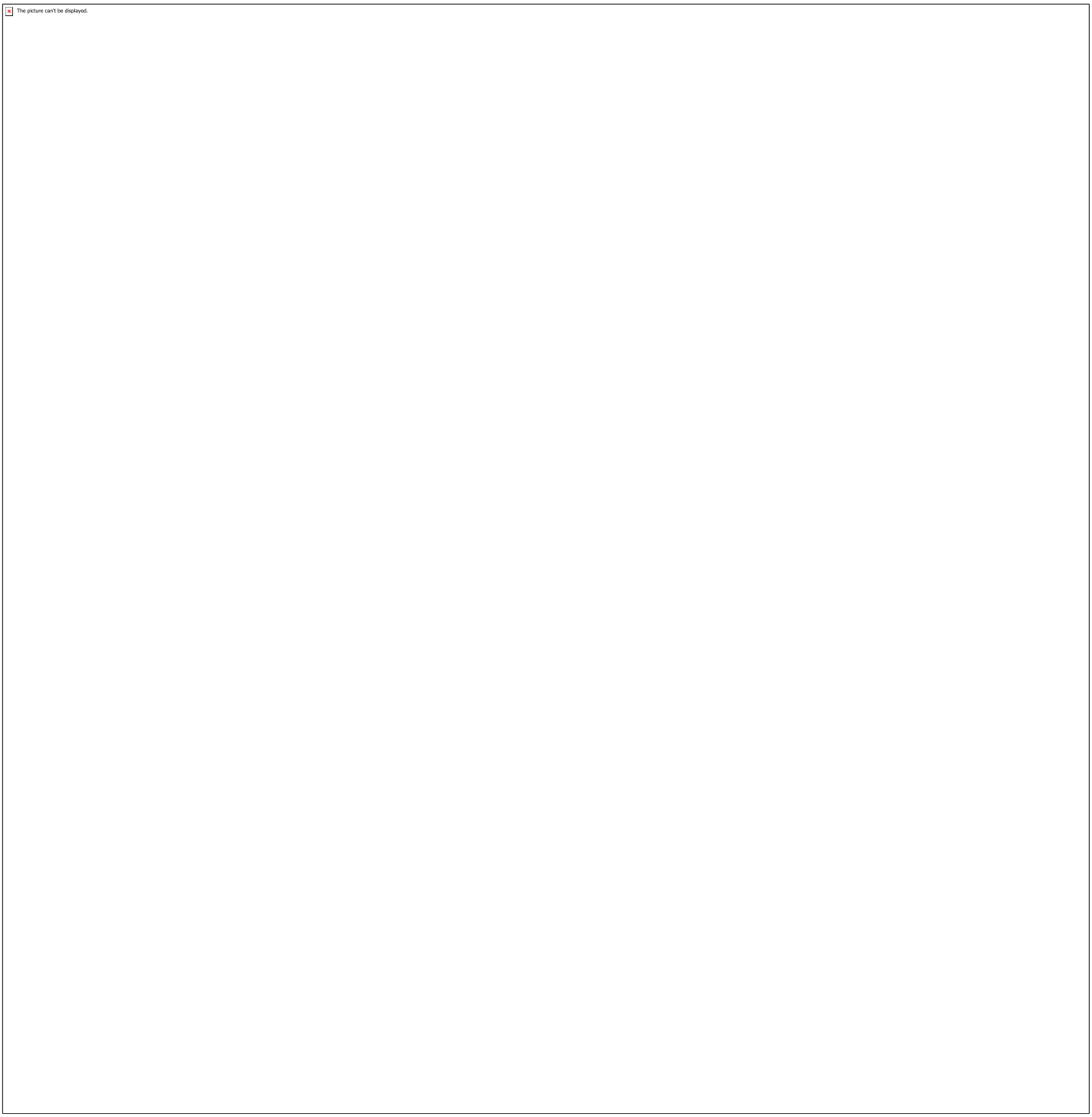

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Poster keywords

Iron Deficiency Anaemia, Intravenous Iron, Orthopaedics, Joint Replacement, Quality Improvement

46

Effect of Multimodal Prehabilitation on enhancing Functional Capacity & reducing Length of Stay (LOS) : Retrospective analysis of outcomes for sequential patients during the initial 18 months of operation of a Fit-4-Surgery Service.

Hilmy Ismail[1,2], Emma Tyson[1,2], Jess Crowe[1,2], Emily Traer[1,2], Tom Poulton[1], Mathew Ha[1], Jacob McCormick[1], Glen Guerra[1], Cori Behrenbruch[1], Janelle Loeliger[1,2], Maria Ftanou[1,2], Linda Denehy[1,2], Bernhard Riedel[1,2]
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Competition Track

EBPOM abstract competition

Abstract

Aim: To describe the evolution and impact of a multi-disciplinary prehabilitation service in the setting of major cancer surgery.

Methods: This is a retrospective study of a structured, multimodal, multidisciplinary prehabilitation service at a single quaternary cancer centre. The study covers the first 18 months of the service's operation and involves medical, nursing, allied health, clinical psychology, and administrative resources. The intervention is described using a narrative and quantitative approach using inferential statistics (t-tests), and the RE-AIM framework is used to evaluate the service implementation and its impact on patient outcomes.

Results: Compared to standard care, patients referred to the Fit-4-Surgery (F4S) service had a higher proportion of American Society of Anaesthesiologists Physical Class (ASA) 3 or 4 (60% vs. 55.3%). The majority of patients scheduled for esophagectomy (76.9%), total pelvic exenteration (89.3%), or CRS-HIPEC (51.9%) were referred to the service, but fewer were referred for other upper or lower gastrointestinal cancer surgeries. Patients referred to the F4S service who had serial assessments achieved an increase in physical function (Peak VO2 1.3 (0.4-2.1) mL/kg/min ($p < 0.01$), AT VO2 0.7 (0-1.5) mL/kg/min ($p < 0.06$), 6 MWT 43 m (23-63.7) ($p < 0.01$) and Sit-to-Stands 2.4 (1.1-3.6) ($p = 0.0055$). Compared to patients receiving standard care, patients undergoing prehabilitation prior to oesophageal surgery and cytoreductive surgery may have a shorter hospital and intensive care unit stay.

Summary: The study shows that a structured, multimodal, multidisciplinary prehabilitation service at a cancer centre is safe, feasible, and efficacious. The service was introduced due to clinical need and evolving evidence and was well-received by patients, with high levels of patient satisfaction, reach, implementation, and adoption.

Conclusion: These data provide further evidence that, in keeping with other centres around the world, prehabilitation is scalable and can be successfully implemented in clinical practice, although follow up data are difficult to measure in real world practice.

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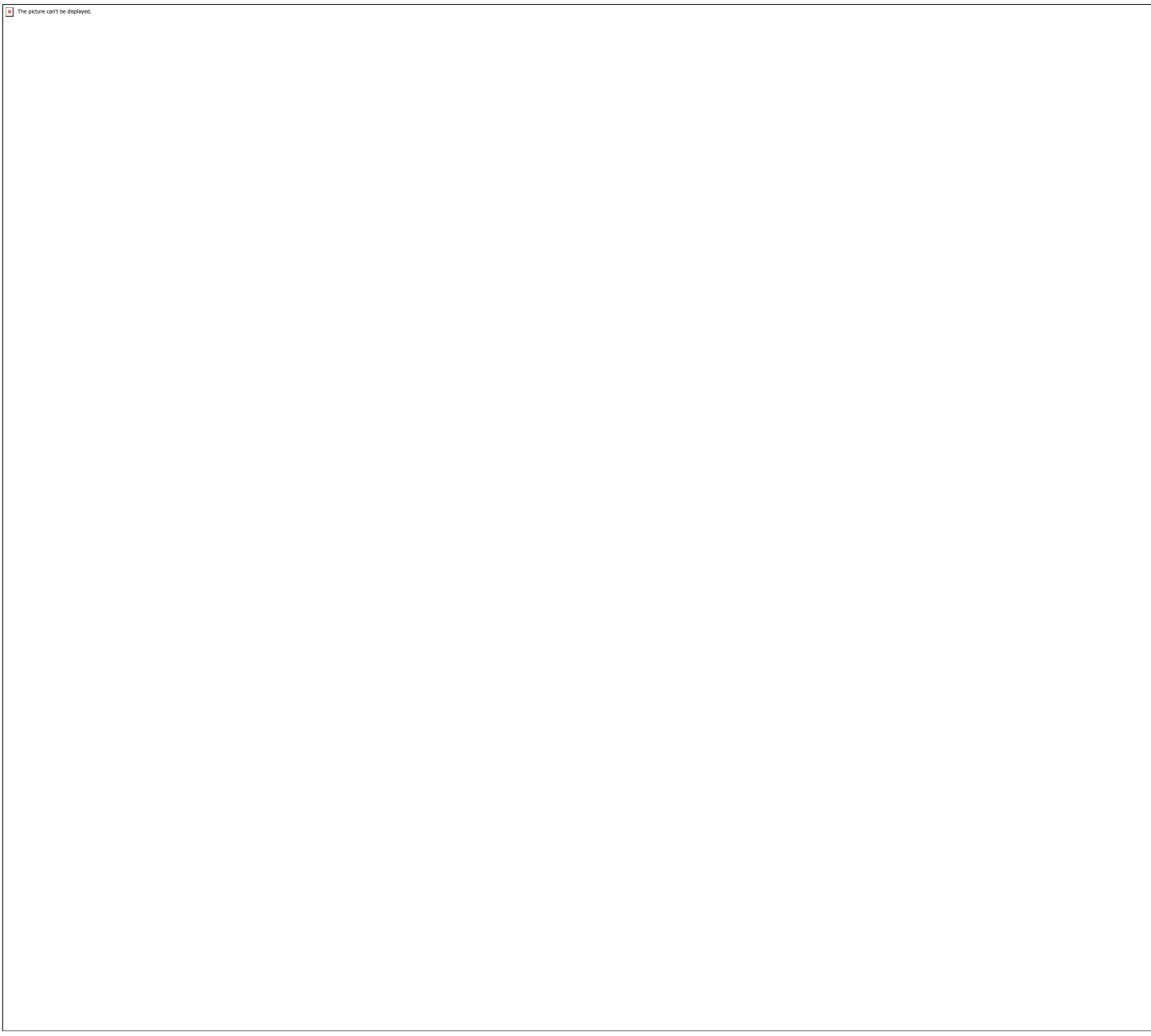

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Poster keywords

Perioperative Medicine, Prehabilitation, Cancer Surgery, Peter Mac Callum Cancer Centre, Multimodal Prehabilitation

47

Oxygen utilisation and anaerobic threshold measured using cardiopulmonary exercise testing in healthy pregnant women.

Emily Traer[1,2,3], Hilmy Ismail[1,4], Liz Leeton[2], Bernhard Riedel[1,4], Alicia Dennis[2]
[1]Peter MacCallum Cancer Centre, Melbourne, Australia. [2]The Royal Women's Hospital Melbourne, Parkville, Melbourne, Australia. [3]Department of Critical Care, University of Melbourne, Melbourne, Australia. [4]University of Melbourne, Melbourne, Australia

Competition Track

iPOETTS abstract competition

Abstract

Introduction

Hypertension in pregnancy (preeclampsia) may be related to an imbalance between maternal oxygen supply and fetal oxygen demand.[1] Assessment of oxygen utilisation (VO2) before and during pregnancy, and its relationship to haemodynamic changes during pregnancy may provide insights into the development of hypertension. Few studies have directly measured VO2max or anaerobic threshold (AT) using cardiopulmonary exercise testing (CPET) in pregnancy, and none explore this in the context of developing hypertension. This study aimed to determine the safety and feasibility of CPET in measuring submaximal VO2 and AT in pregnancy.

Method

After institutional approval (RWH HREC 15/23) and prospective clinical trial registration (ACTRN: 12615000964516), 92 nulliparous pregnant women, 14+0 – 27+6 weeks gestation, underwent stationary bicycle CPET to 85% predicted maximal (submaximal) heart rate (HR) calculated by the formula (220-age*0.85), or to exhaustion. Anaesthesiologists specialised in CPET conducted the tests including: Safety review; Pulmonary function tests; Resting HR; Systolic & diastolic blood pressure (SBP, DBP); Respiratory rate (RR); Oxygen saturation (SpO2); Forced expiratory volume in 1 second (FEV1); Forced vital capacity (FVC); Unloaded cycling (60-70 revolutions/min(RPM) without resistance, for 3 minutes; Ramped resistance (20Watts/minute) while sustaining 60-70RPM; Recovery (60-70 RPM) without resistance, for 5 minutes. AT was determined. VO2 was measured at rest, AT, & submaximal HR. Fetal HR was measured before and after the test.

Results

Mean (SD) age, gestation & body mass indexes were 33 (3.1) years, 23 (1.9) weeks and 25 (2.7) kg/m2 respectively. Mean (SD) baseline maternal data were: SBP 112 (9.6) mmHg, DBP 65 (7.1) mmHg, RR 16 (2.8) breath/min, SpO2 100 (0.7) %, FEV1 3.2 (0.5) L/sec, FVC 3.8 (0.6) L, FEV1/FVC 83.6 (4.9) %. Mean (SD) VO2 mL/kg/min were: 4.1 (0.6) at rest (HR 84(13.9) BPM), 14.9 (3.4) at AT (HR 128 (12.2) BPM) &

22.0 (4.0) at submaximal HR (HR 158 (5.3) BPM, workload 125 (40.1) Watts). Mean (SD) fetal HR increased from resting 145 (6.4) to recovery 147 (6.3) BPM (mean difference 2.3 BPM, p=0.0010, 95% CI 0.95 to 3.60 BPM) and the difference was not clinically significant. There were no adverse events.

Discussion

CPET was safe and feasible. Submaximal VO2 and AT were determined in healthy pregnant women. Serial studies in pregnancy to determine the relationship between VO2, AT and hypertension in pregnancy, are required.

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Poster keywords

CPET, Cardiopulmonary Exercise Test, Pregnancy, Eclampsia, Obstetric

48

Perioperative outcome prediction using cardiopulmonary testing and machine learning

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Competition Track

EBPOM abstract competition

Abstract

Introduction

Approximately 16% of patients experience serious complications following surgery1 . Preoperative cardiopulmonary exercise testing (CPET) can identify patients at higher risk of complications2. Machine Learning (ML) algorithms have the potential to improve the predictive accuracy of CPET and develop useful clinical tools.

Objective

To design a machine learning-based clinical tool that combines patient data with CPET data to improve prediction of adverse outcomes after major surgery.

Methods

A single-centre database of 1190 patients who underwent a diverse range of surgery over 10 years at University College Hospitals NHS Trust, London, UK was analysed. Outcomes examined included a postoperative morbidity survey (POMS) and 1 year mortality. The Physiological and Operative Severity Score for the enumeration of Mortality and morbidity (P-POSSUM) was used as a comparator risk model. Using Python, data were processed for feature selection. Preliminary data analysis used linear regression and clustering to examine the relationship between features and outcomes. We then developed and evaluated four machine learning models - logistic regression (LR), support vector classifier (SVM), k-nearest neighbours classifier (KNN), and neural network (NN) - for their performance in a classification task.

Results

Population demographics is shown in Table 1. Cumulative POMS scores for patients on postoperative day 3 revealed a correlation between oxygen consumption at aerobic threshold and cumulative POMS score (r2: 0.68, p:0.001). Feature ranking analysis identified CPET-derived features as the most important. Machine learning models demonstrated superior performance to P-POSSUM in classifying patients at day 3 with the neural network performing the best (AUC: 0.944, Accuracy: 0.866, Sensitivity: 0.853, Specificity: 0.842, F1-Score: 0.862). For 1-year mortality (6%), all models outperformed P-POSSUM, with the SVM model performing the best (AUC: 0.817, Accuracy: 0.782, Sensitivity: 0.688, Specificity: 0.788, F1-Score: 0.294). All models had low sensitivity for mortality, indicating a high number of false positives.

Conclusions

Using preoperative CPET, we created a ML-based tool that could predict, with high discrimination, surgical patients at risk of morbidity. While predictions of mortality were superior to those made using P-POSSUM, the models were affected by low discrimination regarding true and false positives. To improve these results, we will investigate CPET time series with ML models and deep learning.

Acknowledgement and Ethics

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors. All authors collaborated in project creation, data collection, analysis and interpretation. Ethical approval was obtained with the codes IRAS 12/LO/0192 and 19/LO/1371.

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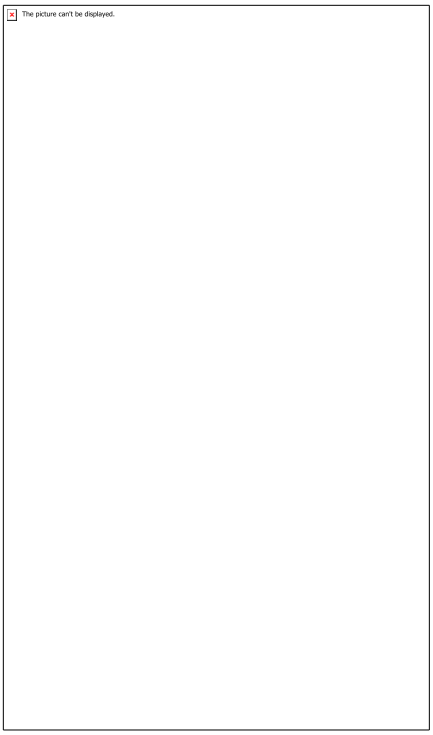

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Poster keywords

CPET, Machine Learning, Artificial Intelligence, Morbidity, Mortality

49

Perioperative and Consultative Medicine: A Quality Improvement Initiative Towards an Integrated General Medicine Perioperative Care Model at an Australian Metropolitan Teaching Hospital

David Buxton[1], Ashlea Low[1], Richard Coates[1], Ar Kar Aung[1,2]
[1]Alfred Health, Melbourne, Australia. [2]Monash University, Melbourne, Australia

Competition Track

EBPOM abstract competition

Abstract

Introduction

The Australia and New Zealand College of Anaesthetists (ANZCA) Perioperative Framework[1] calls for cross-disciplinary collaboration and shared decision making to deliver comprehensive perioperative care. At our quaternary hospital, perioperative care was historically provided by anaesthetics, geriatrics, and general medicine services, which often operated in parallel with limited collaboration. To achieve better outcomes through integrated care, a whole-of-hospital service redesign is needed[2]. A quality improvement (QI) project was thus undertaken, in consultation with stakeholders, to establish a new General Medicine Peri-Operative and Consultative Medicine (POCM) service in February 2023. Here, we present the results pre and post-implementation of this initiative.

Methods

All referrals to general medicine perioperative service were prospectively audited over 5 weeks between November to December 2022 to evaluate the baseline activity. Barriers to provision of integrated care and service gaps were identified, which informed the QI change ideas. These included: expansion to 7-days per week service, doubling of registrar numbers, physician involvement in high-risk pre-operative outpatient clinic, weekly high-risk multidisciplinary teams (MDT) meetings for shared decision making, active promotion of the service, development of shared referral systems, and joint education activities. A repeat audit over a 11-week period was undertaken post-implementation of the QI initiative.

Results

Of 130 patient encounters during the pre-implementation audit, the following issues were identified: limited engagement with elective admissions (10%), unbalanced weekly workload distribution (~50% referrals received on Mondays and Tuesdays), no outpatient assessments, and insufficient staffing to meet referral demand. These patterns supported our hypothesis that the previous model of care was 'reactive'.

Since the launch, POCM has received 321 inpatient referrals, and conducted 15 outpatient reviews over 11 weeks. Table 1 demonstrates referral characteristics during the two audit periods. Increase in the proportion of referrals for elective presentations (10.0% v 16.8% p=0.04) and post-operative reviews (27.7% v 38.9% p=0.024) were noted. Mean number of new referrals per week remained similar (26 v 27.5, p=0.34), however this workload was more evenly distributed across the week (p=0.001).

Ten patients were discussed in the first six high-risk MDT meetings, and changes in management were recommended in 70% of cases.

Conclusion

We evaluated the contribution of general medicine to perioperative care at our institution, and described the steps undertaken through a collaborative QI initiative in transitioning towards a more integrated service with other stakeholders. Future plans include implementing automated systems for inpatient and outpatient referrals to identify high-risk patients.

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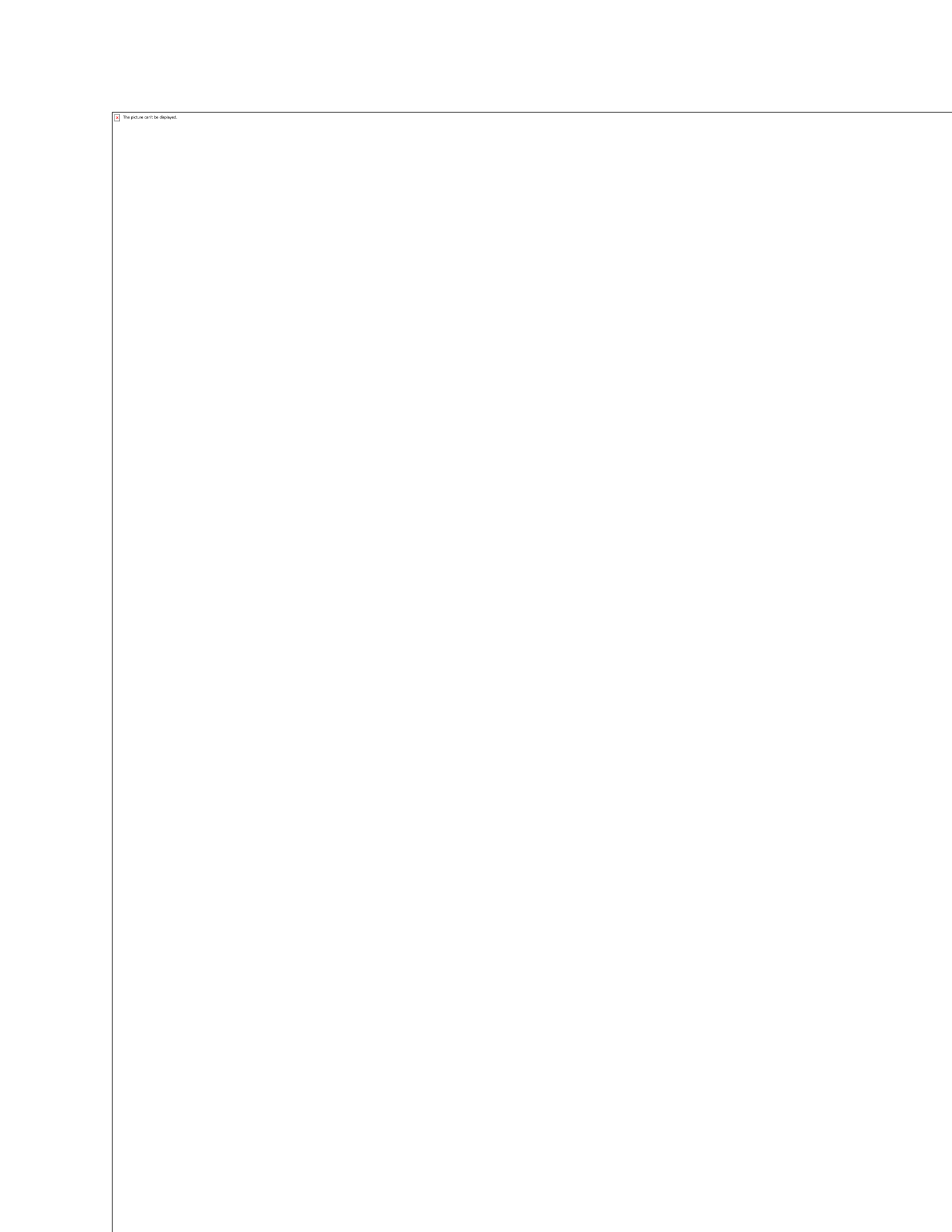
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Poster keywords

General Medicine, Quality Improvement, Shared Decision Making, Service design, Australia

50

An Audit on Cancellation Rate of Elective Urology Surgery in A Tertiary Hospital in Kuala Lumpur

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Kuala Lumpur Hospital, Wilayah Persekutuan Kuala Lumpur, Malaysia

Competition Track

EBPOM abstract competition

Abstract

Introduction: Elective surgical case cancellation refers to any surgical case that is listed into the operation theatre list but is not operated upon as scheduled. [1][2] It encompasses a range of avoidable and non-avoidable causes. When a surgery is cancelled, it wastes valuable hospital resources and caused consequences for the patients and their families. The psycho-social sequelae can be significant, adding stress to an already difficult situation. Moreover, the cost of extended hospital stays due to rescheduling procedures increase the healthcare burden.

Objective: This study aimed to look at the cancellation rate and associated causes of elective urology surgical lists re-scheduling in a tertiary hospital.

Methods: An observational, prospective, cross-sectional study was conducted on the elective urology surgical list in a tertiary centre from December 2022 to January 2023. Data was collected using a prepared questionnaire in Google Form, filled up by respective operating rooms' attending anaesthetic doctors and nurses. The prevalence and causes of cancellation were identified. The data was then analyzed and reported in the form of text, tables and charts.

Results: From a total of 210 patients were listed, 69 planned procedures(32.9%) were cancelled. Among those operations, 75.4% of the identifiable causes leading to cancellation were deemed avoidable. Among the most common avoidable reasons for cancellation were urinary tract infection(20.3%), followed by patients not admitted (20%), overlisting(13%) and patients who were found to be still receiving anti-platelet medication upon admission(10%).

Conclusion: The tertiary centre experienced a noteworthy rate of 32.9%(higher than the international benchmark of 5%) [3] for elective urology surgery cancellations, with 75.4% of identifiable reasons for re-scheduling of cases, being attributable to avoidable causes. This study highlights a need to formulate an institutional workflow to minimize cancellations to existing planned urology surgical lists, within the means of the current workload.

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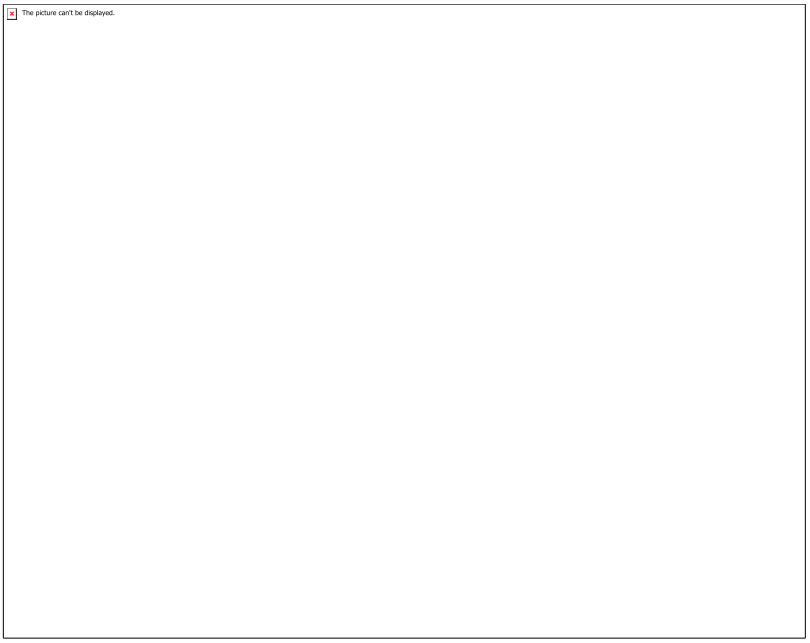

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Poster keywords

Audit, Cancellation Rate, Elective, Urology, Surgery

51

Bioelectrical impedance analysis, a useful addition to peri-operative risk stratification in patients undergoing major cancer surgery.

Jack Colbert[1,2], Daisy Jarvis[1,2], Nicholas Tetlow[1,2], Amy Dewar[1,2], Christopher Blenkharn[1,2], Robert Stephens[1,2], John Whittle[1,2]
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Competition Track

EBPOM abstract competition

Abstract

INTRODUCTION

Pre-operative cardio-pulmonary exercise testing (pCPET) is an established perioperative risk-stratification tool used to objectively assess aerobic fitness and identify patients at increased risk of developing postoperative morbidity (1). However, a subgroup of high-risk patients exist who are unable to perform pCPET. Assessment of aerobic fitness may therefore be underutilised in certain surgical candidates, particularly in patients with problems such as arthritis, significant frailty, or cancer-related pain. This patient cohort are at increased risk of adverse perioperative outcomes and increased healthcare utilisation (2). Identifying a relationship between certain body composition metrics and pCPET may provide an alternative way to risk stratify these high-risk patients unable to perform pCPET. We hypothesise that phase angle (PhA), body cell mass (BCM) and fat free mass index (FFMI) are associated with VO_{2Peak} an objective measure of cardio-pulmonary fitness.

METHOD

Between December 2022 & April 2023, we collected patients' preoperative bioelectrical impedance analysis (BIA) and CPET data as part of their routine surgical pathways. FFMI (kg/m2), BCM (kg) and PhA (°), was calculated using the InBody BWA by measuring segmental tissue resistance based on the rate at which an electrical current travels through the body. The highest absolute oxygen consumption (L/min) averaged over the last 30 seconds of exercise was used to determine VO_{2Peak}. Data analysis was performed using GraphPad Prism (9.5.1). Normality was assessed using Shapiro-Wilk and Pearsons correlation analysis was performed. Significance was set a $p<0.05$.

RESULTS

We identified 25 patients who underwent pCPET and BIA assessment. Demographics are presented in Table 1.

Pearsons correlation test demonstrated that VO_{2Peak} was significantly associated with A) PhA (r=0.786, p=0.0001), B) BCM (r=0.745, p=0.0001) and C) FFMI (r=0.665, p=0.0003), as seen in Figure 1.

CONCLUSION

PhA, BCM and FFMI are strongly associated with VO_{2Peak}.This relationship supports the use of routine preoperative BIA for patients unable to complete a pCPET. Further research is required to understand the relationship between BIA derived parameters and postoperative outcomes. BIA measures may provide a useful metric to target for exercise and nutritional prehabilitation in patients unable to perform pCPET.

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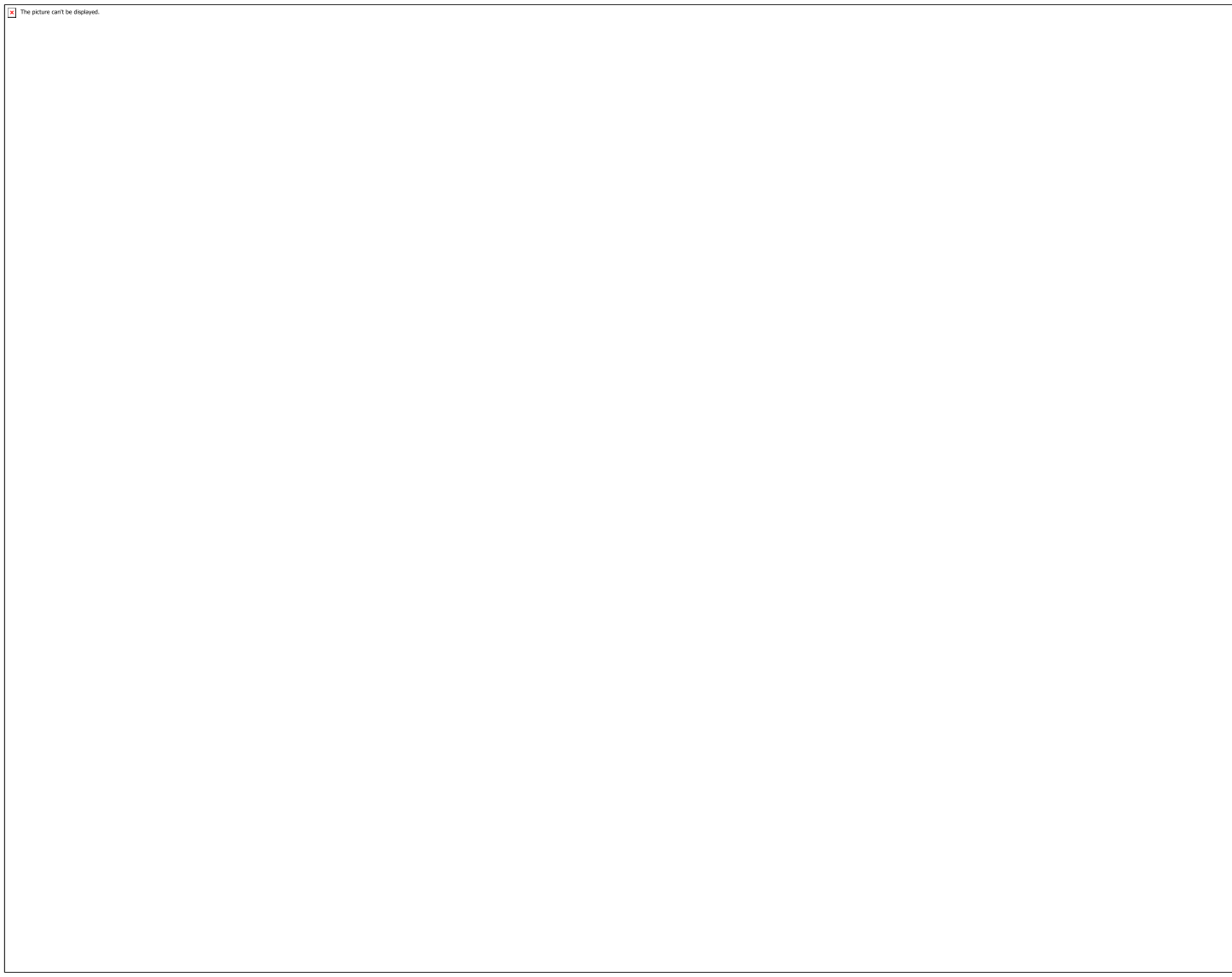

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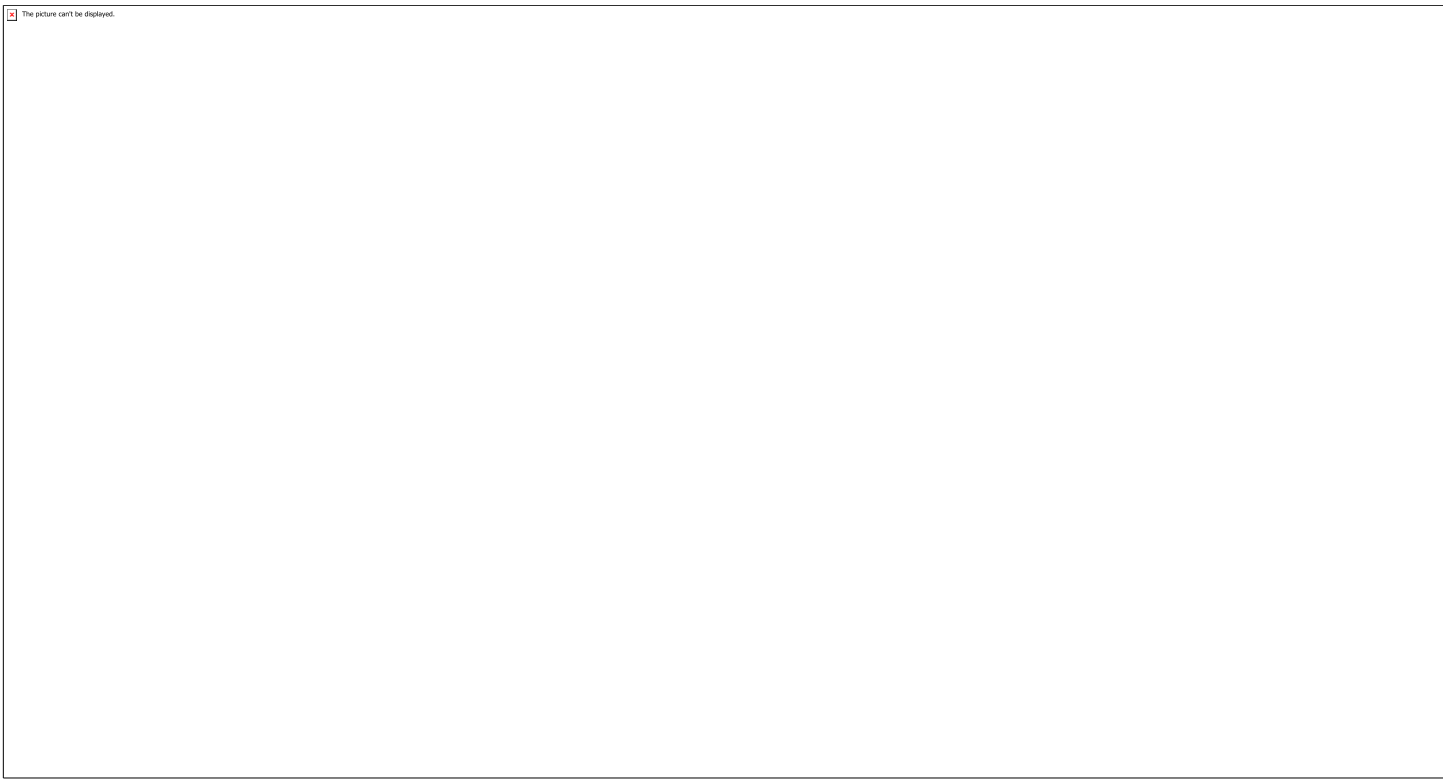

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Poster keywords

Cardiopulmonary exercise testing, Body impedance analysis, Phase angle, Body composition, Risk stratification

52

Introduction to Perioperative Medicine for Foundation Doctors

Ben Goodman[1], Niamh Hynes[2], Jennifer Lambert[3], Edward Hare[3]
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Competition Track

EBPOM abstract competition

Abstract

Introduction: 16 billion pounds is spent on the 10 million patients having surgery in the NHS every year. Research has shown that post-operative complications, length of hospital stay and long term morbidity can be reduced through optimising perioperative care. Every perioperative encounter offers teachable moments that facilitate the prevention agenda. Foundation doctors are regularly involved in many aspects of perioperative care in the course of their daily clinical duties, and furthermore their future careers will often see them in a position to impact on various parts of patients' perioperative pathways. Perioperative medicine as a field is relatively new, and as such specific teaching on its merits and application may not feature in medical school and foundation programme curricula. The regular local teaching for Foundation doctors presented an opportunity to include a session about the subject.

Aims and objectives:
The aim was to introduce Foundation Year 1 doctors to the concept of perioperative medicine, and demonstrate to them how they can contribute to good clinical care and positive outcomes, both in their current rotations and in their future careers. We sought to determine whether the delivered basic training would have a beneficial effect and therefore whether it would be worthwhile expanding to include other junior doctor groups.

Methods:
All 28 candidates completed the pre-course questionnaire; 25 completed the post-course questionnaire. 7% of candidates stated that they had previously had specific Perioperative Medicine teaching.

The following charts (see images section) show the candidates' pre- and post-course attitudes and confidence levels in dealing with different aspects of perioperative care (scale of 1 to 10):

We ran a half day course delivered by 4 Anaesthetists, for an audience of 26 FY1 doctors and 2 medical students. There was a combination of teaching styles including didactic lectures, videos, small group tasks, and interactive feedback sessions. Before-and-after questionnaires were completed, in which attendees were asked about their experience of perioperative medicine thus far, and then asked to self-appraise their confidence in dealing with various aspects of perioperative care. The responses were collected using Google Forms.

Conclusion:

The survey results consistently show a clear improvement in both interest and confidence in dealing with perioperative medicine. There were also many free-text comments from the attendees in which they stated how useful they found the course. We conclude that the teaching session significantly improved Foundation Doctors' understanding of perioperative medicine.

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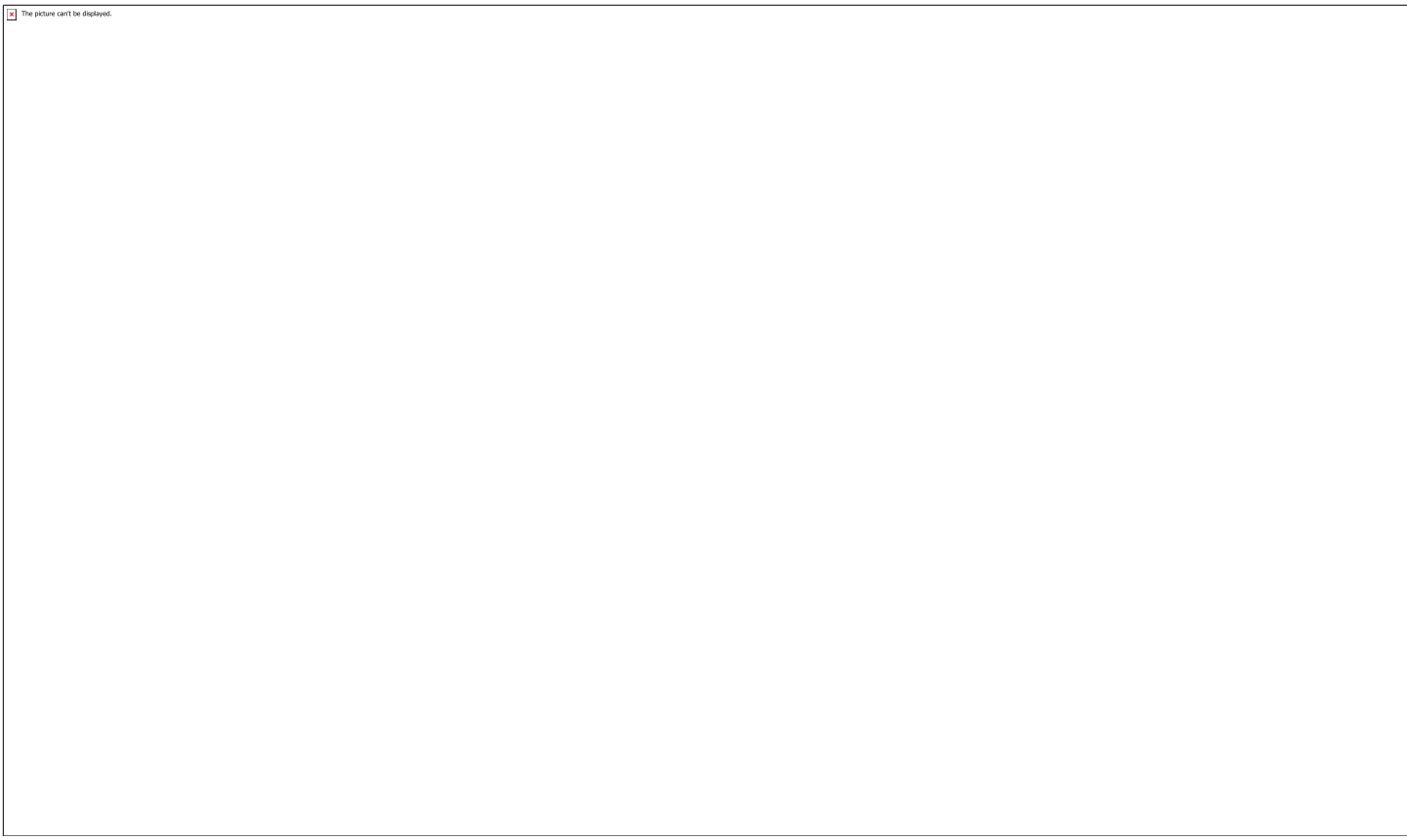

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Poster keywords

Perioperative, Teaching, Junior doctors

53

PREHABILITATION INDUCES ANTI-TUMOR IMMUNITY IN LUNG CANCER PATIENTS

Lixuan (Sabrina) Feng, Benjamin Gordon, Xin Su, Ariane Brassard, Iqraa Dhoparee-Doomah, Sabrina Leo, Rashami Awasthi, France Bourdeau, Betty Giannias, Lorenzo Ferri, Sara Najmeh, Jonathan Spicer, Francesco Carli, Jonathan Cools-Lartigue
McGill University, Montreal, Canada

Competition Track

iPOETTS abstract competition

Abstract

Introduction: Lung cancer remains the worldwide leading cause of cancer mortality highlighting the need for novel treatment options (1). Multimodal prehabilitation is a novel modality comprising exercise training, nutritional optimization with well-defined clinical benefits, but the underlying biological and immune modulations have not been studied (2, 3). We hypothesized that a multimodal prehabilitation program could shift the immune response towards stronger anti-tumor immunity within lung cancer patients.

Methods: Newly diagnosed lung cancer patients were referred to the Montreal General Hospital Prehabilitation Clinic for preoperative personalized multimodal intervention and blood samples were collected. We isolated peripheral blood mononuclear cells (PBMCs) from patient samples to assess functional and phenotypic changes. To assess cytotoxicity, we plated A549-GFP lung cancer cells with these patient PBMCs and assessed the percentage of A549-GFP cells remaining after two days. To assess the phenotype, PBMCs were also stained and characterized using flow cytometry.

Results: Twenty-eight lung cancer patients who underwent the multimodal prehabilitation program were included. After prehabilitation, patient isolated PBMCs showed significantly increased cytotoxicity against cancer cells ($p < 0.0001$) and significantly increased circulating NK cells both in cohort ($p = 0.0161$) and paired analyses ($p = 0.0312$).

Conclusions: Our data suggests that patients who undergo prehabilitation have increased PBMC cytotoxicity against lung cancer cells. Additionally, circulating NK cells are significantly increased which may play an important role in anti-tumor cytotoxicity. From these data, there may be a role for

prehabilitation as a therapeutic approach to complement current standard of care treatments and promote a stronger anti-tumor response.

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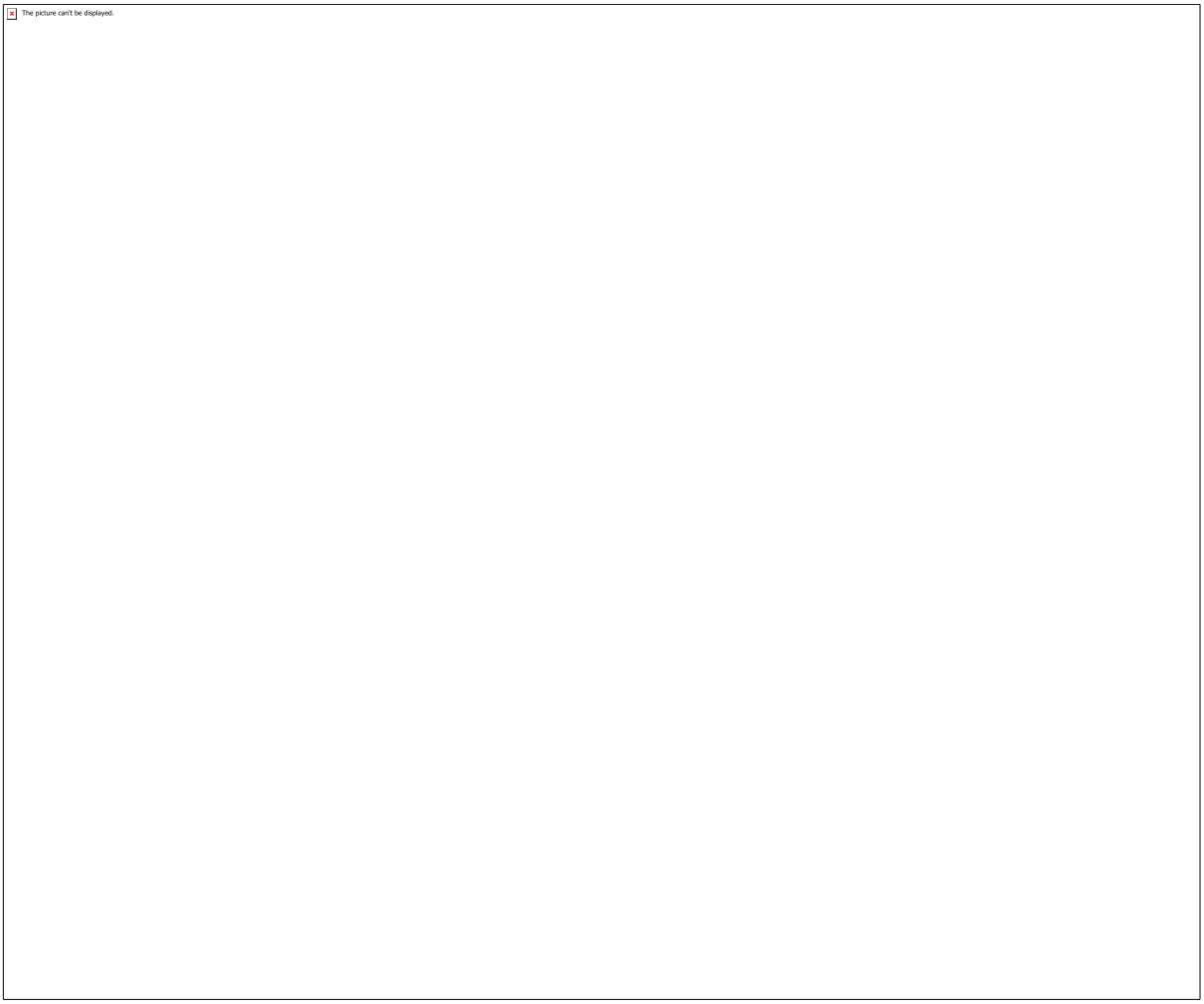

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Poster keywords

prehabilitation, immunity, lung cancer, anti-tumour, NK cells

54

Effect Of Hypothermia During Cardiopulmonary Bypass On Postoperative Neurological Outcomes

Kairavi Desai[1], Shian Ming Chen[1], Behnam Sadeghirad[1], Jessica Spence[1,2]
[1]McMaster University, Hamilton, Canada. [2]Population Health Research Institute, Hamilton, Canada

Competition Track

EBPOM abstract competition

Abstract

Introduction:

Hypothermia use during cardiopulmonary bypass (CPB) is a neuroprotective strategy commonly used in adults undergoing cardiac surgery. A recent survey of perfusionists found that >90% of institutions target a temperature of 32 – 34℃ during cardiopulmonary bypass (CPB). However, limited randomized controlled trials (RCTs) support this practice, which may be associated with coagulopathy, arrhythmia, and neurologic injury. To compare the effect of hypothermia versus normothermia during CPB on morbidity and mortality after adult cardiac surgery, we conducted a systematic review and meta-analysis.

Methods:

We searched MEDLINE, EMBASE, CENTRAL, and Web of Science to identify RCTs comparing the use of normothermic (≥35℃) and hypothermic (<35℃) CPB in adults undergoing cardiac surgery; studies evaluating pediatric populations and procedures involving the thoracic aorta were excluded. We evaluated the outcomes of delirium, stroke, perioperative bleeding and transfusion, and mortality. We assessed risk of bias using the Cochrane Risk of Bias tool 2.0. We pooled data using a random-effects model and assessed the quality of evidence for each outcome using the Grading of Recommendations, Assessment, Development and Evaluation (GRADE) approach. We used random effects indirect treatment comparison to compare the effects of mild (32-35°C) and moderate (<32°C) hypothermia to normothermia on perioperative bleeding.

Results:

We screened 2810 abstracts and 76 full texts; 55 RCTs were included. Hypothermia during CPB did not reduce the incidence of delirium (RR 0.69, 95% CI 0.21, 2.27), stroke (RR 0.84, 95% CI 0.57, 1.23), or mortality (RR 1.26, 95% CI 0.78, 2.05). Similarly, hypothermia compared to normothermia had no effect on the incidence of transfusion of pRBCs (RR 0.90, 95% CI 0.64, 1.25) or total blood products (RR 1.15, 95% CI 0.95, 1.38), nor did it impact the number of units of pRBCs (MD -0.25, 95% CI -2.34, 1.84) or total blood products (MD 0.13, 95% CI -0.28, 0.54) transfused. There was no difference in mean perioperative blood loss between mild (≥32-35℃) and moderate hypothermia (<32℃) [MD 78.07 (95% CI -63.45 to

219.59)], or between mild or moderate and normothermia [MD 57.09 (95% CI -11.87 to 126.06) and MD -20.98 (95% CI -162.42 to 120.46), respectively].

Conclusion:

The use of hypothermia compared to normothermia during CPB in adults undergoing cardiac surgery was neither associated with benefit nor harm. High quality multi-center trials are required to determine the optimal temperature management strategy during CPB.

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Poster keywords

Cardiopulmonary bypass, Cardiac anesthesia, Cardiac surgery, Critical care, Neurocognition

55

Improving National Emergency Laparotomy Audit (NELA) compliance at a district general hospital

Louis Peakall[1], Matt Edmunds[2], Francesco Scarcella[2]
[1]Royal Free London NHS Foundation Trust, London, United Kingdom. [2]Barking, Havering & Redbridge University Hospitals NHS Trust, London, United Kingdom

Competition Track

EBPOM abstract competition

Abstract

Introduction:

NELA is a national audit project provided by the Royal College of Anaesthetists with the aim to improve the quality of care for patients undergoing an emergency laparotomy[1]. Established in 2012, it seeks to provide high quality comparative data from all relevant health trusts and is reliant on self-submission of patient data. We performed an audit of our local compliance and implemented a range of processes to improve our contribution to the NELA database.

Methods:

We retrospectively analysed Bluespier™ electronic theatre records over a one-year period from 1st September 2021 to 31st August 2022, recording all procedures fulfilling NELA criteria. We then analysed the NELA database, comparing the number of cases performed with those formally submitted. Following the initial audit, we implemented measures including the appointment of NELA trainee leads, information posters within the theatre complex and the requirement that all emergency laparotomies are entered into the database before being booked. After the implementation of these changes, we completed a re-audit from 1st February to 30th April 2023 using the same methodology.

Results:

The initial audit demonstrated that over a one-year period, 376 procedures fulfilling NELA criteria were performed. Only 53 were formally entered onto the NELA database, reflecting an overall compliance of 14.1%. Following the implementation of the measures described, compliance improved to 42.8%, with 36 patients of the total 84 formally entered onto the database.

Conclusion:

Consistent self-submission of accurate patient data is crucial to enable NsELA to achieve its objectives and improve patient care. Our initial audit highlighted a paucity of data at our hospital that under-represents the high number of laparotomies performed and impairs our ability to critically appraise our performance. There are several possible explanations for this, including poor understanding of the data-input process and inconsistent presence of trainees. By increasing awareness of the NELA process, having increased trainee input and creating a protocolised system for booking emergency laparotomies we have improved compliance. There is scope to further improve this, which we hope to achieve this with further education for the theatre coordinators and preparing a business case for a nursing post, whose job role will include ensuring NELA completion. We aim to re-audit NELA compliance after the introduction of these interventions.

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Poster keywords

NELA, Laparotomy, Emergency, Peri-operative medicine, Quality improvement

56

Can pre-transplant six-minute-walk distance predict post-transplant outcomes and guide prehabilitation decisions in stem cell transplantation?

Shaza Abo[1,2], Linda Denehy[1,3], David Ritchie[4], Catherine L Granger[1,5], Amit Khot[4,6], Lara Edbrooke[1,3]
[1]Department of Physiotherapy, University of Melbourne, Melbourne, Australia. [2]Department of Physiotherapy, Peter MacCallum Cancer Centre, Parkville, Australia. [3]Department of Health Services Research, Peter MacCallum Cancer Centre, Parkville, Australia. [4]Clinical Haematology, Peter MacCallum Cancer Centre and Royal Melbourne Hospital, Parkville, Australia. [5]Department of Physiotherapy, Royal Melbourne Hospital, Parkville, Australia. [6]Peter MacCallum Dept of Oncology, University of Melbourne, Melbourne, Australia

Competition Track

EBPOM abstract competition

Abstract

Introduction: Stem cell transplantation (SCT) is associated with significant physical and psychological peri-procedure challenges. Growing research supports exercise interventions before, during and following SCT to lessen this burden however exercise services are not readily available worldwide. This study aims to explore the predictive value of the universally available assessment, six-minute-walk distance (6MWD) for post-transplant hospital length of stay (LOS) and mortality at 1-year, to better inform target interventions.

Methods: Audit of prospectively collected data including 6MWD, LOS and 1-year mortality from adults treated for haematological malignancy with both autologous and allogeneic-SCT. Pearson's correlation coefficients and chi-square tests were used to assess bivariate relationships, including change in 6MWD from baseline to pre-procedure (autologous sample). Simple linear or logistic regression (with covariates including age, sex, diagnosis, BMI, treatment characteristics) was used to further explore relationships between 6MWD and outcomes.

Results: Preliminary results: Data were included from n=345 and n=196 adults treated with autologous-SCT and allogeneic-SCT, respectively over 2.5 years. Demographic and clinical characteristics are presented in Table 1. Median [IQR] age was 63 [55-68] and 53 [41.25-60.75] years. At baseline, fewer than half of patients achieved predicted 6MWD based on sex, age, height and weight (40.7% and 36.7% autologous and allogeneic-SCT respectively) [1]. This was not correlated to LOS or 1-year mortality in either autologous or allogeneic-SCT (LOS: r=-0.015, p=0.86 and r=-0.042, p=0.56; mortality: r=-0.095, p=0.17 and r=0.127, p=0.098 respectively). 6MWD was weakly correlated with LOS and 1-year mortality in autologous-SCT (r=-0.16, p=0.024 and r=-0.14, p=0.021, respectively), but not in allogeneic-SCT (r=-0.07, p=0.37 and r=0.07, p=0.35, respectively). 119/156 (76%) autologous-SCT patients improved 6MWD from baseline to pre-procedure (mean difference (95% CI) 36.2 (26.8 to 45.6) m). Improvements in 6MWD were weakly associated with LOS (r=0.195, p=0.020, n=141) but not 1-year mortality (r=0.103,

p=0.264, n=120). In regression models in autologous-SCT predicting LOS the variance explained by 6MWD (2.4%) was improved by adding diagnosis (29.7%) and sensitivity for mortality was low.

Conclusion: The preliminary results above should be interpreted with caution due to large amounts of missing data. Preliminary analyses suggest that factors other than pre-transplant 6MWD contribute to the variability of LOS and mortality in patients treated with autologous and allogeneic-SCT. Analyses of additional outcomes, such as complications existing comorbidities, medications, may also help to identify characteristics of patients who should be targeted for prehabilitation.

References: 1. Enright (1998). AJRCCM, 158(5), 1384-1387.

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Poster keywords

transplant

57

Establishing a new cancer prehabilitation service - Gloucestershire Hospitals NHS Foundation Trust

Duncan Castle[1], Anna Simpson[1], Laura Powell[1], Samantha Lyons[1], Katherine Lloyd-Jones[1], Joseph Greenhill[1], Katie Foy[1], Louise Sellar[2], Juliette Sherrington[2]
[1]Severn Deanery, School of Anaesthesia, Bristol, United Kingdom. [2]Gloucestershire Hospitals NHS Foundation Trust, Gloucester, United Kingdom

Competition Track

EBPOM abstract competition

Abstract

Introduction

Research suggests patients who undergo prehabilitation have improved clinical outcomes [A]. With NHS waiting lists at an all-time high, it is imperative to convert waiting time to preparation time, improving surgical outcomes and encouraging healthier lifestyles.

Gloucestershire Hospitals NHS Foundation Trust has developed a prehabilitation service for patients receiving cancer treatment, comprising a multidisciplinary team of allied healthcare professionals. Following a pilot study (2019), funding was secured from MacMillian Cancer Support for a 2 year service. We collected data to assess the impact of this program on surgical outcomes.

Methods

After establishing the service, we collected data from patients undergoing prehabilitation before major cancer surgery. This was compared to data from patients undergoing surgery the previous year, without prehabilitation. Data metrics: Days alive out of hospital at 90 days (DAOH90), Clavien-Dindo score, complications, length of stay.

Results

Baseline data was collected from 74 colorectal and 37 gynaecology patients (April-June 2021). This was compared to 70 colorectal & 27 gynaecology prehabilitation patients (March-November 2022). Results showed an increase in patients without complications (Clavien-Dindo) after prehabilitation; 43% to 59% (colorectal) and 68% to 74% (gynaecology) (Figures 1 & 2). There was a trend towards increased DAOH90 after prehab in both specialities. A significant increase was observed after colorectal surgery,

80 to 84 days (p=0.027, Mann-Whitney test). There were no respiratory complications in the prehabilitation groups compared to baselines of 8% (colorectal) and 11% (gynaecology).

Conclusion

Our results suggest a reduction in complications and days spent in hospital for patients who underwent prehabilitation. This data aligns with the literature and provides evidence for the effectiveness of our local service. Reductions in complications and time spent in hospital should translate to reduced health costs and improved outcomes for patients. Not all patients in 2022 underwent prehabilitation. Those who did not were excluded from data collection, a potential confounder. We continue to assess the impact of our service and seek to expand access and uptake.

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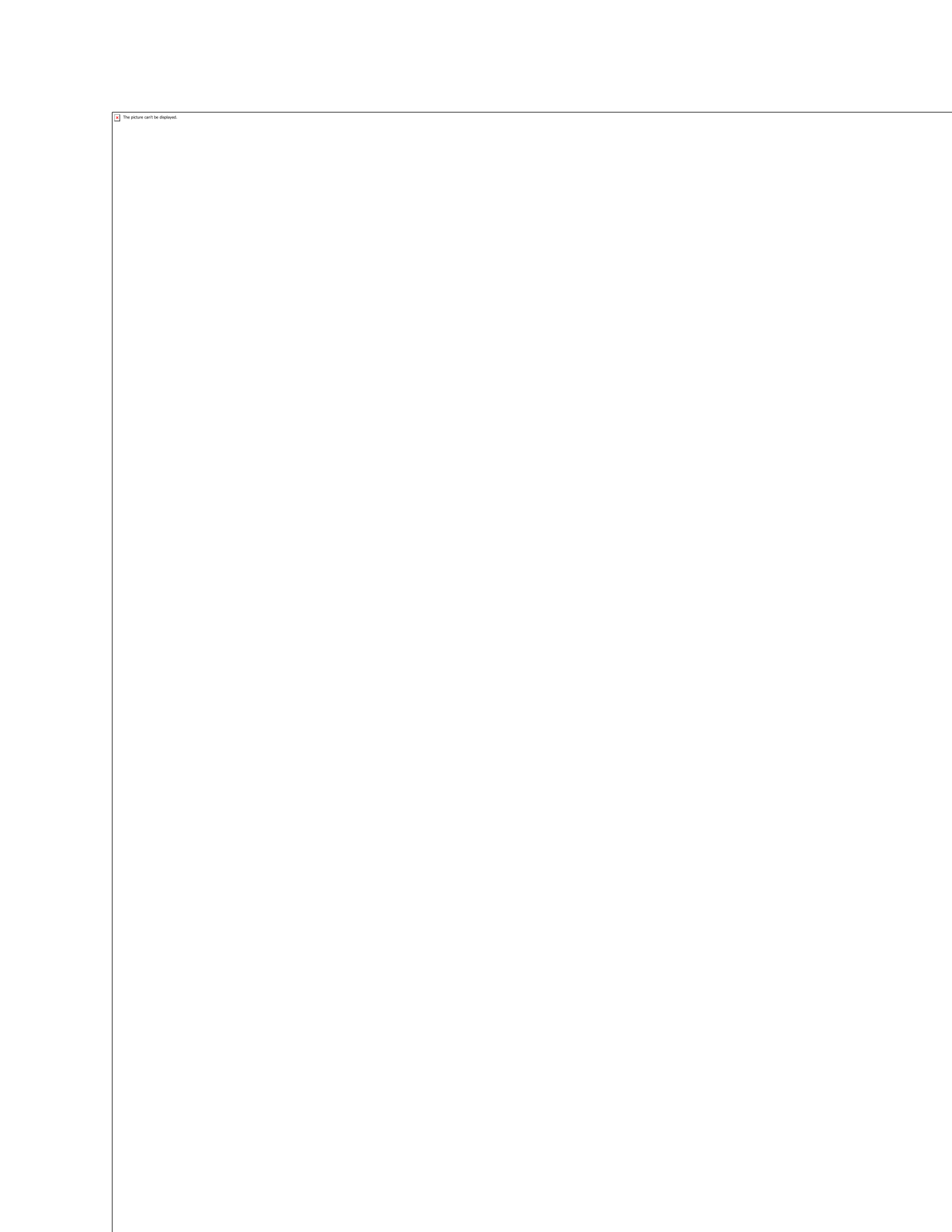
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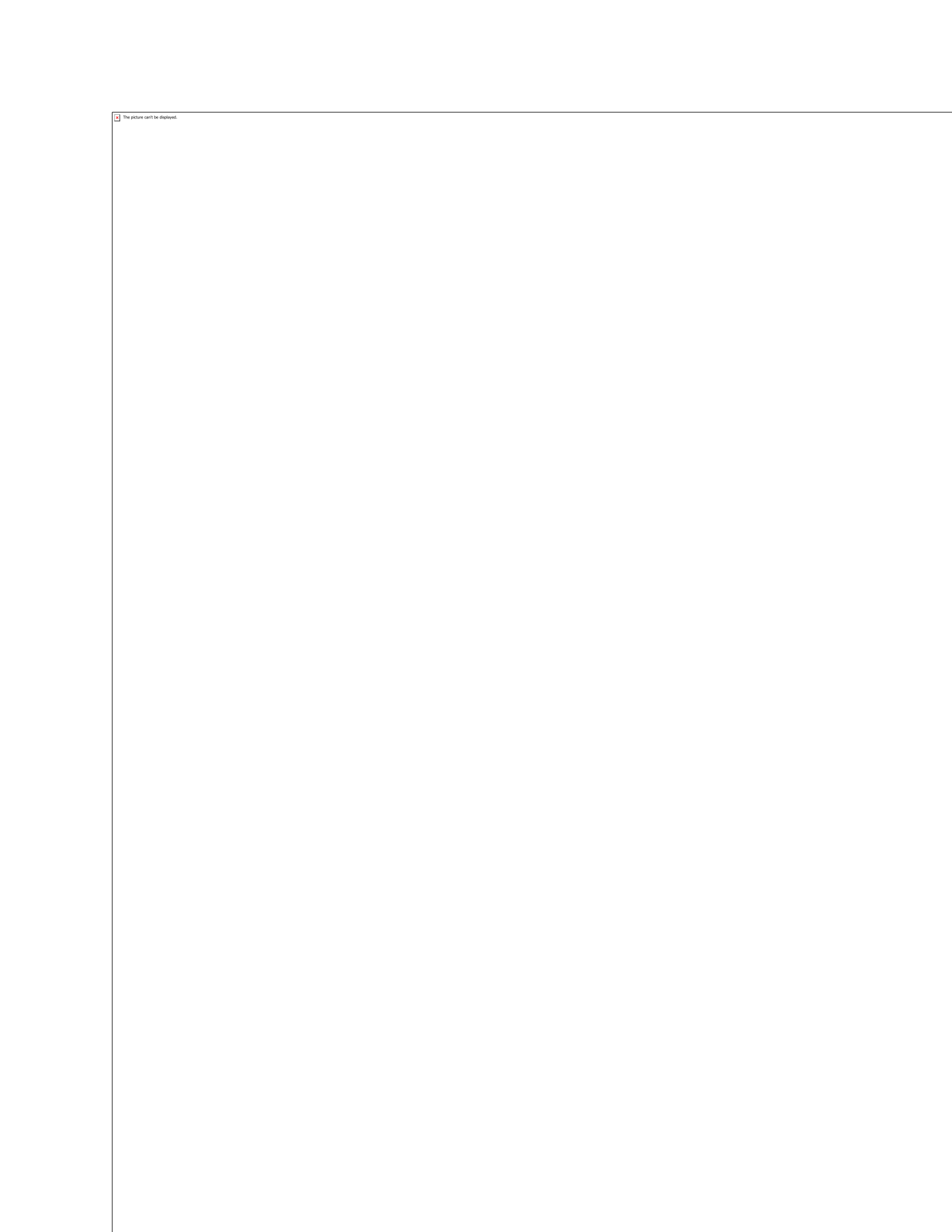
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Poster keywords

Prehabilitation, Cancer, Colorectal, Gynaecology, Complications

58

Comparison of analgesic techniques in patients undergoing elective oesophagectomy

Lucy Gurr, Tom Knapp, Andrew Brennan
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Competition Track

EBPOM abstract competition

Abstract

Introduction

Multimodal analgesic techniques are commonly used for patients undergoing oesophagectomy (1). A paravertebral block is a good technique due to a reduced side effect profile in comparison to epidural (2). However, anecdotally our patients seemed to have worse outcomes. We set out to ascertain any difference in outcome in our trust.

Methods

All patients undergoing elective oesophagectomy in Bradford Royal Infirmary between 31/12/21 and 01/12/22 (n=29) were stratified by epidural (n=16) versus paravertebral (n=13), and assessments made of pain control and ability to engage with enhanced recovery.

Pain control was documented as being an issue if patients required a specific review from medical staff in the first 24 hours, nursing staff documented pain control as an ongoing issue, or patients requiring >2 IV opioid boluses in the first 24 hours.

Results

- N = 29
- CPET risk score - high (n=5), low (n=22), unknown (n=2)
- Type of oesophagectomy - minimally invasive oesophagectomy (n=4), thoraco-abdominal (n=4), hybrid Ivor lewis (n=19)

- Analgesic technique - epidural (n=16), paravertebral (n= 13, 6 of which had additional spinal)

Conclusion

These results seem to suggest that although outcomes such as length of ICU/hospital stay are unlikely to be changed by mode of analgesia, epidurals may give patients a shorter stay in hospital. It is worth noting that all patients who were on ICU >10 days had a paravertebral. Patients with epidurals are more able to engage with the enhanced recovery with physiotherapy due to decreased pain. The recommendations we have made to anaesthetic staff at our trust would be that if a paravertebral is used, a PCAS be prescribed for recovery rather than on ICU post operatively when the patient is in pain.

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(1) Donohoe CL, Phillips AW, Flynn E, Donnison C, Taylor CL, Sinclair RCF, Saunders D, Immanuel A, Griffin SM. Multimodal analgesia using intrathecal diamorphine, and paravertebral and rectus sheath catheters are as effective as thoracic epidural for analgesia post-open two-phase esophagectomy within an enhanced recovery program. Dis Esophagus. 2018 Jun 1;31(6). doi: 10.1093/dote/doy006. PMID: 29800270

(2) Ng Cheong Chung J, Kamarajah SK, Mohammed AA, Sinclair RCF, Saunders D, Navidi M, Immanuel A, Phillips AW. Comparison of multimodal analgesia with thoracic epidural after transthoracic oesophagectomy. Br J Surg. 2021 Jan 27;108(1):58-65. doi: 10.1093/bjs/znaa013. PMID: 33640920.

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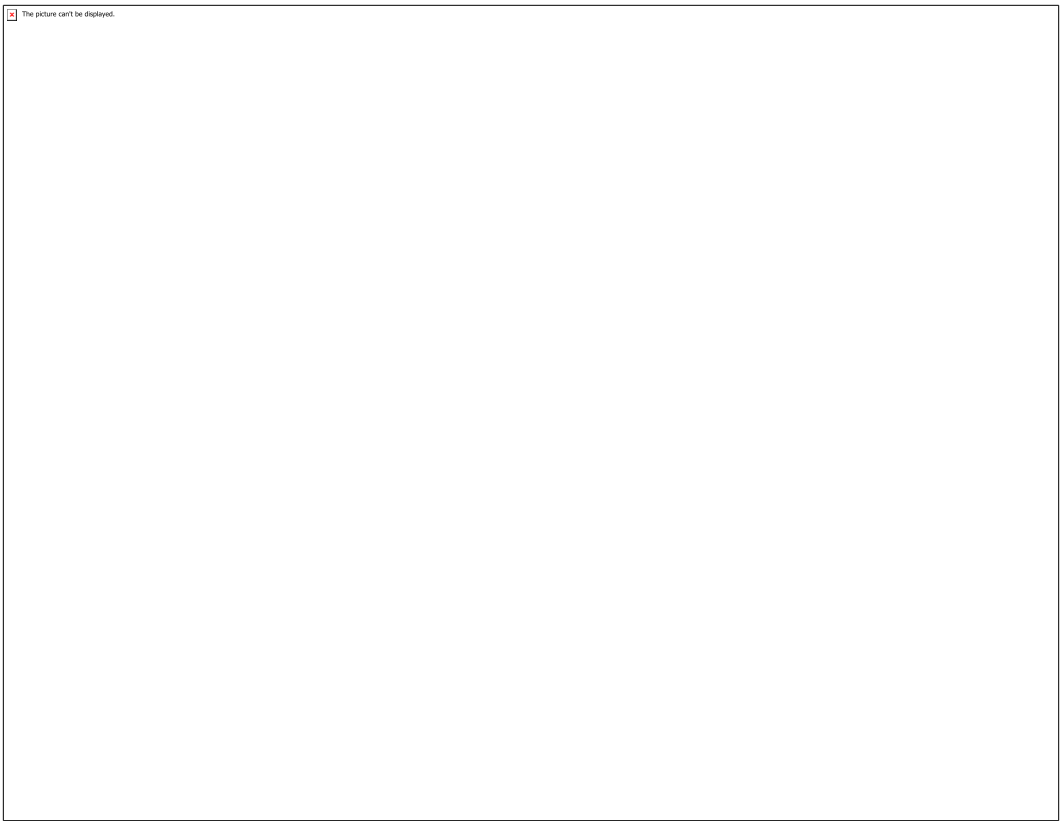

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Poster keywords

oesophagectomy, paravertebral, epidural, thoracic, multimodal analgesia

59

Is Supervised Exercise Worth It? A Feasibility Study in Patients With Esophageal Cancer Undergoing NACT

Jade St-Pierre, Miquel Coca-Martinez, Kenneth Drummond, Enrico Minnella, Lorenzo Ferri, Celena Scheede-Bergdahl, Franco Carli
McGill University, Montreal, Canada

Competition Track

iPOETTS abstract competition

Abstract

Introduction: Traditionally, multimodal prehabilitation utilizes exercise, nutrition, and psychosocial support to optimize patients for surgery. However, prehabilitation in patients actively undergoing neoadjuvant chemotherapy (NACT) remains largely unknown. Given that standard of care in Canada for esophageal adenocarcinoma is NACT followed by resection, this makes them an ideal group as there is guaranteed “idle time”. In addition to this population being deconditioned at diagnosis, NACT further decreases their functional capacity, induces toxicities, and can decrease time-to-treatment-failure at the cost of longer survival1. As the tertiary care hospital center in this study covers a large geographical area, not all patients are realistically able or willing to attend supervised trainings. Therefore, the objectives of the study were to 1) Determine feasibility and safety of the prehabilitation intervention and 2) Determine if home-based, unsupervised exercise, provides similar benefits to hospital based, supervised exercise.

Methods: A feasibility study was conducted; patients were randomized to supervised or unsupervised exercise. The study was considered feasible if patients adhered to 70% of the program. Compliance was measured by number of completed exercise sessions and adherence to nutritional advice and supplementation. Safety was measured by occurrence of adverse events. Functional capacity was measured by 6MWT and sit-to-stand and Quality of Life by ESAS.

Results: 44 patients were enrolled: supervised (n=23) and unsupervised (n=21). Average age was 64, BMI 27.9kg/m2 and 68% underwent an Ivor Lewis esophagectomy. There were no significant differences between groups at baseline. Overall adherence to the program by the supervised group was 72% and 77% by the home-based group. Exercise allocation was not linked to adherence (p=0.45). There were 2 non-serious adverse events recorded during this trial: one bout of syncope and one of light headedness during exercise. There is a relative maintenance or improvement of 6MWT, STS and ESAS throughout NACT.

Conclusion: Prehabilitation is a feasible and safe intervention in this esophageal cancer population. Home-based exercise seems to provide relatively similar benefits as supervised exercise. These are promising results given the deconditioned population and the expected decline during the preoperative

period. Adequately powered RCT's with a revised study timeline will need to be conducted to accurately investigate long term-effectiveness post-operatively.

References: Kidane, B., Coughlin, S., Vogt, K., & Malthaner, R. (2015). Preoperative chemotherapy for resectable thoracic esophageal cancer. Cochrane Database of Systematic Reviews, (5).

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Poster keywords

Esophageal Cancer , Supervised Exercise, NACT, Prehabilitation, Home-Based Exercise

60

Patient Reported Outcomes; Impact of Dietetic Interventions in Prehabilitation . Results from a Pilot Colorectal Prehabilitation Study

Marie Sheahan
Cork University Hospital, Cork, Ireland

Competition Track

iPOETTS abstract competition

Abstract

Introduction:

A review of published prehabilitation studies reported 11% specified a nutritional intervention was provided to patients (Gillis,2021). To maximise the benefits for patients, prehabilitation should offer a multimodal approach which includes exercise, nutrition and psychological interventions.

The objective of this study was to assess if patients found the dietetic advice and support given to them within a multimodal pilot prehabilitation programme to be beneficial.

Methods:

Permission was obtained from the University of Oxford to use The Nutrition and Dietetic Patient Outcomes Questionnaire Adult Patient (NDPOQ-A) within a multimodal pilot colorectal prehabilitation programme. This questionnaire was given to all patients who completed the pilot prehabilitation programme. Patients enrolled in the pilot were aged >18 years and were scheduled for major colorectal surgery.

The NDPOQ-A questionnaire provides a patient-centric report of the outcome on the management of their condition resulting from the support and advice from the dietitian.

The questionnaire comprises of 15 statements. Patients were asked either strongly agree, agree, neither agree or disagree, disagree or strongly disagree with each statement. The responses were analysed using excel.

Table 1 lists the statements from the questionnaire.

Results:

81% of respondents either strongly agreed or agreed with all15 statements given.

83% agreed that their general wellbeing improved following the advice and support of the dietitian. 83% either agreed or strongly agreed with the statement that the advice from the dietitian made them feel confident in the choices they made choosing their food. While 75% of respondents felt better able to manage their weight.

100% of patients either strongly agreed or agreed with the following statements:

-The advise you got , helped you better understand your condition;

-Helped you better understand how to manage your condition;

-Added to the information you got from the doctors.

No patient strongly disagreed with any of the statements.

Conclusion:

Though the sample size was small, this study shows patients value the advice and support given by a dietitian within a multimodal prehabilitation programme. Future multimodal prehabilitation programmes should include dietitians to enhance patient outcomes.

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Royal free London. Oxford University Innovation.The Nutrition and Dietetic Patient Reported Outcome Questionnaire – Adults.2015 https://innovation.ox.ac.uk/outcome-measures/nutrition-dietetic-patient-outcomes-questionnaires-ndpoq/ Accessed 2019, 2020, 2021

Gillis C, Davies S, Carli F., Wischmeyer P, Wootton S, Jakson A, Riedel B, Marino L. Denny Z, Levett H, West M. Current Landscape of Nutrition Within Prehabilitation Oncology Research: A Scoping Review. Frontiers in Nutrition.2021(April) https://www.frontiersin.org/articles/10.3389/fnut.2021.644723/full

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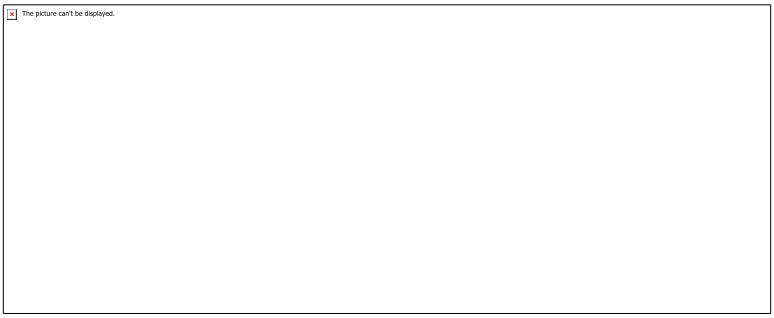

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Poster keywords

Dietitian, Prehabilitation, Nutrition, Patient Reported Outcomes, Colorectal

61

Exploring equality in access to Prehabilitation: An Active Against Cancer Case Study

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[1]School of Anaesthetics, Health Education England Yorkshire and Humber, Leeds, United Kingdom.
[2]Harrogate & District NHS Foundation Trust, Harrogate, United Kingdom

Competition Track

iPOETTS abstract competition

Abstract

Introduction

Prehabilitation is known to have physiological benefits for patients with cancer (1). As increasing numbers of services are being established, it is vital to further understand factors influencing access, to ensure these benefits can be realised equitably. This study aims to analyse the engagement of service users between September 2020 and August 2021 at Active Against Cancer (AAC), an NHS delivered exercise referral service providing prehabilitation to cancer patients. In particular we were interested in how distance from the service, ethnicity and socioeconomics affected patient engagement.

Methods

This study was conducted retrospectively by reviewing referral and uptake data captured routinely by Harrogate and District NHS Foundation Trust. Analysis was performed in collaboration with South Central and West Commissioning Support Unit. Service engagement rates were calculated and mapped to Lower Super Output Areas, alongside travel time, ethnicity and deprivation data. Travel time to the Active Against Cancer service was based on drive time for arrival at 11am on a Tuesday. Deprivation and Ethnicity data were derived using reference data from the Indices of Multiple Deprivation 2019 (The Ministry of Housing, Communities and Local Government) and The Census 2021.

Results

Results show a negative correlation between travel time to the service and engagement with exercise referral. Those service users who lived 0-30 minutes from the service were more likely to engage with exercise referral (60-80% uptake) compared to those living further away (30-60% uptake 30-45 minutes away, 0-30% uptake 45-60 minutes away, 0% uptake >60 minutes).

There appears to be no correlation between uptake and ethnicity. However, there is a negative correlation between engagement in the service and low deprivation. North Yorkshire is an area with few areas with high levels of deprivation; therefore there are few samples from the areas of highest deprivation. However, comparing deprivation deciles 5 to 10 there was an improvement in engagement as deprivation decreased (30-60% compared with 60-80%).

Conclusion

The data suggests that to maximise engagement with an exercise referral service it should be sited within 30 minutes of its service users. With knowledge of this, AAC are introducing satellite units in more remote locations aiming to improve engagement. We are hopeful that this will also address reduced engagement in deprived areas by improving accessibility.

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(1) West MA et al. Effect of prehabilitation on objectively measured physical fitness after neoadjuvant treatment in preoperative rectal cancer patients: a blinded interventional pilot study. BJA. 2015;114:244–251.

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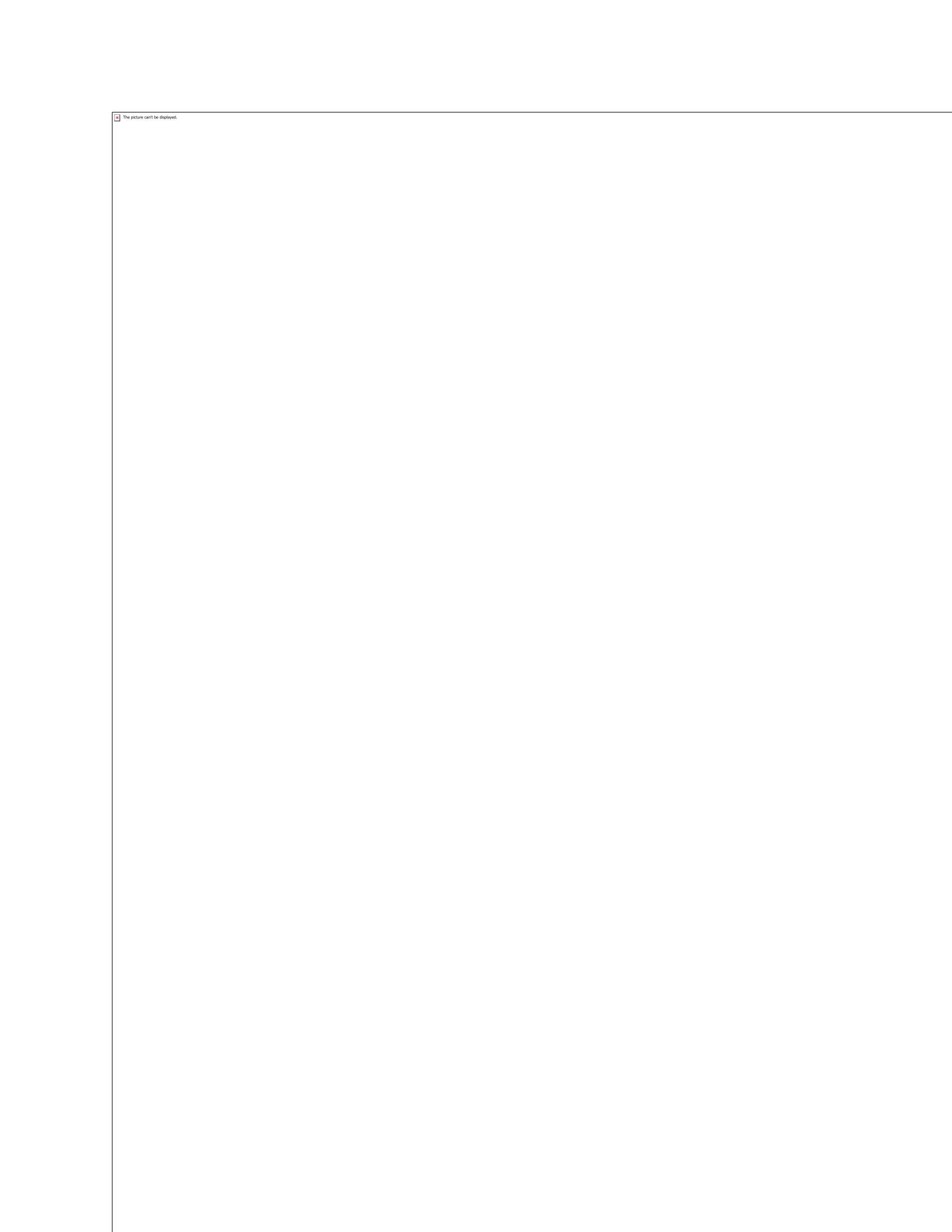
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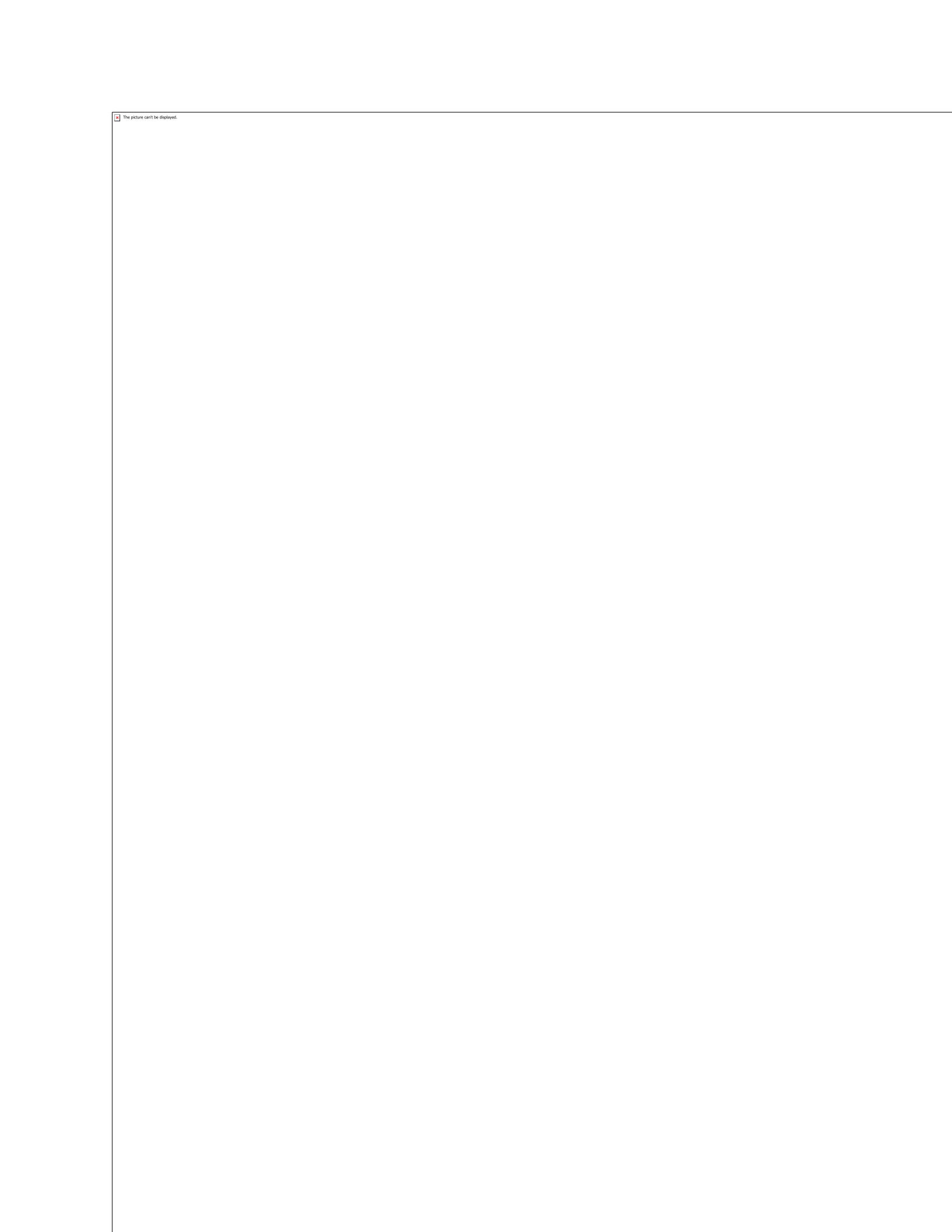
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Poster keywords

Prehabilitation , Exercise , Cancer, Inequality , Equality

62

Six-month outcomes from a new prehabilitation service for complex colorectal cancer patients

Tomas Partington, Nicola Pearson, Alice Finch, Richard Holman, michael o'connor
St Mark's, London, United Kingdom

Competition Track

EBPOM abstract competition

Abstract

Introduction:

A novel prehabilitation clinic for complex cancer patients was set up with the hope of improving patient outcomes at our tertiary referral centre. We review the first six months clinical and operational outcome data of this service.

Methods:

The clinic consisted of a physician, dietician, pharmacist, physiotherapist, and anaesthetist. Patients with complex colorectal cancer deemed to be 'high risk' by their operating surgical team were referred either because of the scale of the surgery proposed or premorbid concerns such as extremes of age or weight, polypharmacy, multi-morbidity, or frailty. We measured hospital length of stay, Intensive Care Unit (ICU) bed utilisation and avoidable on the day cancellation. These measures were compared to patients who were operated on in the 12 months prior to the clinic's inception by the same institution. We also performed a cost benefit analysis of the service and its interventions using the same comparator group.

Results:

The service saw 147 patients in six months and depending on the grade of surgery length of hospital stay was reduced by 32%-67.7%, with a 33.1-79% reduction in ICU bed days utilised. This reduction in the length of stay is equivalent to creating 24 extra ward beds.

There was 28.6% reduction in avoidable on the day cancellations compared to the previous 12 months. There was a reduction in onward specialist clinic referrals from 19.2% to 3%

The estimated recurring cost savings per year which includes reductions in length of stay, transfer to main hospital site, pharmacy savings and reduction in referrals to other specialities is £1.6million.

Conclusion:

The prehabilitation clinic has been associated with a reduction in ICU bed utilisation and hospital length of stay. It has proven to be cost effective and has been accepted by surgical colleagues for high-risk surgical patients. This service has set new standards for patients with complex colorectal disease.

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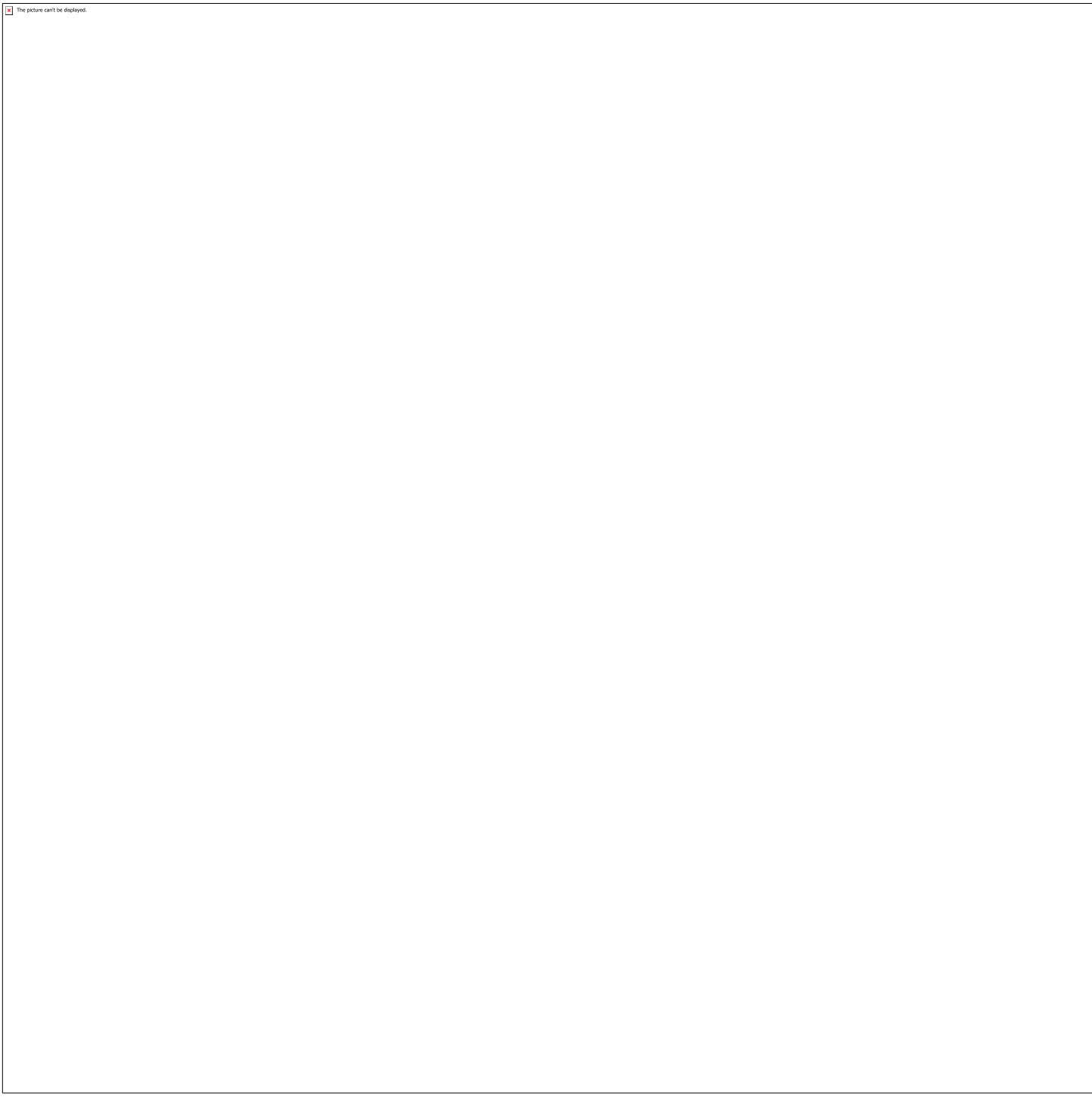

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Poster keywords

Prehabilitation, Cost Benefit Analysis, MDT clinic

63

The role of Prehabilitation in Improving Postoperative Outcomes for Colorectal Cancer Surgery

Ethan Baker[1], Rhidian Jones[2]
[1]Cardiff University, Cardiff, United Kingdom. [2]Cwm Taf Morgannwg University Health Board, Bridgend, United Kingdom

Competition Track

EBPOM abstract competition

Abstract

Introduction

Prehabilitation aims to improve a patients' physiological reserve along with their functional capacity prior to major surgery. Since November 2021 a structured prehabilitation programme has been offered to all patients undertaking major abdominal surgery at Princess of Wales Hospital. The programme includes exercise classes three times a week along with nutritional and psychological support. This prehabilitation aims to decrease length of stay following surgery, reduce complications, and improve quality of life for patients. For this service evaluation patients were grouped as low risk (<1% thirty-day mortality), intermediate risk (1-4% mortality) or high risk (>4% mortality) enabling outcomes to be assessed against patient risk of postoperative mortality, aiding in evaluation of the scheme's success in achieving its intended outcomes.

Method

A service evaluation with a total of thirty-two patients between November 2021 and March 2023 that had undertaken prehabilitation prior to colorectal surgery was conducted. Compared against a control group of 67 colorectal surgery patients prior to November 2021 without a prehabilitation programme in place. A comparison was made between the two groups of incidences of complications; graded using the Clavien-Dindo classification, along with length of stay following their surgery using hospital data and discharge letters. The patient groups were assessed overall and subdivided by surgery type, AP resection, Anterior Resection and Hemicolectomies. Furthermore, the population was divided into risk groups based upon their predicted thirty-day mortality using the Carlisle risk calculator, using data from CPET clinic.

Results

Overall, it was found that the prehabilitation programme was able to reduce incidence of complication in those with a thirty-day mortality risk greater than 4% by 8%. The greatest improvement for incidence of complication is seen in the 4% mortality group undergoing Hemicolectomy's which saw incidence of complication dropping to 0% from 25%. AP resections saw a 20% reduction in incidence of complications overall.

With length of stay post op; the overall 1-4% mortality rate group average length of stay was reduced by 1 day; and in the less than 1% group this was reduced by 2 days on average.

Conclusion

Despite limited patient numbers it can be seen that the prehabilitation programme is able to improve patients' outcomes post operatively. With decreases seen in both incidence of complication and length of stay. Further analysis is needed for full quantification as participants numbers increase.

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Poster keywords

Prehabilitation, Colorectal Surgery, Oncology, Post Op Recovery, Service Evaluation

64

The Role of Prehabilitation in Improving Patient Physiological Reserve Prior to Surgery

Ethan Baker[1], Rhidian Jones[2]
[1]Cardiff University, Cardiff, United Kingdom. [2]Cwm Taf Morgannwg University Health Board, Bridgend, United Kingdom

Competition Track

EBPOM abstract competition

Abstract

Introduction

Prehabilitation aims to improve a patients' physiological reserve along with their functional capacity prior to major surgery. Since November 2021 a structured prehabilitation programme has been offered to all patients undertaking major abdominal surgery at Princess of Wales Hospital. The programme includes exercise classes three times a week along with nutritional and psychological support. As part of the exercise class a 10m incremental shuttle walk test (ISWT) is conducted on commencing the programme as well as at approximately 4 weeks into the programme. This retrospective service evaluation aims to assess if the prehabilitation programme is increasing functional capacity through an increase in ISWT score. There has been a strong correlation found between an ISWT and peak VO2[1], therefore, using the ISWT can give an indication in improvement of peak VO2 with minimal equipment compared to cardio-pulmonary exercising testing.

Method

Between November 2021 and March 2023, 10 patients have completed the ISWT at the start of the programme, and on average 29 days after commencing the programme. The ISWT involves the patient walking between two cones spaced 10m apart, they keep going until they are unable to cover the distance within the time between the two bleeps. Patients are unaware of their score prior to completing the second bleep test to remove bias.

Results

It was found that on average patients increased their walking distance by 119m's during the ISWT (SD = 64m) equivalent to an average increase of 36%. The smallest gain seen was an improvement of 10m's, however the greatest improvement was 220m's after attending 6 sessions. There was no correlation

found between number of sessions attended and gain in distance during the ISWT, however patients had attended a minimum of 5 sessions.

Conclusion

Despite limited patient numbers the prehabilitation programme is able to improve the patients exercise tolerance indicating an increase in peak VO2 prior to surgery. This improvement in VO2 should lead to an improvement in postoperative outcomes for patients [2].

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Poster keywords

Prehabilitation , CPET, Functional Capacity, Oncology, Preoperative Optimisation

65

Evaluation of post-dural puncture headache follow-up in obstetric patients

Xiaoxi Zhang[1], Luke Hoskins[2], Shivali Patel[2]
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Competition Track

EBPOM abstract competition

Abstract

Background

Dural puncture in women receiving epidural analgesia for labour has an incidence of approximately 1%.1 More than 50% of these patients subsequently develop a post-dural puncture headache (PDPH), which can be severe and debilitating.1-3 The Obstetric Anaesthetists' Association (OAA) recommends daily reviews, comprehensive documentation of assessments, and appropriate follow-up post discharge. 1 This important follow-up process ensures consistent symptom management, prompt detection of serious complications, and support for women suffering from PDPH. The aim of our project was to evaluate the quality of PDPH follow-up at our centre.

Method

Over a four-month period, PDPH patients were identified, and their anaesthetic procedure records and patient notes were reviewed. Additionally, patients were invited to participate in a telephone interview concerning the management of their PDPH.

Results

We identified 12 cases of PDPH and reviewed 61 follow-up entries in patient records. The follow-up documentation was inconsistent, with 43% lacking symptom review documentation, and 77% not specifying any management plan. Eight women took part in the telephone interview. Among them, five reported receiving inadequate information before discharge, and two indicated they would not have an epidural again due to their PDPH experience. To raise awareness among anaesthetic colleagues, the findings were disseminated through a departmental newsletter, and discussed in departmental clinical governance meetings and trainee teaching sessions. In addition, we also updated local PDPH follow-up guidelines in accordance with OAA standards.

Conclusion

PDPH can lead to considerable morbidity in new mothers. Our data underscored inconsistencies in follow-up practices for obstetric PDPH patients. A re-audit is currently in progress to ensure guideline adherence and improve PDPH patient management.

Reference

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Poster keywords

Obstetric anaesthesia, Post-dural puncture headache, Follow-up, Quality improvement, Acute pain

66

Implementation of a multimodal cancer prehabilitation service

Martyn White[1,2], Samantha Leggett[1,2], Lesley Hawkins[1,2,3], James Otto[1,2], Toran Williams[1,2], Gurinder Rayat[1,2], Melissa Cooper[1,2], Ester Acainas Davila[1,2], Imogen Fecher[1,2], Sally-Jane Kendell[1,2], Judit Varkonyi-Sepp[1,2,4], Lisa Poole[1], Mike Grocott[1,3], Malcolm West[1,5,2], Sandy Jack (Joint senior author)[1,2,3], Denny Levett (Joint senior author)[1,2,3]
[1]Perioperative and Critical Care Theme, NIHR Southampton Biomedical Research Centre, Southampton, Southampton, United Kingdom. [2]Critical Care, Anaesthesia and Perioperative Medicine Research Unit, University Hospital Southampton NHS Foundation Trust, Southampton, United Kingdom. [3]Clinical and Experimental Sciences, Faculty of Medicine, University of Southampton, Southampton, United Kingdom. [4]School of Health Sciences, University of Southampton, Southampton, United Kingdom. [5]School of Cancer Sciences, Faculty of Medicine, University of Southampton, Southampton, United Kingdom

Competition Track

EBPOM abstract competition

Abstract

Introduction: A multimodal prehabilitation service was implemented at University Hospital Southampton to improve surgical outcome by optimising functional capacity and health status pre-operatively (1).

Methods: Patients with cancer on colorectal, urology and upper gastrointestinal surgical pathways were referred between July 2022 and March 2023. Patients completed a digital health screening tool to assess functional capacity (fitness (DASI) and frailty (Edmonton)), nutritional status (nutrition risk score), psychological wellbeing (hospital anxiety and depression scale), and chronic health conditions in addition to modifiable lifestyle factors such as smoking and alcohol consumption. Patients were triaged using a Red-Amber-Green (RAG) risk rating system across each domain. All patients were offered universal prehabilitation interventions: surgery school seminar and a prehabilitation App MyOp which incorporates behavioural change support. Red/Amber patients underwent assessment (cardiopulmonary exercise testing (CPET), dietitian, psychologist) and prescribed tailored community/hospital based interventions (Figure 1).

A clinical escalation pathway for gym instructors to the prehabilitation team was established. Patients at high-risk of post-operative complications were reviewed in a shared decision-making (SDM) clinic.

Results: 197 patients (134 male) were referred (126 colorectal, 34 UGI, 26 urology), with a median age of 70.5 years [61.2 – 76 IQR]. 186 (94.4%) completed digital screening; 34 of these (17.3%) required digital advisor assistance. Ten patients' pathway changed and 1 declined prehabilitation. Table 2 shows the RAG ratings.

After screening 161 patients were assessed by the prehabilitation practitioner and prescriptions implemented, 17 were referred to the SDM clinic and 8 were removed from the pathway.

61 (37.8%) patients assessed were highlighted as Red/Amber in their exercise domain and underwent CPET. 4 (2.5%) received in hospital training, 1 (0.6%) was contraindicated and all others were eligible for targeted training in community gyms. No community adverse events were reported during exercise.

72 (44.7%) confirmed as Red/Amber risk for nutrition were referred for dietetic assessment. 48 (29.8%) screened as Red/Amber for wellbeing and were assessed by a nurse/clinical health psychologist with targeted referral to services.

To date 41 (25.5%) patients have undergone surgery with no on the day cancellations from medical unfitness.

Conclusion: We have demonstrated feasibility of implementing a multimodal prehabilitation service using early digital health screening and community-based exercise interventions. Early referral is essential to allow sufficient time for optimisation, however more data is required to evaluate clinical outcomes.

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Poster keywords

Prehabilitation, Screening, Assessment, Exercise, Pathway

67

Prehabilitation in Colorectal Cancer Patients: A Single-Center Retrospective Cohort Study on Outcomes and Hospital Costs

Charissa Sabajo[1,2], David ten Cate[1], Margot Heijmans[1], Christian Koot[1], Gerrit Slooter[1]
[1]Maxima Medical Center, Veldhoven, Netherlands. [2]University Medical Center Groningen, Groningen, Netherlands

Competition Track

EBPOM abstract competition

Abstract

Background: Prehabilitation, making patients fit before surgery, has shown to improve the functional capacity before surgery, reduce postoperative complications and length of stay.[1-7] Nonetheless, prehabilitation is still not standard of care. One reason is the lack of financial insight of the program. The aim of this retrospective study was to analyze clinical outcomes and the effects on hospital resources when implemented as standard of care. **Methods:** Patients that underwent elective colorectal surgery between January 2017 and March 2022 at the Máxima Medical Center, the Netherlands, were included. Depending on prehabilitation participation, patients were assigned to either the prehabilitation group or the no prehabilitation group. Clinical outcomes (hospital stay, 30-day postoperative complications, 30-day IC admission and readmission) were compared between the two groups. The savings were calculated from the difference in 30 day postoperative cost of care (all postoperative activities and treatments) between the two groups in relation to the costs of the prehabilitation program.
Results: In the prehabilitation group 196 patients were included and in the no prehabilitation group 390 patients. Less overall complications were seen in the prehabilitation group (31% vs 40%, p=0,04), as were severe complications (20% vs 31%, p=0.01). Length of stay was shorter for the prehabilitation group (IQR 3-6 vs 3-7, p=0,02). Cost savings in postoperative care were €1109 per patient while the cost of the prehabilitation program was €969 at the most. The calculated cost effectiveness demonstrates a saving of over €400 per patient including the cost of the prehabilitation program.
Conclusion: Prehabilitation decreased the number of postoperative complications and length of stay. The positive business case will hopefully support all stakeholders in implementing prehabilitation.

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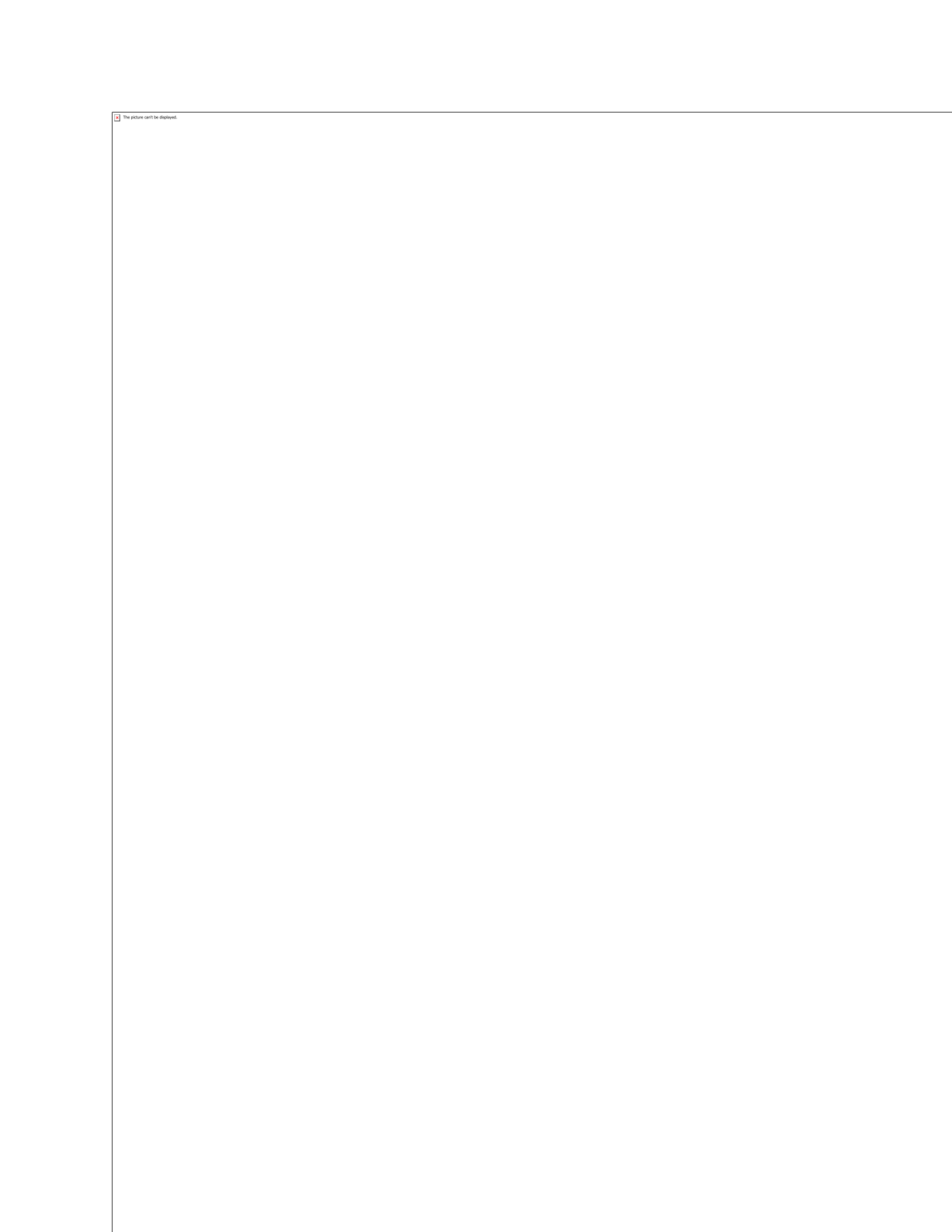
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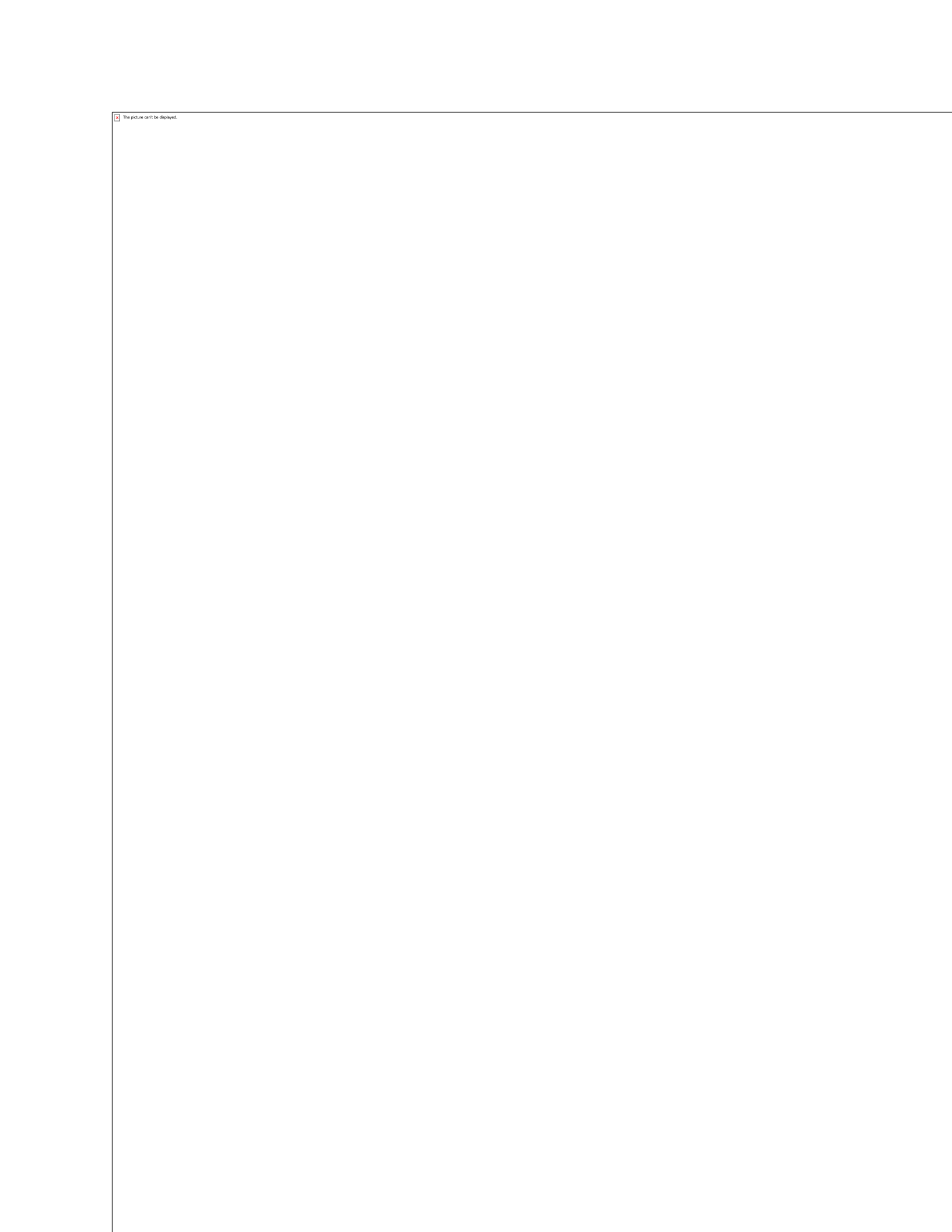
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Poster keywords

Prehabilitation, Businesscase, Finance, Clinical outcomes

68

Derived peak oxygen consumption and MET using DASI systematically overestimates fitness in patients undergoing preoperative assessment for cancer surgery compared to objective measures from CPET.

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Competition Track

EBPOM abstract competition

Abstract

Introduction:

Assessment of cardiorespiratory fitness is routinely carried out in the preoperative period. In centres where objective assessment of fitness e.g., cardio-pulmonary exercise testing (CPET) is not routinely performed alternative methods are recommended e.g., duke activity status index (DASI). This self-reported questionnaire equates physical activity scores to an associated metabolic equivalent of task (MET) and thus, oxygen consumption (VO_2). Previous research has suggested that the DASI correlates well with fitness and has predictive ability in the perioperative period(1). However, concerns exist regarding its predictive ability suggesting that self-reported functional capacity should not be used as a surrogate marker of peak VO_2(2). We hypothesised that subjective assessment of cardiorespiratory fitness using the DASI is sub-optimal when compared to CPET an objective measure.

Methods:

We retrospectively reviewed CPET data from December 2019 to February 2023 for all patients referred for CPET as part of their routine pre-assessment. CPET was performed in accordance with POETTS & ATS/ACCP guidelines and a DASI was carried out prior to CPET. Differences in objectively measured peak VO_2 measured from gas-analysis and predicted peak VO_2 derived from DASI questionnaire were compared. All analyses were performed using GraphPad Prism (v9.5.1), Shapiro-Wilk test was used to assess normality. Correlations were assessed using Spearman r and differences compared using Wilcoxon matched-pairs test and Bland-Altman analysis.

Results:

Six hundred and twenty-three patients were referred for CPET. Patient demographics are presented in Table 1. DASI derived peak VO_2 showed a moderate correlation ($r=0.53$, $p<0.0001$) and was significantly

different from peak VO_2 from CPET (28.9 ml/kg/min [21.9-34.6] vs 16.0 ml/kg/min [13.1-19.4], p<0.0001). DASI derived peak MET showed a moderate correlation (r=0.48, p<0.0001) and was significantly different from CPET peak MET (8.3 [6.3-9.9] vs 4.7 MET [3.9-5.8], p<0.0001).

Bland-Altman plots demonstrated poor agreement (Figure 1) between A) DASI derived VO_2 and CPET measured VO_2 along with B) DASI derived MET and CPET measured MET.

Conclusion:

Bland-Altman analysis demonstrates a large degree of bias; DASI consistently over-estimates markers of fitness as compared to objectively assessed gold-standards. Caution should be taken when using DASI derived fitness measures to inform patient care.

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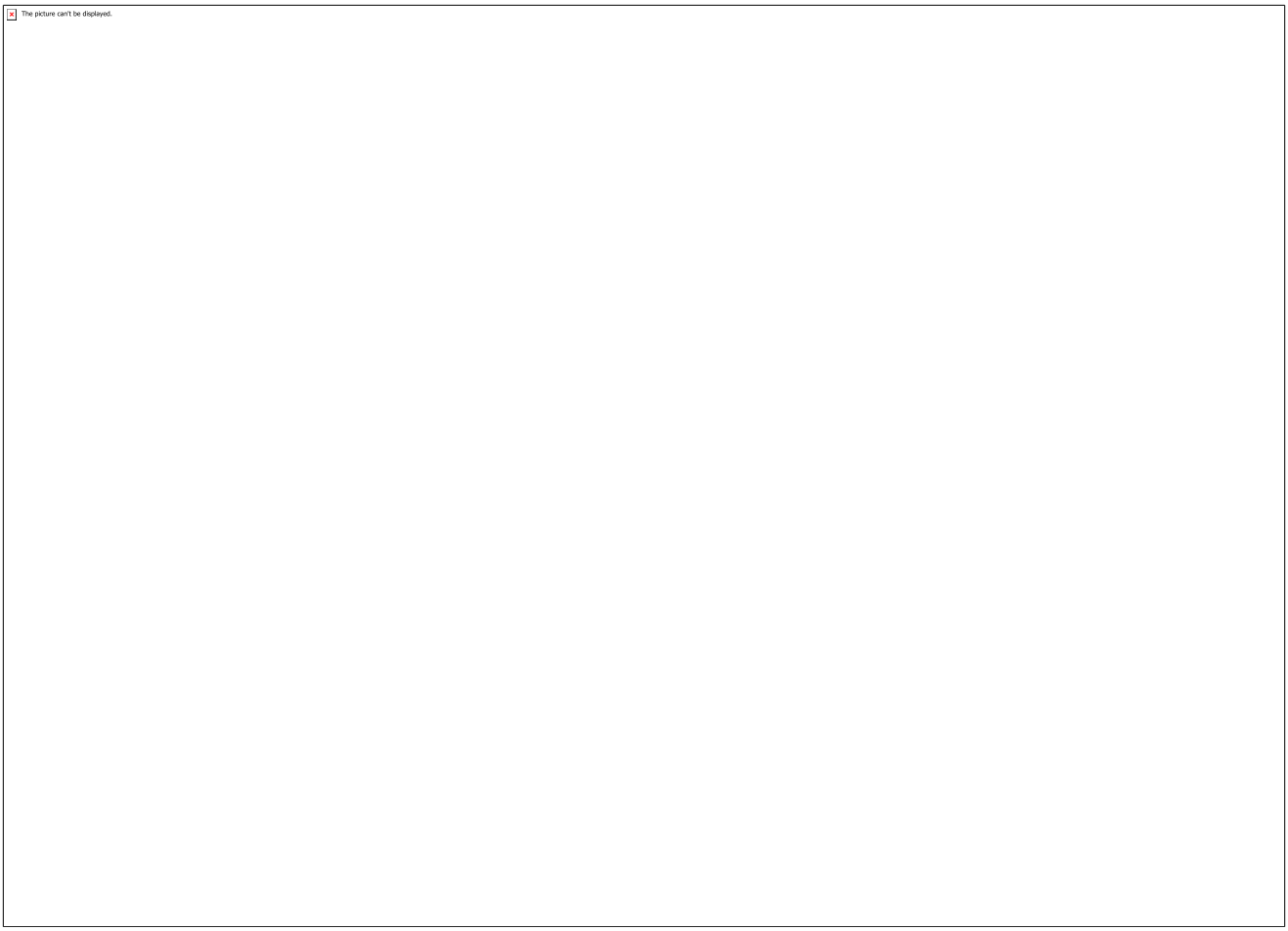

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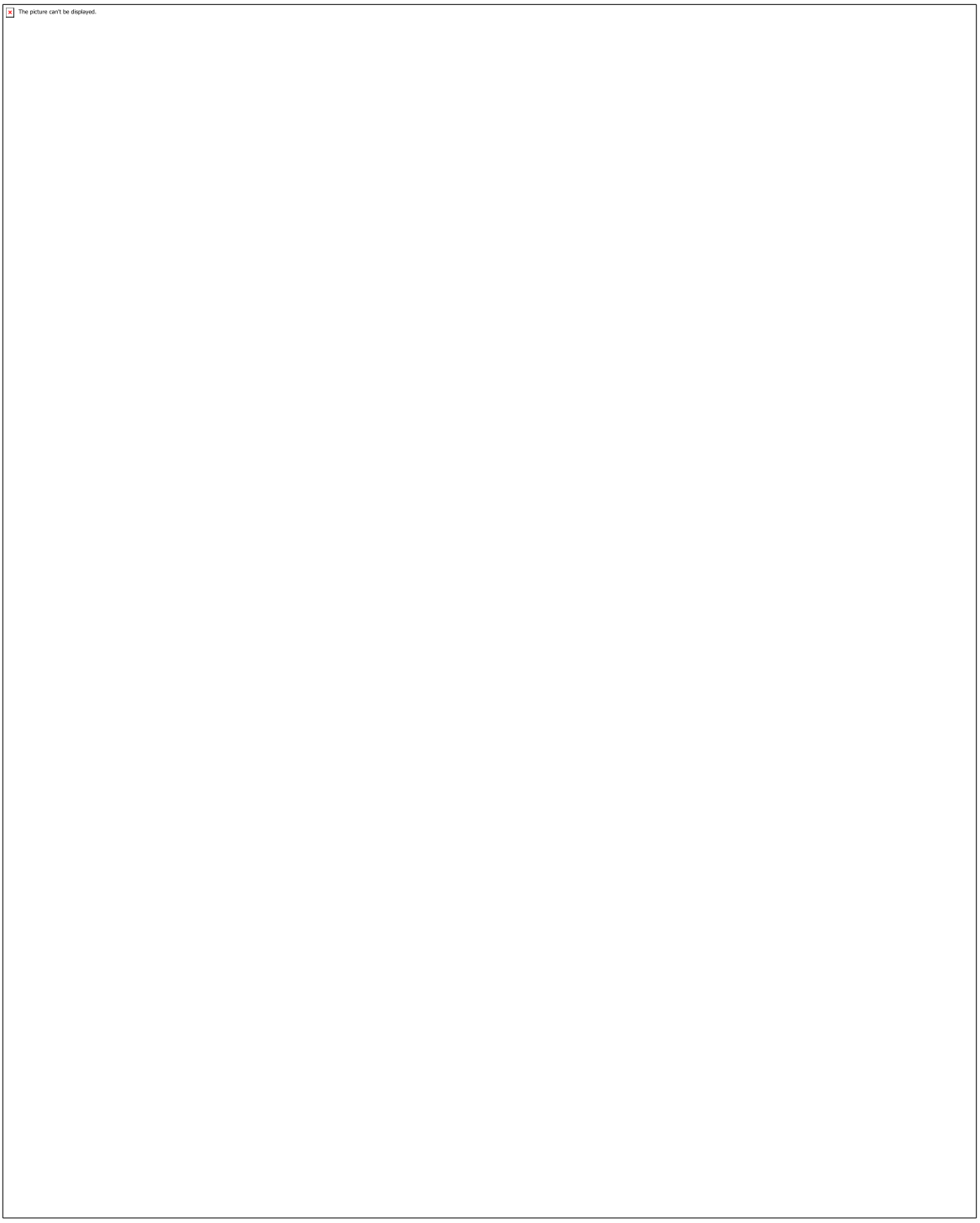

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Poster keywords

Fitness, CPET, DASI, MET, Questionnaire

69

Sex-specific thresholds in preoperative exercise testing are essential for the surgical risk prediction in major non-cardiac surgery: A post-hoc analysis of the METS study.

Bernhard Riedel[1,2], Jonas Alfitian[3], Tobias Kammerer[3], Hilmy Ismail[1], Robert Schier[3]
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Competition Track

iPOETTS abstract competition

Abstract

Introduction: The impact of sex-specific differences in medicine are increasingly the subject of current research [1]. Preoperative cardiopulmonary exercise testing (CPET) by cycle-spiroergometry holds prognostic relevance for postoperative complications [2]. However, sex-specific thresholds for predicting increased risk of postoperative complications have not yet been established. We therefore performed a post-hoc analysis of the prospective observational METS study [3] to evaluate if sex-specific thresholds of preoperative CPET-derived parameters improve the predictive power for postoperative complications.

Methods: Post-hoc analysis of the international METS study [3] investigated sex-specific differences of standardized preoperative CPET parameters in non-cardiac surgery patients (n = 1,270). Specifically, logistic regression models were built to determine the association of preoperative peak oxygen uptake (peak VO_2) with the primary endpoint of moderate-to-severe postoperative complications (Clavien-Dindo III-V) within the first 30 days after surgery. Separate risk prediction models were built for both sexes, and the optimal sex-specific peak VO_2 threshold for predicting postoperative complications was identified by maximizing the Youden index for ROC curves. Finally, multivariable regression models (adjusted for age and surgery type) were fitted to include reduced peak VO_2 as a predictor either with the established threshold (4 METS, 14 $mL \cdot kg^{-1} \cdot min^{-1}$) or with the calculated sex-specific thresholds. Both models were validated via bootstrapping (2,000 runs). Test performance was determined via C-statistics and net reclassification improvement index (NRI) and compared with the baseline model (age and surgery type).

Results: 1,270 patients underwent standardized preoperative CPET. Females (n = 481; complication rate 10%) had a lower mean (SD) peak VO_2 than males (n = 789; complication rate 15%), specifically 16.7 (4.9) vs. 21.2 (6.5) $mL \cdot kg^{-1} \cdot min^{-1}$ ($p < 0.001$). The optimal threshold for predicting postoperative complications was 12.5 $mL \cdot kg^{-1} \cdot min^{-1}$ for females and 17.7 $mL \cdot kg^{-1} \cdot min^{-1}$ for males, respectively. The non-sex-specific threshold of 4 METS did not associate with the primary endpoint, while sex-specific thresholds did (OR 1.95; 95%CI: 1.36 - 2.78; $p < 0.001$). The AUC of the ROC curve of the sex-specific model was higher compared to the non-sex-specific model (0.71 vs. 0.69; $p = 0.024$). Relative to the

baseline model, the sex-specific model classified 32% of patients more correctly for postoperative complications (NRI = 0.32; 95%CI: 0.15 - 0.46; $p < 0.001$) compared to 7% in the non-sex-specific model (NRI = 0.07; 95% CI: 0.05 - 0.19; $p < 0.001$).

Conclusion: Our data reports on sex-specific differences in preoperative CPET-derived parameters. The predictive power of preoperative peak VO_2 for risk of postoperative complications increases when sex-specific thresholds are applied. Therefore, sex-specific thresholds should be considered in preoperative risk stratification and considered in perioperative decision making for prehabilitation, access to surgery, and postoperative destination planning.

Acknowledgements: This study was conducted on behalf of the METS study group. Bernhard Riedel and Jonas Alfitian share a first authorship.

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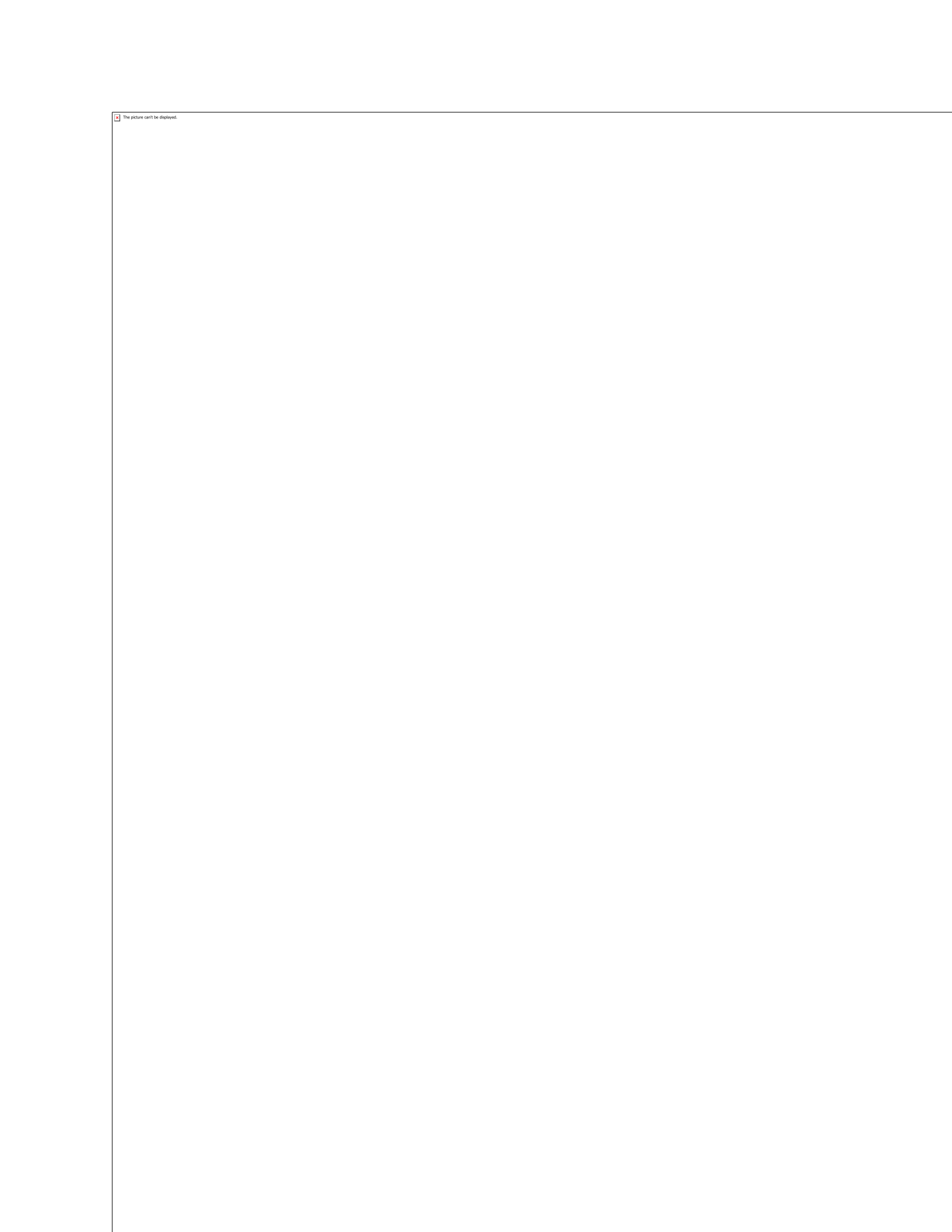
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Poster keywords

Cardiopulmonary exercise testing, gender medicine, postoperative complications, risk stratification, peak oxygen uptake

70

PreCog: Exploring the Impact and Expression of Pre-treatment Cancer Related Cognitive Impairment in Patients to Support Postoperative Cognitive Function: Study Protocol

Aideen Scriney[1], Lisa Loughney[2], Pamela Gallagher[1], Lorraine Boran[1]
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Competition Track

iPOETTS abstract competition

Abstract

Introduction: Approximately 10-30 % of cancer patients can experience cancer related cognitive impairment (CRCI) impacting their cognitive function pre-treatment or surgery. Currently, very little is known about the aetiology, prevalence or development of this issue [1].Furthermore, methods for the measurement of CRCI, (both objective and subjective) don't correlate. Much research to date pertains also to breast cancer research [1,2], and little is known about potential interventions such as prehabilitation approaches to alleviate symptoms. This study aims to explore CRCI within this rare cancer cohort as they engage with a prehabilitation programme. Patients will be those with a rare cancer type known as peritoneal malignancy which affects the peritoneum, and often requires an invasive surgical procedure known as CRS-HIPEC, and possible chemotherapy treatments.

Methods: Fifty patients with peritoneal malignancy scheduled for CRS-HIPEC are being recruited to a single blind randomised controlled trial in the Mater Misericordiae University Hospital, Dublin. Patients are randomised (1:1) to either care as usual or intervention (bimodal prehabilitation - exercise and nutrition). Intervention patients receive individualised exercise and nutrition structured programmes pre- and post-surgery (pre-surgery: in the time window available >2 weeks and post-surgery for 6 weeks). Interventions can be community based or remote, based on individual patient requirements. Patients are assessed at five timepoints: baseline, pre-surgery, post- surgery (when deemed clinically fit), 6 weeks later and 6 months later. Outcomes include, health related quality of life questionnaires (Euro Qol EQ5D, FACT-G), subjective cognitive function (FACT-Cog) ,qualitative experience via semi-structured interviews and self-efficacy (GSE, CRSE). During the 6 month follow-up assessment, patients will also take part in an objective test of overall cognitive function (MoCA).

Conclusion: Recruitment is currently ongoing as of May 2023. It is hoped that this study will increase our understanding of this under researched area of cancer related cognitive impairment, whilst also providing valuable evidence for the benefits of a bimodal prehabilitation program within a rare cancer cohort.

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Poster keywords

Cancer, Cancer Related Cognitive Impairment , Prehabilitation, Exercise, Nutrition

71

A physiotherapy based prehabilitation programme for patients awaiting liver transplant in Scotland: A pilot study.

Aubrey McCallum
Scottish Liver Translant Unit, NHS Lothian, Edinburgh, United Kingdom

Competition Track

iPOETTS abstract competition

Abstract

Introduction

Sarcopenia and frailty are significant predictors of increased waiting-list mortality and poor post operative outcomes for patients awaiting liver transplantation. There is growing evidence in the literature on the benefits of prehabilitation as a measure to mitigate these factors and so potentially improving outcomes. Physiotherapy services on the Scottish Liver Transplant Unit (SLTU) have historically focused resources on postoperative rehabilitation however in 2022 funding was granted to allow commencement of a one-year pilot project. The aim was to 'Assess the benefit of introducing a physiotherapy led, patient centred prehabilitation model to patients awaiting liver transplant in Scotland'

Methods

A purposive sample of patients listed for transplant on the SLTU were identified by clinicians on the unit. A total of 74 patients were recruited and consented to participate by the lead author (A McC). 85% of these patients (n=63) were found to be either pre-frail or frail according to the liver frailty index (LFI) and offered a bespoke, physiotherapy led home based exercise programme (HBEP). 60/63 patients consented to participate in the pilot (3 declined due to lack of engagement). A total of 30 patients* were followed up at their routine clinic appointment a mean of 16 weeks post listing and prehabilitation commencement and their LFI score was re-measured.

** Follow up participant demographics: n=30, mean age 56.5, Pathology: NAFLD cirrhosis 20%, ALD cirrhosis 27%, ALD/NAFLD 10%, PSC cirrhosis 27%, PBC cirrhosis 13%, Budd Chiari 3%.*

Results

19 patients improved their LFI score, 3 remained static and 8 experienced a deterioration in LFI* See figure 1 - uploaded

** The patients who experienced deterioration in their LFI scores sufferred with acute disease progression and/or symptom escalation in the period from initial assesment to clinic review. All reported this made participation in the programme difficult.*

Conclusion

Home based exercise delivered by physiotherapists may be a useful therapy to reduce frailty in patients on the liver transplant waiting list however further, larger scale studies are needed.

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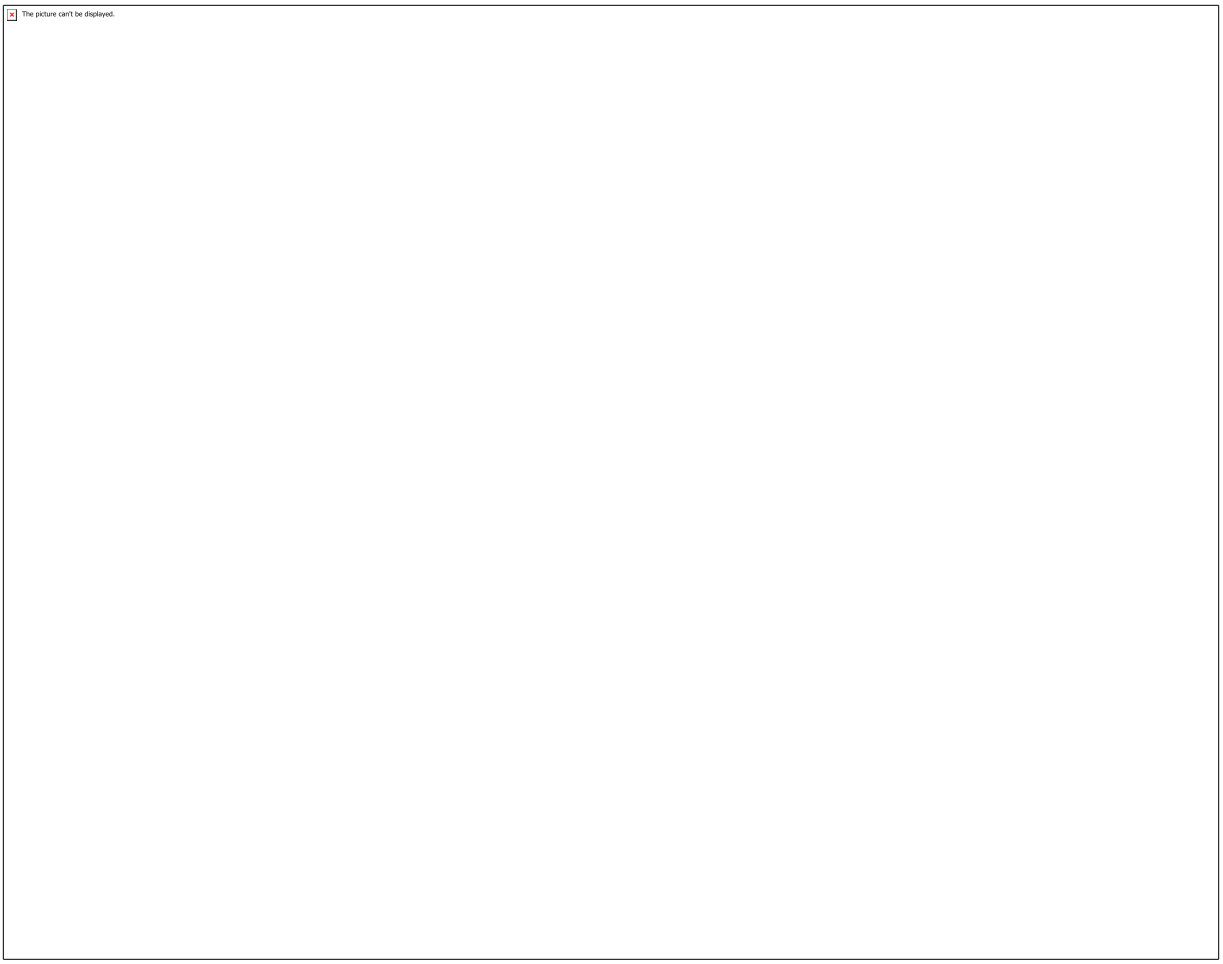

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Poster keywords

Prehabilitation, Frailty, Physiotherapy, Transplant, Exercise

72

Perioperative Exercise and Nutrition Optimisation Prehabilitation in Cancer Patients Requiring Cytoreductive Surgery and Hyperthermic Intraperitoneal Chemotherapy (PANO)

Lisa Loughney[1], Aideen Scriney[2], Shauna Malone[2], Pamela Gallagher[2], Claire M. Timon[3], Jan Sorensen[1], Alex Eustace[4], Denis Collins[4], Noel McCaffrey[5], Oonagh Staunton[6], Jurgen Mulsow[6], Lorraine Boran[2]
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Competition Track

iPOETTS abstract competition

Abstract

Introduction: Peritoneal malignancy includes tumours of primary abdominal and non-abdominal origin[1] such as ovarian, pancreatic, colorectal and the appendix.Treatment can include cytoreductive surgery (CRS) with heated intraperitoneal chemotherapy (HIPEC). Individuals who undertake a prehabilitation programme from the point of diagnosis can improve their physical fitness levels and promote psychological resilience[2]. However, the optimal model of delivery for perioperative exercise and nutrition for this cohort merits investigation. The PANO trial aims to assess the feasibility and effectiveness of a bi-modal prehabilitation programme compared to usual care in people with peritoneal disease scheduled for cytoreductive surgery and hyperthermic intraperitoneal chemotherapy (CRS-HIPEC).

Methods: The PANO trial is a single-centre feasibility RCT which aims to recruit 50 participants scheduled for CRS-HIPEC. Participants will be randomly assigned to a prehabilitation group (hybrid offering of Perioperative exercise And Nutritional Optimisation (PANO) either face-to-face/remote at home), or a usual care control group. Assessments will be completed at baseline, following the pre-surgical intervention, when deemed clinically fit following surgery (approximately 6 weeks post-surgery), and following the post-surgical intervention. Participants assigned to the intervention group will complete an exercise programme prescribed by ExWell Medical and nutrition programme prescribed by the dietetics department in the Mater Hospital(MMUH).

Primary aims are to investigate feasibility (compliance and adherence) and effects of PANO compared to usual care on physical fitness pre-operatively measured using the 6-Minute Walk Test. Measures of strength, activity behaviour monitoring, Psychological Stress and Wellbeing (PSW), health-related quality of life, self-efficacy, cognitive function, nutrition, inflammatory biomarkers associated with change in physical fitness and PSW post-operatively, assessments of clinical health by post-operative morbidity,

hospital length of stay and cost-effectiveness will be captured.Exploration of qualitative patient experience will also occur.

Conclusion: The PANO trial proposes to integrate prehabilitation from the point of cancer diagnosis to optimise physical, nutritional and psychological health for people with peritoneal disease which may translate to better patient outcomes. Evidence from the PANO Trial will inform the prescription of prehabilitation, thus inform and improve patient care for patient's scheduled for a HIPEC procedure, as well as the design of a larger definitive trial. Recruitment for this study commenced in August 2022

Trial Registration: ClinicalTrials.gov
NCT05305820 https://clinicaltrials.gov/ct2/show/NCT05305820?term=PANO&draw=2&rank=1

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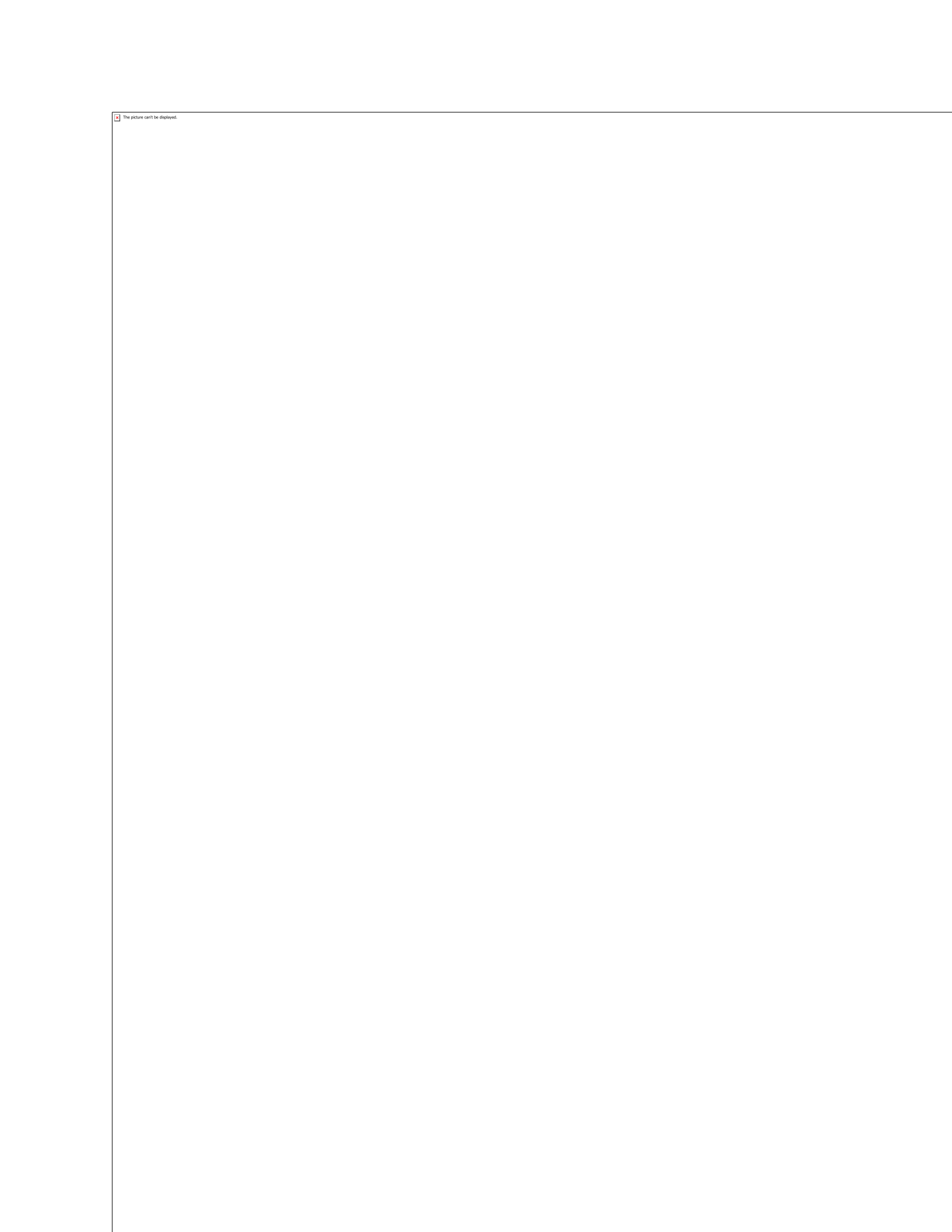
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Poster keywords

Prehabilitation, Exercise, Nutrition , Perioperative , Peritoneal Malignancy

73

Patient Experiences of Wellbeing and Cancer Related Cognitive Impairment during a Bimodal Cancer Prehabilitation Programme: Preliminary Findings

Aideen Scriney[1], Lisa Loughney[2], Pamela Gallagher[1], Lorraine Boran[1]
[1]School of Psychology, Dublin City University, Dublin, Ireland. [2]Royal College of Surgeons in Ireland, Dublin, Ireland

Competition Track

iPOETTS abstract competition

Abstract

Introduction: Cancer patients with peritoneal malignancy who are undergoing CRS-HIPEC procedures are under considerable physical and psychological stresses [1]. Bimodal nutrition and exercise prehabilitation offers an intervention for patients to engage in to potentially protect against these treatment related stressors [2]. Research also indicates that some cancer patients can experience cognitive issues known as Cancer Related Cognitive Impairment (CRCI) [3], which is also under-researched within this cohort. A qualitative approach allows for the experiences of these rare cancer patients to be understood whilst interacting with a feasibility prehabilitation trial both prior to surgery, and during recovery.

Methods: Fifty patients will be recruited from the national centre for peritoneal malignancy at the mater hospital. Patients who are scheduled for CRS-HIPEC are randomised to either a care as usual or bimodal prehabilitation intervention condition. As part of a larger trial, patients are interviewed in the days leading up to surgery, and when they complete the intervention approximately 6 weeks later and finally 6 months later. Topic guides for interviews were created alongside a public patient involvement panel. Pre-Operative Themes explored included: Experiences of Exercise and Nutrition, Perceptions of Surgery, Cognitive Health and Health Behaviour Change.

Results: Currently, the data of 10 patient pre-operative interviews have been analysed (Five Intervention Condition, Five Control Condition). Braun and Clarke's six step thematic analysis approach was used to analyse the preliminary pre-operative interview data for relevant themes. Average intervention duration was 17 minutes and interviews took place on average three days prior to surgery. Four themes with sub themes emerged: 1. Thinking about Cognition, 2.Intervention Experiences, 3. Autonomy, 4. Emotional Conflict. Differences between control and intervention groups for relevant themes were also explored.

Conclusion: These preliminary findings will aid in our understanding of the experiences of patients undergoing this invasive procedure while taking part in a prehabilitation programme.

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Poster keywords

Prehabilitation, Qualitative, Patient Experience, Cancer Related Cognitive Impairment, Exercise

74

CONSUMER PERSPECTIVES ON THE ADOPTION OF A PREHABILITATION MULTIMODAL ONLINE PROGRAM FOR PATIENTS UNDERGOING CANCER SURGERY

Daniel Steffens[1,2,3], Linda Denehy[4,5], Michael Solomon[1,2,3,6], Cherry Koh[1,2,3,6], Nabila Ansari[1,3,6], Kate McBride[1,3], Sharon Carey[1,2,3,7], Ruby Cole[1], Aaron Sean Lawrence[1], Kym Sheehan[1], Kim Delbaere[8,9]
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Competition Track

EBPOM abstract competition

Abstract

Introduction

This study aimed to explore patients' perspectives on the adoption of a prehabilitation multimodal online program.

Methods

Patients recovering from gastrointestinal cancer surgery at a tertiary hospital between October 2021 and November 2022 were invited to participate. An e-Health exercise program previously designed for falls prevention in people aged >60 years was modified to include higher intensity exercises, nutrition and psychological counselling and used in the present cohort. Consenting patients were instructed to navigate the e-Health program over 24 hours using an iPad and then complete the study survey. Patients' characteristics, use of technology, views and minimal expected outcomes from a preoperative online program were summarised and described descriptively.

Results

A total of 30 patients were included. Most of the patients were female, reported confidence in the use of technology, considered the online program safe, and agreed it would be beneficial for their health. 'Poor preoperative health' and 'lack of motivation and encouragement' were identified as the main barriers to the uptake of a preoperative online program, while program 'simplicity' and perceived

‘benefits’ were the main facilitators. Significant improvement in postoperative outcomes is perceived to influence patients’ willingness to participate in a preoperative multimodal e-Health program.

Conclusions

Gastrointestinal cancer patients perceived the adoption of a preoperative multimodal e-Health application as safe and beneficial to one’s health. A range of patient’s characteristics, barriers, and facilitators to the uptake of an online program were identified. These should be considered in future preoperative multimodal online programs to enhance patient experience, adherence, and efficacy.

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Poster keywords

Prehabilitation, Cancer, Surgery, Consumer, Views

75

Multimodal Prehabilitation and Postoperative Pulmonary Complications in Frail Surgical Oncology Patients

Atiya Dhala, Linda Moore
Houston Methodist Hospital, Houston, USA

Competition Track

EBPOM abstract competition

Abstract

INTRODUCTION

More than four of ten adults over 60 years will undergo intra-abdominal surgery during their lifetime, with 30% of those patients expected to experience complications including postoperative pulmonary complications (PPCs: pneumonia, unplanned intubations, and ventilator >48 hours postoperatively).[1,2] Cancer patients undergoing complex surgeries are likely to be frail, sarcopenic, and malnourished (FSM), leading to a high prevalence of PPCs. Our large quaternary care hospital's standardized multimodal prehabilitation program (MMP) bundles physical, nutrition, cognitive behavioral, and anemia management strategies to prepare patients for the rigors of complex surgery. Early identification of FSM and MMP intervention improves patients' fitness for surgery, reducing PPCs and length of stay.

METHODS

Patients undergo MMP 2-8 weeks before surgery in these four steps (Figure1):

1. The surgeons Screen for frailty and sarcopenia.
2. Four teams Assess the patient: physical therapy, nutrition, psychosocial and blood conservation.
3. Personalized Intervention:
    1. Physical therapy - patients training and conditioning (45-60 minutes, 2-3 days per week), and an Inspiratory Muscle Trainer (IMT) for diaphragmatic exercises.
    2. Nutritional plan - determine caloric needs and provide nutrient-based dietary plans.
    3. Anemia management - treatment for iron deficiency, if required.
    4. Psychosocial protocol - cognitive-behavioral therapy, mindfulness exercises to promote self-efficacy, deep breathing, and relaxation skills.
4. Clinicians Reassess the patient the week before surgery.

RESULTS

From 06/2021 to 12/2022, the MMP program has seen 89 cancer patients (29 esophageal, 26 HPB, 5 gastric, 5 colon, 4 retroperitoneal, and 3 HIPEC with 17 forgoing the surgery). A blinded assessor analyzed outcomes data for a random sample of MMP patients who were matched with controls.

Hepatopancreaticobiliary surgery patients who went through MMP experienced a lower actual average length of stay (ALOS) vs controls, as well as decreased average ICU days vs controls. These patients also had zero incidence of PPCs during the study period. Similar results of lower ALOS and zero PPCs were observed in the other cancer patients in the MMP program (Table 1).

CONCLUSION

Prehabilitation intervention is scalable with the potential to improve outcomes in a wider variety of elective complex surgeries. MMP program improves patient safety through reduction of postoperative complications and ALOS.

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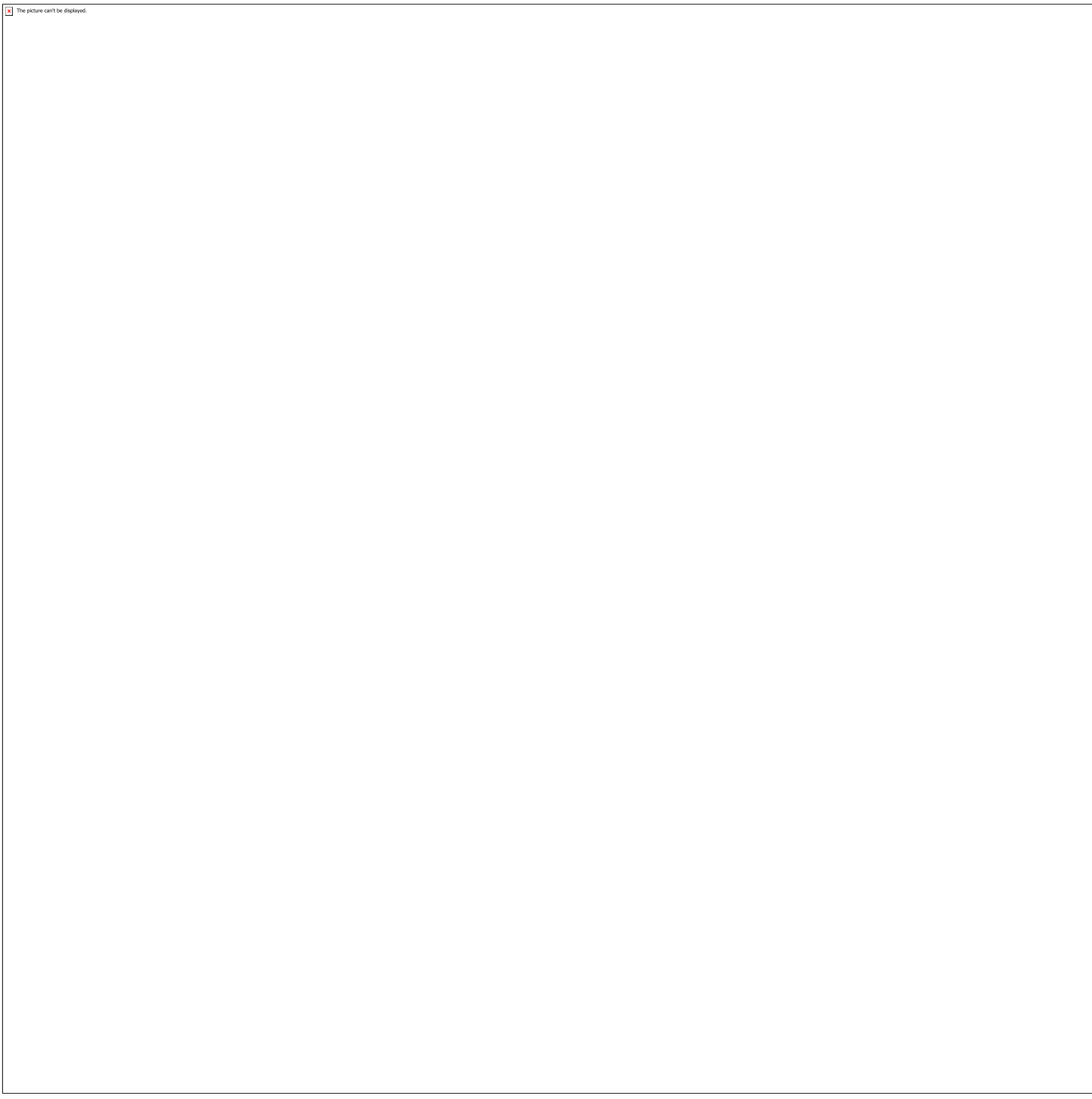

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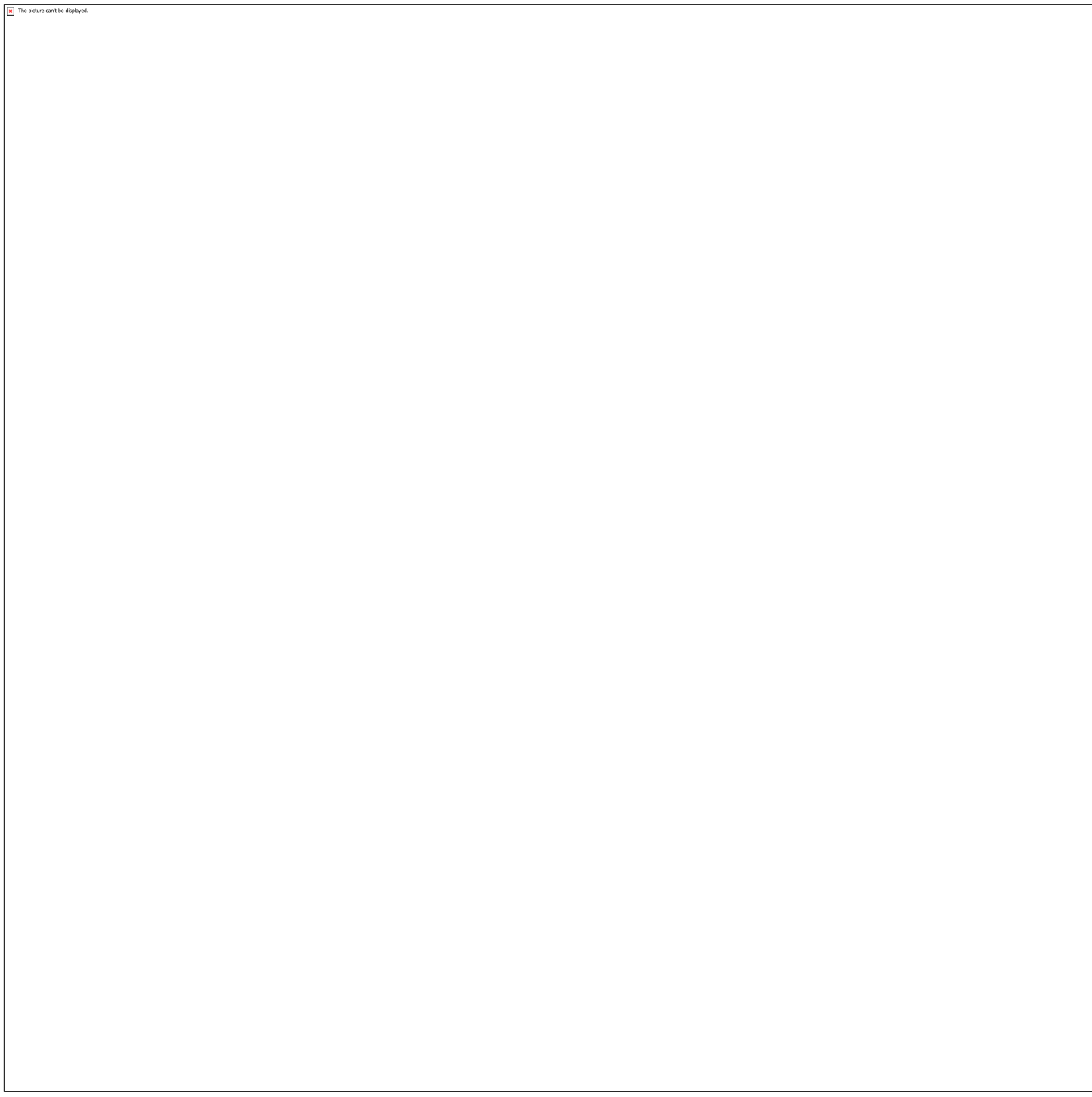

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Poster keywords

prehabilitation, hepatopancreaticobiliary, frailty, postoperative, complications

76

PREOPERATIVE EXERCISE AND EDUCATION FOR PATIENTS UNDERGOING MAJOR ABDOMINAL CANCER SURGERY

Daniel Steffens[1,2], Jane Young[1], Bernhard Riedel[3], Rachael Morton[2,4], Linda Denehy[5], Alexander Heriot[3,5], Cherry Koh[1,2], Qiang Li[6], Adrian Bauman[2,7], Charbel Sandroussi[1,2], Hilmy Ismail[3,5], Mbathio Dieng[2,4], Nabila Ansari[1], Neil Pillinger[1,2], Derek Cunningham[8], Gino Iori[8], Kym Sheeham[8], Sarah O'Shannassy[9], Sam McKeown[3], Ruby Cole[1], Michael Solomon[1,2]
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Competition Track

EBPOM abstract competition

Abstract

Introduction

This multi-centre randomised control trial aims to study the effectiveness of a progressive, individualised preoperative exercise and education program compared to usual care in reducing the proportion of patients with postoperative in-hospital complications. Secondarily, it aims to investigate whether the exercise and education program reduces intensive care and hospital length of stay, improves the quality of life outcomes and is cost-effective compared to usual care.

Methods

The trial will recruit 172 participants from the Royal Prince Alfred Hospital and Chris O'Brien Lifehouse, Sydney and Peter MacCallum Cancer Centre, Melbourne. Participants will be adults aged 18 to 80 years and undergoing Pelvic Exenteration, Cytoreduction, Oesophagectomy, Pancreatectomy, Hepatectomy or Gastrectomy surgery for cancer. Participants will provide consent and complete a baseline assessment before being randomised into either the preoperative exercise and education program (Intervention) or usual care (Control) group using a permuted block randomisation with 1:1 allocation.

Participants will be followed up until 3 months postoperative (Figure 1). The intervention group will complete a preoperative exercise and education program for 4 - 8 weeks close to the participants' home before undergoing scheduled surgery. The control group will complete usual care provided by the treating team, consisting of nutritional counselling and advice on smoking cessation and reduction of alcohol (Figure 2). Data will be collected from electronic medical records and participant self-completed assessments.

Results

Participant recruitment commenced in June 2021, and 121 patients have been recruited thus far. These include 54 (44%) females and 68 (56%) men, with an average age of 57 (27-78). 63 (52%) patients underwent Cytoreduction surgery, 27 (22%) Pelvic Exenteration, and 31 (26%) procedures for Upper GI cancer. Data analysis will be blinded and conducted on the primary and secondary outcomes once all participants have completed the last assessment timepoint.

Conclusions

If successful, the preoperative exercise and education intervention would not only improve patient outcomes but also could substantially reduce health care costs.

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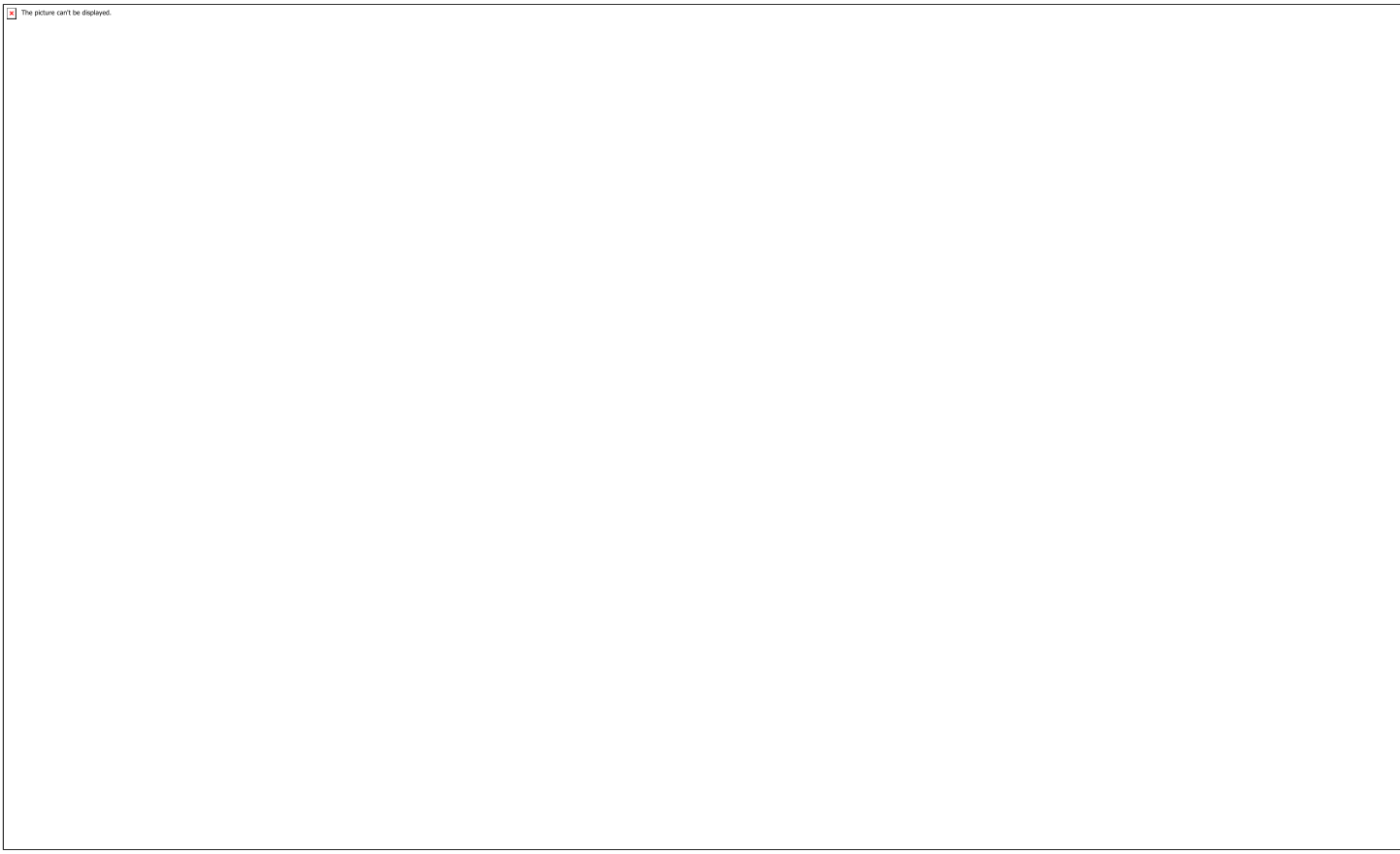

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Prehabilitation, Cancer, Exercise, Surgery, Preoperative

77

RESEARCH PRIORITIES IN PREHABILITATION FOR PATIENTS UNDERGOING CANCER SURGERY – AN INTERNATIONAL DELPHI STUDY

Pratik Raichurkar[1], Linda Denehy[2,3], Michael Solomon[1,4,5,6], Cherry Koh[1,4,5,6], Neil Pillinger[1,7], Sophie Hogan[4,8], Kate McBridge[1,4], Sharon Carey[1,4,5,8], Ruby Cole[1], Nicholas Hirst[1], Daniel Steffens[1,4,5]
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Competition Track

EBPOM abstract competition

Abstract

Introduction

Recently the number of prehabilitation trials has increased significantly. The identification of key research goals is vital in guiding future research directions. Thus, the aim of this collaborative study was to define key research priorities in prehabilitation for patients undergoing cancer surgery.

Methods

The Delphi methodology was implemented over three rounds of surveys distributed to prehabilitation experts from across multiple specialties, tumour streams and countries via a secure online platform. In the first-round participants were asked to provide baseline demographics and to identify five top prehabilitation research priorities. In successive rounds, participants were asked to rank research priorities on a 5-point Likert scale. Consensus was considered if >70% of participants indicated agreement on each research priority.

Results

A total of 165 prehabilitation experts participated, including medical doctors, physiotherapists, dieticians, nurses, and academics across four continents. The first round identified 446 research priorities, collated within 75 unique research questions. Over two successive rounds, a list of 10 research priorities reached international consensus of importance. These included the efficacy of prehabilitation on varied postoperative outcomes, benefit to specific patient groups, ideal program composition, cost-

efficacy, enhancing compliance and adherence, effect during neoadjuvant therapies and modes of delivery.

Conclusions

This collaborative international study identified the top ten research priorities in prehabilitation for patients undergoing cancer surgery. The identified priorities inform research strategies, provide future directions for prehabilitation research, support resource allocation and enhance the prehabilitation evidence base in cancer patients undergoing surgery.

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Prehabilitation, Experts, Cancer, Surgery, Research priorities

78

Prediction of Postoperative Hypotension After Major Surgery by Anaesthetists (PHASMA)

Ji Ting Li[1,2], Jai Darvall[1], Kate Leslie[1], Ned Douglas[1]
[1]Royal Melbourne Hospital, Melbourne, Australia. [2]Monash University Public Health and Preventive Medicine, Melbourne, Australia

Competition Track

EBPOM abstract competition

Abstract

Postoperative hypotension is common and associated with higher risk of postoperative complications and mortality, but its aetiology is still not well understood.[1] Clinicians categorise the causes of hypotension into four classes: hypovolaemia, pump failure, vasodilation and obstruction. Accurate prediction is important as anaesthetists will treat with different interventions including fluid boluses, inotropes and vasopressors[2] depending on presumed aetiology, which may cause significant side effects if applied incorrectly. Many of these therapies require admission to ICU, which requires identifying high-risk patients to allow optimal use of resources. There are known risk factors associated with postoperative hypotension on which anaesthetists can base their prediction.[3] Anaesthetists may be best placed to identify this risk, yet there are no published studies on the ability of anaesthetists to predict postoperative hypotension for patients undergoing general anaesthesia for major surgery.

This study aims to determine if anaesthetists can predict the development of postoperative hypotension in a group of high-risk patients. Additionally, it will determine the ability of anaesthetists to predict the need for a MET call or ICU admission at various time points (in PACU, and within the first 24 or 48 hours postoperatively), plus the underlying cause of hypotension.

A prospective cohort study is being conducted at the Royal Melbourne Hospital, Australia, enrolling anaesthetists caring for patients at high risk of postoperative hypotension (defined as those having major procedures of at least 1 hour's duration, aged >50 years and prescribed two or more antihypertensive medications). Patients having cardiac surgery or who were hypotensive or receiving vasopressor or inotrope therapy preoperatively will be excluded. The abstract will report the first 50 cases enrolled in the study.

The ability of anaesthetists to predict postoperative hypotension is important, as it influences decisions to refer patients for ICU admission, and prevent complications caused by hypotension. Quantifying the ability of anaesthetists to predict postoperative hypotension can assist in refining systems of care for patients.

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Poster keywords

Hypotension, Anaesthetist prediction, Major surgery, Perioperative care, High-risk patients

79

PATIENTS' AND CARERS' VIEWS ON RESEARCH PRIORITIES IN PREHABILITATION FOR CANCER SURGERY

Jennifer Vu[1,2], Cherry Koh[1,2,3,4], Michael Solomon[1,2,3,4], Sasha Karunaratne[1,2], Ruby Cole[1], Pratik Raichurkar[1], Kilian Brown[1], Phillippa Smith[1,4], Daniel Steffens[1,2,3]
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Competition Track

EBPOM abstract competition

Abstract

Introduction

The views of patients and carers are important for the development and conduct of research priorities. However, research in prehabilitation is mostly conceptualised without their views. Thus, the aim of this cross-sectional study was to determine the top research priorities in prehabilitation according to cancer patients and/or their carers.

Methods

This cross-sectional study surveyed patients recovering from cancer surgery at a major tertiary hospital in Sydney, Australia and/or their carers between March 2023 and May 2023. Patients were eligible if aged 18 years or over and recovering from cardiothoracic, upper gastrointestinal, or colorectal cancer surgery. Patients and carers were provided a list of top research priorities in prehabilitation which achieved consensus as high importance by a multidisciplinary prehabilitation expert group through a recent international Delphi study. Patients and carers were asked to rate the importance of each research priority using a 5 item Likert scale (1=very high research priority; 5=very low research priority). Additional research priorities were added as per patients and carers suggestions. Differences in research priorities between experts, patients and carers were determined by chi-squared test or Fisher's Exact test.

Results

A total of 35 patients and 16 carers have participated to date. The top three research priorities that reached consensus of high importance (>70% rated as "high or very high research priority") by patients were the effect of prehabilitation on patient reported outcomes (86%), the effect of prehabilitation on

surgical outcomes (80%) and the effect of prehabilitation on functional outcomes (74%). Four research priorities achieved mutual agreement of highest importance by experts, patients, and carers. These were the effect of prehabilitation on surgical outcomes (96% vs 80% vs 81%), optimal composition of prehabilitation programs (88% vs 71% vs 94%), the effect of prehabilitation on patient reported outcomes (79% vs 86% vs 88%), and the effect of prehabilitation on functional outcomes (81% vs 74% vs 94%). Priorities that reached consensus of highest importance by experts but not patients included identifying populations most likely to benefit from prehabilitation (90% vs 60% vs 81%) and defining prehabilitation core outcome measures (86% vs 51% vs 69%).

Conclusions

This study compared the top prehabilitation research priorities of experts, patients, and carers. Four research priorities achieved mutual consensus of high importance by experts, patients, and carers. This information informs future directions for prehabilitation research and supports resource allocation to enhance the prehabilitation evidence base for cancer patients undergoing surgery.

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Poster keywords

Prehabilitation, Cancer, Surgery, Research priorities, Consumers

80

Predictive Values of Microcirculatory Parameters in Major Vascular Surgery

Ji Ting Li[1,2], Jai Darvall[1], Kate Leslie[1], Ned Douglas[1]
[1]Royal Melbourne Hospital, Melbourne, Australia. [2]Monash University Public Health and Preventive Medicine, Melbourne, Australia

Competition Track

EBPOM abstract competition

Abstract

The microcirculation plays an important role in perfusing local tissue, and consists of blood vessels that measure <100 μm. It can be damaged by common processes such as inflammation and hypoxia.[1] Microcirculatory dysfunction has been identified in patients undergoing major general and cardiac surgery[2] and septic shock, and is associated with increased postoperative complications including ICU admission and death.[3]

Side-stream dark field (SDF) microscopy is a technology that can measure microcirculatory function[1]. However, the microcirculatory parameters that constitute dysfunction on point of care testing remain unclear, with existing studies defining dysfunction as a significant change in measurements pre and post-operation.

This study aims to identify relevant threshold values of microcirculatory parameters that are associated with greater risk of hypotension. It will also determine the strongest performing parameter, and its association with the development of other complications, including mortality, return to theatre and the need for MET call or ICU admission during the first 48 hours postoperatively.

This is a single centre prospective observational cohort study conducted at the Royal Melbourne Hospital, Victoria, Australia. It will enrol patients aged ≥18 years having major vascular under general anaesthesia plus >2 variables placing them at a high risk of postoperative hypotension (age >65 years, preoperative hypotension, use of antihypertensive medications, revised cardiac index ≥3 and undergoing major surgery). Investigators will obtain microcirculatory parameters using sublingual SDF microscopy in the post anaesthesia care unit, and follow up outcomes using the electronic medical record. The abstract will present findings from the first 20 participants analysed.

This study seeks to identify threshold values that can be used in clinical settings to help clinicians predict if patients will develop postoperative complications. If any parameters are found to be strong predictors, this may suggest the potential usefulness of microcirculatory monitoring in high-risk patients.

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Poster keywords

Microcirculation, Microcirculatory dysfunction, Major vascular surgery, Postoperative hypotension, Perioperative care

81

A Retrospective Study identifying the Prevalence of Sarcopenia among Patients undergoing Pancreatic Surgery using Machine Learning

Atiya Dhala[1], Ahad Azimuddin[2], Andrea Meinders[1], Jerica Podrat[1], Kelvin Allenson[1], Linda Moore[1], Enshuo Hsu[1], Atteeba Manzar[1]
[1]Houston Methodist Hospital, Houston, USA. [2]Texas A&M COM, Houston, USA

Competition Track

EBPOM abstract competition

Abstract

Introduction:

Sarcopenia is a progressive loss of muscle quality and quantity [1]. Geriatric patients are at higher risk of sarcopenia and represent a growing proportion of the United States population. Early diagnosis of sarcopenia and therapeutic prehabilitation may be an effective measure in reducing post-operative complications after major oncologic surgeries. We sought to create a pipeline integrating our institution's imaging with machine learning to automate identification of sarcopenia in patients undergoing pancreatic surgery.

Methods:

We retrospectively studied patients undergoing pancreaticoduodenectomy, distal and total pancreatectomy at a single, high-volume facility from 2016-2021. Pre-operative Computed Tomography (CT) scans were collected using XNAT, an open-source informatics software, and analyzed for skeletal muscle area (SMA) using a U-Net convolutional neural network (UCNN) (AutoMATiCA, Cambridge, MA; Figure 1) [2]. Formulas utilizing age, sex, and SMA calculated the skeletal muscle index (SMI), which was used to designate sarcopenia (SMI =L3 SMA in cm/Height in m2; males <53cm/m2, females <41cm/m2) [3]. Findings were validated by two board-certified radiologists who were blinded to UCNN results.

Results:

We reviewed 190 CT scans. The median age of the cohort was 67.4 years, 94 (49.5%) were male, most identified as white (n=147, 77.4%), and most had pancreatic cancer (n=104, 54.7%; Table 1). Total imaging analysis time was 656.7 seconds. Sarcopenia was identified in 102 (53%) patients, who had a higher median age than non-sarcopenic patients (70.6 vs. 65.6 years; p=0.002), but no difference between genders. Significantly more patients with sarcopenia underwent Whipple procedures (n=84, 82.4%, p=0.017).

Conclusion:

Sarcopenia is prevalent in patients undergoing pancreatic surgery at our institution. This study validated using machine learning to identify sarcopenia within our patient population, allowing for targeted selection of patients that would potentially benefit from a prehabilitation program.

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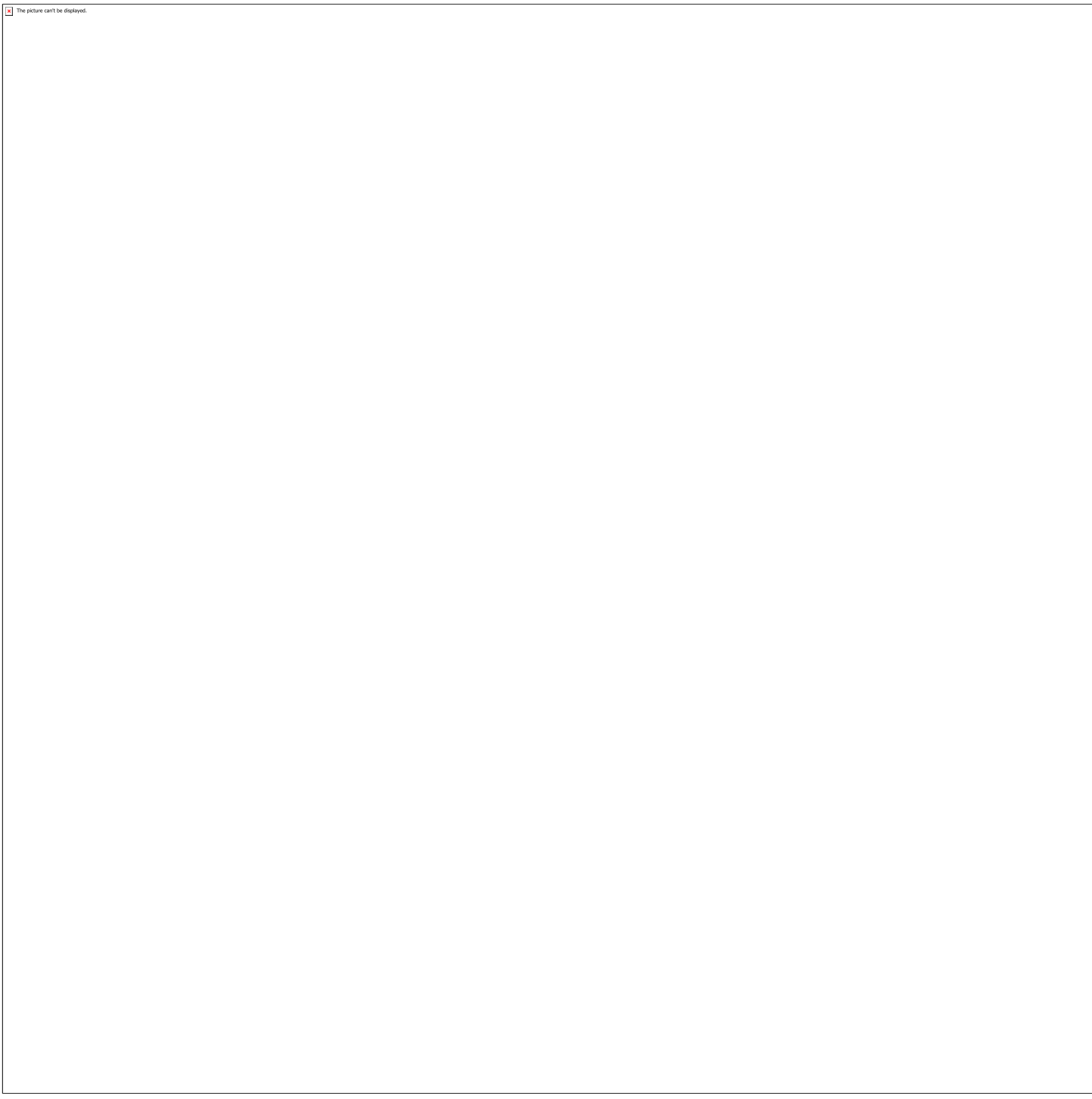

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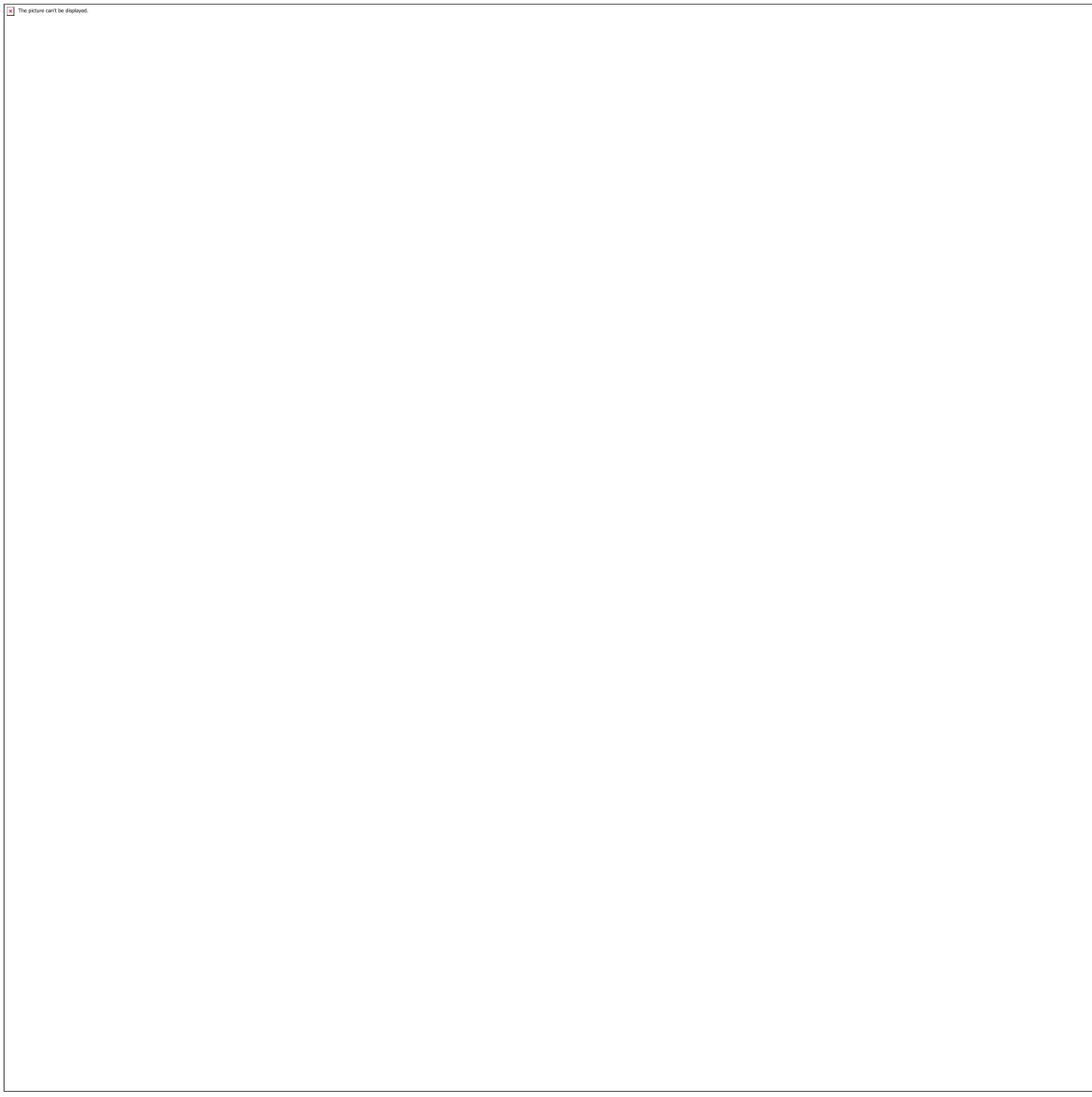

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Poster keywords

sarcopenia, pancreaticoduodenectomy, machine learning, prehabilitation, preoperative

82

THE QUALITY AND RISK OF BIAS OF TRIALS IN PREHABILITATION MEDICINE- A CAUSE FOR CONCERN?

Wilson Jiang[1,2], Cherry Koh[1,3,4,5], Sascha Karunaratne[1,3], Michael Solomon[1,3,4,5], Paula Beckenkamp[6], Ruby Cole[1], Kari Clifford[7], John Woodfield[7], Daniel Steffens[1,3,4]
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Competition Track

EBPOM abstract competition

Abstract

Introduction

Over the last decade, there has been a significant increase in the number of randomised controlled trials (RCTs) evaluating the effectiveness of prehabilitation in cancer patients scheduled for surgery. High-quality RCTs are crucial for evidence-based medicine. Thus, the purpose of this study was to evaluate the reporting quality and risk of bias in prehabilitation RCTs.

Methods

A comprehensive search of several databases including MEDLINE, Embase, The Cochrane Library, CINAHL, AMED and PsycINFO was conducted from inception to July 2021. The study screening and selection process was done in parallel by two independent reviewers. We included RCTs evaluating the effectiveness of preoperative exercise, nutrition and/or psychological interventions on postoperative complications and/or length of hospital stay in adult cancer patients undergoing surgery. The primary outcomes of interest were the reporting quality and risk of bias of each trial, which were assessed using the TIDieR checklist and RoB 2 tool respectively, along with other relevant reporting metrics.

Results

A total of 74 trials were identified in our search. The majority, 74%, were rated as having a high risk of bias, with 55% of the studies considered to have a high risk of bias in domain 2, which pertains to bias resulting from deviations from the intended interventions, and 32% in domain 3, which relates to bias due to missing outcome data. Similarly, only 9 out of the 13 TIDieR items were adequately reported, with only 12% of trials reporting on intervention modification. Furthermore, only 55% of the RCTs had

registered protocols, of which 68% had changed the primary or secondary aims, and 41% failed to achieve the planned sample size.

Conclusions

The reporting quality of RCTs assessing prehabilitation in cancer patients undergoing surgery is suboptimal, with a majority of trials demonstrating a high risk of bias. Consequently, there is a requirement for improved quality RCTs to ascertain the effectiveness of prehabilitation programs in cancer patients.

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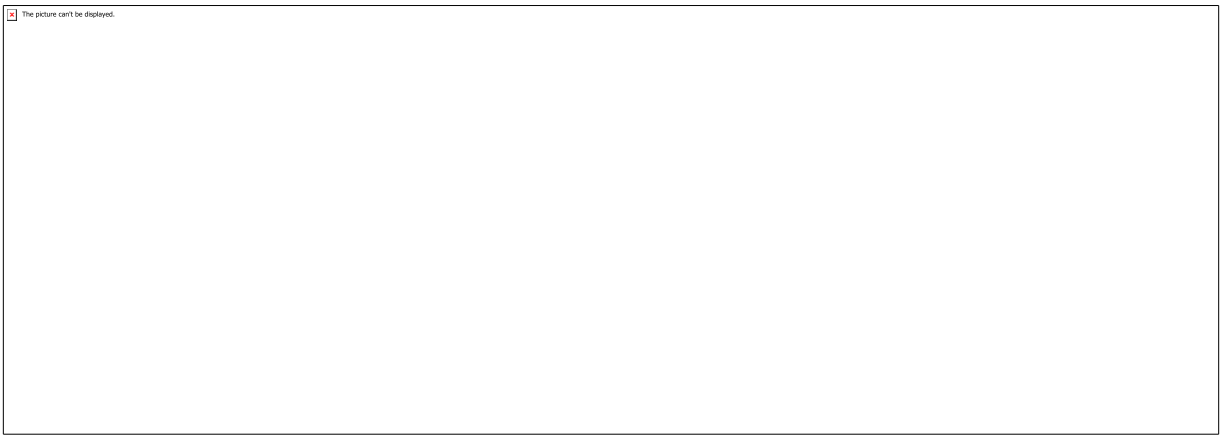

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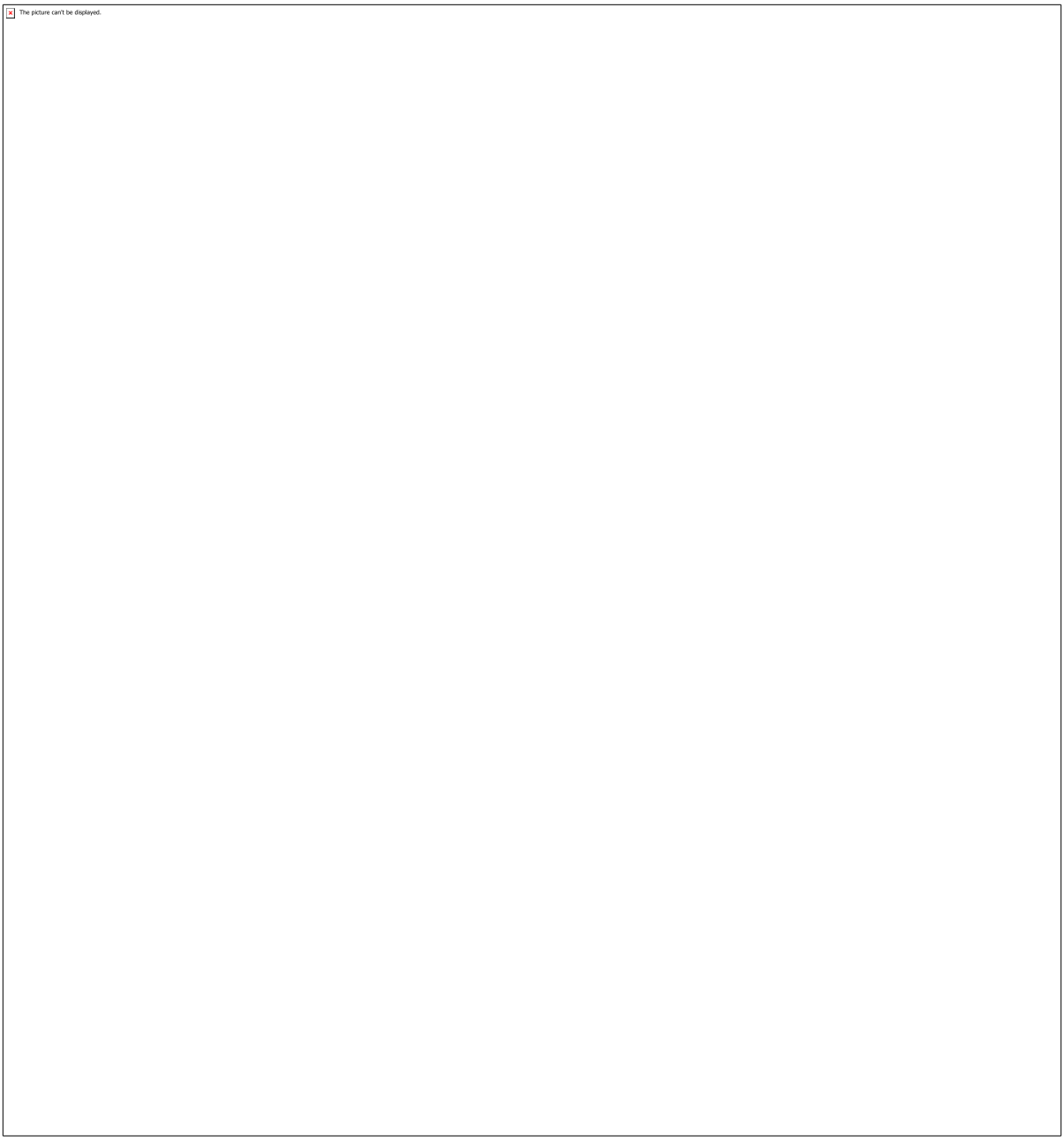

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Poster keywords

Prehabilitation, Cancer, Surgery, Randomised controlled trials, Risk of bias

83

A REVIEW OF PATIENT RECRUITMENT IN RANDOMISED CONTROLLED TRIALS OF PREOPERATIVE EXERCISE

Daniel Steffens[1,2,3], Michael Solomon[1,2,3,4], Jane Young[1,5], Paula Beckenkamp[6], Ruby Cole[1,2], Cherry Koh[1,2,3,4], Mark Hancock[7]
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Competition Track

EBPOM abstract competition

Abstract

Introduction

Randomised Controlled Trials (RCTs) are considered the gold standard design to determine the effectiveness of an intervention, as the only method of decreasing section bias and minimising random error. However, participant recruitment to RCTs is a major challenge, with many trials failing to recruit the targeted sample size accordingly to the planned protocol. Thus, the aim of this review is to detail the recruitment challenges of preoperative exercise clinical trials.

Methods

A comprehensive search was performed on MEDLINE, Embase, The Cochrane Library, CINAHL, AMED and PsycINFO from inception to July 2021. RCTs investigating the effectiveness of preoperative exercise on postoperative complication and/or length of hospital stay in adult cancer patients were included. Main outcomes included recruitment rate, retention rate, number of days needed to screen and recruit one patient, and trial recruitment duration. Descriptive statistics were used to summarise outcomes of interest.

Results

A total of 27 trials were identified, including 3,656 patients screened (N=21) and 1,414 randomised (median recruitment rate [range]= 54% [4% to 87%], N=21). The sample size of the included trials ranged from 19 to 270 (median=48) and the duration of trial recruitment ranged from 3 to 50 months (median=19 months). Overall, a median of four days were needed to screen one patient, whereas 14 days were needed to randomise one participant. Over the trials duration the median dropout rate was

8%. Variations in recruitment outcomes were observed across trials of different cancer types but were not statistically significant.

Conclusions

The recruitment of participants to preoperative exercise RCTs is challenging, but patient retention appears to be less of a problem. Future trials investigating the effectiveness of a preoperative exercise program following cancer surgery should consider the time taken to recruit patients. Strategies associated with improved recruitment should be investigated in future studies.

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Poster keywords

Systematic review, Recruitment, Randomised controlled trials, Preoperative, Exercise

84

FEASIBILITY, RELIABILITY, AND SAFETY OF REMOTE FIVE TIMES SIT TO STAND TEST IN PATIENTS WITH GASTROINTESTINAL CANCER

Daniel Steffens[1,2], Natasha C. Pocovi[1,3], Ruby Cole[1,2], Kim Delbaere[4,5], Mark J. Hancock[3], Cherry Koh[1,2,6], Linda Denehy[7,8], Kimberley S. van Schooten[4,5], Michael Solomon[1,2,6]
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Competition Track

EBPOM abstract competition

Abstract

Introduction

The five times sit to stand (5STS) test is widely used to measure functional lower extremity strength. However, the psychometric properties of the 5STS test when performed remotely is unknown. This study determined the feasibility, reliability, and safety of the remote five times sit to stand test (5STS) in 37 patients scheduled to undergo gastrointestinal cancer surgery. Participants completed the 5STS test both face-to-face and remotely, with the order randomised. The study provides supporting evidence that the remote 5STS test is feasible, reliable, and safe in patients with gastrointestinal cancer and can be used in both clinical and research settings.

Methods

Consecutive adult patients undergoing surgical treatment for lower gastrointestinal cancer at a major referral hospital in Sydney between July and November 2022 were included. Participants completed the 5STS test both face-to-face and remotely, with the order randomised. Outcomes included measures of feasibility, reliability, and safety.

Results

Of fifty-five patients identified, seventeen (30.9%) were not interested, one (1.8%) had no internet coverage, and thirty-seven (67.3%) consented and completed both 5STS tests. The mean (SD) time taken to complete the face-to-face and remote 5STS tests was 9.1 (2.4) and 9.5 (2.3) seconds, respectively. Remote collection by telehealth was feasible, with only two participants (5.4%) having connectivity

issues at the start of the remote assessment, but not interfering with the tests. The remote 5STS test showed excellent reliability (ICC = 0.957), with limits of agreement within

acceptable ranges and no significant systematic errors observed. No adverse events were observed within either test environment.

Conclusions

Remote 5STS for the assessment of functional lower extremity strength in gastrointestinal cancer patients is feasible, reliable, and safe, and can be used in clinical and research settings.

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Poster keywords

Feasibility, Reliability, Safety, Remote assessment, Five times sit to stand

85

PREOPERATIVE OPTIMISATION FOR PATIENTS UNDERGOING COLORECTAL CANCER SURGERY – DOES THE PREHABILITATION MODALITY MATTER?

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Competition Track

EBPOM abstract competition

Abstract

Background

The number of prehabilitation randomised controlled trials has increased significantly over the last decade. There are a variety of prehabilitation modalities employed, including nutrition, exercise, and psychological support. Recommendations on the optimal prehabilitation program are currently lacking. Thus, the main aim of this systematic review is to determine the effectiveness of different prehabilitation modalities on surgical outcomes.

Methods

A comprehensive search strategy including AMED, Cinhal, Cochrane, Embase, Medline and PsychInfo was performed from inception to April 2023. Randomised controlled trials investigating the effectiveness of preoperative nutrition, exercise, psychological or multimodal programs in colorectal cancer patients undergoing surgery were included. Primary outcomes included the presence of postoperative complications and the length of hospital stay. Odds ratios (OR) or mean differences and 95% confidence intervals (95%CI) were calculated using random-effects models.

Results

Of the 4146 unique articles identified, 40 met the inclusion criteria and were included (N=3364 patients). Preoperative interventions included nutrition (N=25 trials), exercise (N=9 trials), psychological (N=1 trial) and multimodal approaches (N=5 trials). Preoperative nutritional support (OR=0.67; 95%CI= 0.50 to 0.88) and a multimodal approach (OR=0.58; 95%CI= 0.36 to 0.94) were effective in reducing postoperative complications when compared to usual care. Only preoperative nutritional support (OR=1.19; 95%CI= 0.63 to 1.76) was effective in reducing the length of hospital stay when compared to control.

Conclusion

Preoperative nutritional support was effective in reducing postoperative complications and length of hospital stay in patients undergoing surgery for colorectal cancer. The effect of other preoperative modalities on surgical outcomes is uncertain due to the small number of trials. There is a need for definitive trials investigating the role of preoperative exercise, psychological support and multimodal interventions in patients undergoing colorectal surgery.

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Poster keywords

Prehabilitation, Colorectal, Cancer, Surgery, Research priorities

86

HOMOGENEITY ACROSS OUTCOMES IN PREHABILITATION RANDOMISED CONTROLLED TRIALS- ARE WE COMPARING APPLES AND ORANGES?

Wilson Jiang[1], Kilian Brown[1], Cherry Koh[1,2,3,4], Sascha Karunaratne[1,2], Michael Solomon[1,2,3,4], Paula R. Beckenkamp[5], Ruby Cole[1], Daniel Steffens[1,2,3]
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Competition Track

EBPOM abstract competition

Abstract

Introduction

Prehabilitation is a novel healthcare intervention which is intended to improve patient fitness before surgery, thereby reducing postoperative complications and recovery time. However, the literature on prehabilitation trials is limited due to the variation in outcomes reported and lack of definitions. Thus, this review aims to describe the outcomes reported in prehabilitation randomized controlled trials (RCTs) in patients undergoing cancer surgery.

Methods

A search was conducted in Embase, AMED, The Cochrane Library, PsycINFO, MEDLINE, and CINAHL from inception to July 2021. We included RCTs evaluating the effectiveness of preoperative interventions such as exercise, nutrition, and psychological interventions on postoperative complications and length of hospital stay in adult oncology patients who underwent thoracic and gastrointestinal cancer surgery. We extracted the verbatim outcomes reported in each article, and assessed whether each outcome was defined and measured with a tool. Verbatim outcomes were grouped into standardised outcomes and categorised into domains. The quality of outcome reporting in each article was assessed using the tool developed by Harman et al. to give a score ranging from 0 to 6, where 0 indicated that none of the criteria in the tool were addressed (1).

Results

We included 74 RCTs and extracted 601 verbatim outcomes, which were merged into 119 standardised outcomes. Only 110 (18.3%) of the outcomes were defined, 270 (44.9%) were labelled as either ‘primary’ or ‘secondary’ outcomes, and 198 (32.9%) were appropriately validated. The outcome reporting quality score, assessed using Harman et al.'s tool, showed poor quality across studies with a

median score of 2.00. Surgical outcomes were commonly reported across studies, with 71 (95.9%) studies reporting at least one outcome in this domain. In contrast, disease activity outcomes were reported in only eight (10.8%) studies. The most commonly reported standardised outcome was 'postoperative complications', reported in 38 (51.4%) trials.

Conclusion

Prehabilitation RCTs display considerable heterogeneity in outcome reporting, and inadequate outcome definitions. To improve outcome reporting quality, standardised core outcome sets should be developed and implemented. This would facilitate interpretation and enhance the evidence of prehabilitation trials.

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Poster keywords

Prehabilitation, Outcome measures, Randomised controlled trials, Cancer, Surgery

87

Monitoring activity patterns of patients in a prehabilitation program during daily life: A feasibility study.

David ten Cate[1], Loes Janssen[1], Margot Heijmans[1], Israel Campero Jurado[2], Bianca Serban[2], Ilde Lorato[3], Gerrit Slooter[4]
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Competition Track

EBPOM abstract competition

Abstract

Introduction: Prehabilitation generally causes an increase in functional capacity that leads to a reduction of complications after colorectal surgery (1). However, not every patient participating in a prehabilitation program will gain in functional capacity (2)[JL1] . Continuous monitoring of patients' functional capacity might gain insight in why some patients do and some patients don't respond to a prehabilitation program. So far, functional capacity is only measured during prehabilitation in a hospital setting at fixed moments(1). In this study, we will investigate the feasibility of using wearables that capture ECG and activity data continuously to potentially predict functional capacity.

Methods: This is a prospective single arm, feasibility study. All elective patients, participating in a prehabilitation program prior to colorectal surgery in Maxima Medical Center (Veldhoven, the Netherlands) are eligible. Patients are asked to wear two wearables for four weeks continuously; the ePatch for electrocardiogram (ECG) measurements and the Geneactiv activity tracker. Questionnaires are conducted daily on study experience, fatigue, motivation and stress levels, through the Kinduct Athlete mobile application.

Results: Primary outcome is feasibility. The setup is feasible if the wearables are used by at least 15/20 patients for 80% of the days and if the quality is sufficient in 50% of the data during day and 70% during night. The secondary objective is to evaluate the usability of the wearables. In addition, an exploratory analysis will be performed to investigate the ability of the heart rate, heart rate recovery, heart rate variability and activity patterns to predict functional capacity and changes in functional capacity. Tests will be correlated with the 6 minute walk test.

Conclusion: This study has been designed to test the feasibility of a set up including wearables in a prehabilitation program. We hope to gain insight in activity patterns and to improve monitoring of functional capacity in patients participating in a prehabilitation program.

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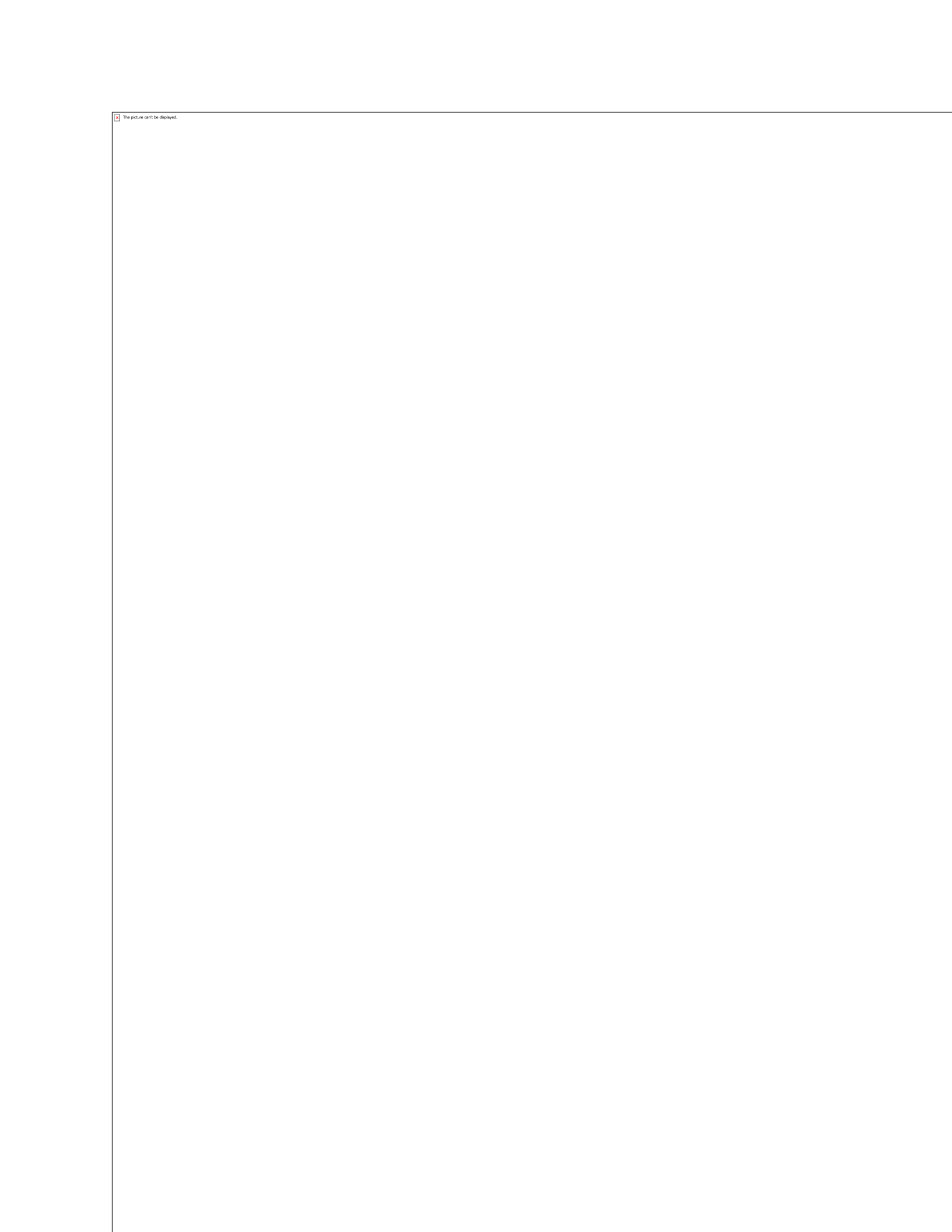
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Poster keywords

wearables, colorectal, monitoring, functional capacity, compliance

88

SUMMIT (Systematic Multi-disciplinary Management of Investigation and inTervention): 3 years on

Tiziana Pirotta, Vinodhan Vyapury, Pranav Patel, Asif Chaudry, Richard Gordon-Williams, Sacheen Kumar, Sophie Uren
Royal Marsden Hospital, London, United Kingdom

Competition Track

EBPOM abstract competition

Abstract

Introduction

The Royal Marsden Hospital (RMH) has a dedicated tertiary oesophago-gastric cancer service that primarily serves the southwest London demographic. The SUMMIT programme was conceptualised in September 2019 for patients undergoing upper gastrointestinal surgeries with three main aims; to reduce incidence of delays to surgery, to improve patients' physical and psychological health before and after surgery, and to promote shared decision making when preparing for and recovering from major surgery. Patients are identified at the beginning of their perioperative journey to allow time for prehabilitation, optimisation of medical comorbidities, lifestyle modification and risk stratification within a multidisciplinary framework. Our objective was to evaluate patient centred outcomes for oesophagectomies undertaken at the RMH during the three years since the initiation of SUMMIT and compare these to previous years.

Methods

All patients who underwent oesophagectomies at the RMH between the 1st October 2019 and 22nd June 2022 were included. We then matched them with a cohort undergoing oesophagectomies in the preceding three years for comparison. The data was retrieved from a prospectively maintained electronic database. We identified four patient centred outcome metrics for evaluation. These are length of stay (LOS) in intensive care, length of stay in hospital, Clavien-Dindo (C-D) grading of complications and 1 year survival. We also looked at baseline co-morbidity indices for the two groups.

Results

The two cohorts were balanced with 105 patients undergoing oesophagectomies for the three-year period of SUMMIT whilst 102 patients were identified for the preceding years. The patient demographics for the cohorts were similar when age, sex and BMI were considered (Table 1).

There was a reduction in both median CCU and hospital LOS, however this was not found to be statistically significant ($p = 0.15$ & $= 0.12$, respectively). There was an overall reduction in complications,

with statistical significance for those patients with a C-D score of >3 ($p < 0.003$). There was no difference in one year survival (87.2% vs 86.8%). This is despite having a statistically significant higher mean co-morbidity index ($p < 0.03$) and a higher proportion of salvage oesophagectomies in the SUMMIT cohort (Figure 1).

Conclusion

These improved outcome measures cannot be wholly contributed to SUMMIT alone as many facets of oesophageal surgery have evolved with different treatment modalities, surgical technique, and perioperative care. However, the SUMMIT process has played a key role in improving short-term clinical outcomes in patients undergoing oesophagectomy.

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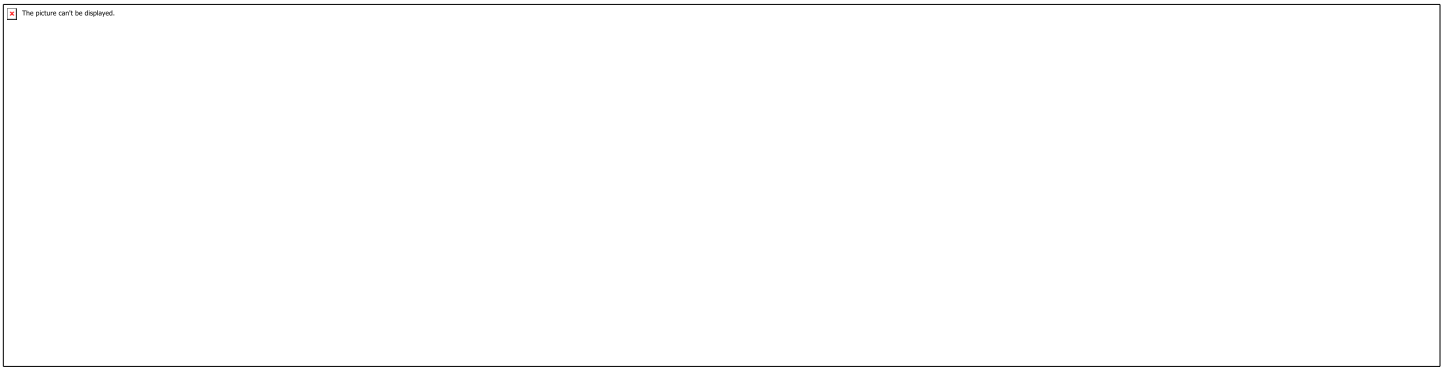

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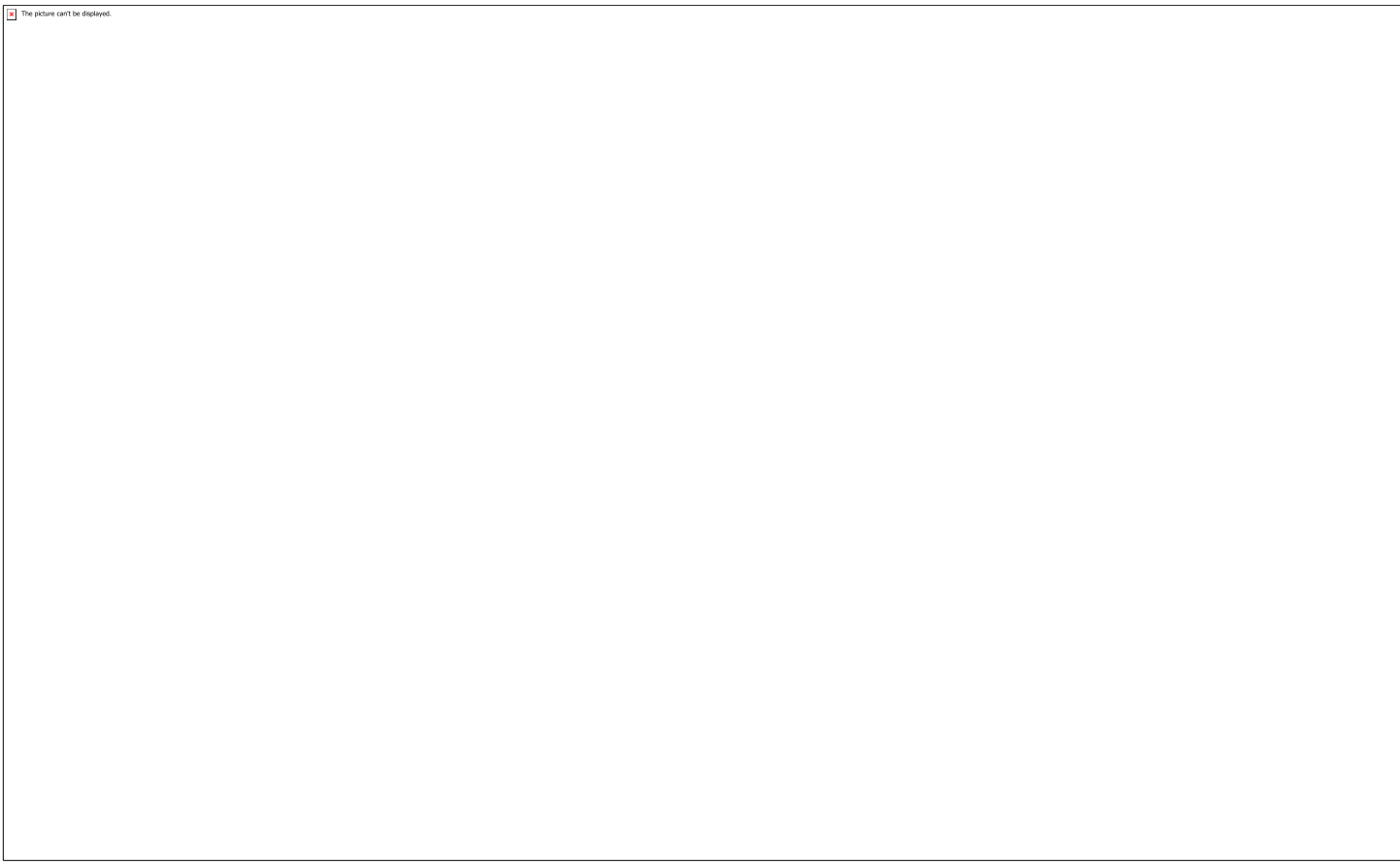

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Poster keywords

perioperative, oesophagectomy, outcomes, SUMMIT, Marsden

89

Multimodal prehabilitation in patients with non-small cell lung cancer: a feasibility study

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Competition Track

EBPOM abstract competition

Abstract

Introduction: Lung surgery is the leading cause of cancer related death worldwide [1]. Surgery is the preferred curative treatment in non-small cell lung cancer (NSCLC) but is associated with postoperative complications and morbidity. Furthermore, functional capacity is inevitably compromised. In other cancers, preoperative enhancement of functional capacity can be achieved with prehabilitation. However, the window of opportunity in lungsurgery patients is small because the Dutch Lung Cancer Audit–Surgery (DLCA-S) criteria states that 80% of the patients should undergo surgery within 3 weeks from diagnosis [2]. The goal of this trial was to assess feasibility of a prehabilitation programme in NSCLC within the DLCA-S timeframe. Secondary, we aim to assess the effect on functional capacity.

Methods: The intervention consists of 6 interventions: exercise programme, nutritional support, mental support, smoking cessation, patient empowerment and respiratory optimisation. Assessments were scheduled at baseline(T0), end of program(T1), 6 weeks postoperatively(T2) and 3 months postoperatively(T3). Primary outcome was feasibility, defined as ≥80% of participants completing the programme. Secondary outcomes were feasibility per centre, functional capacity(steep ramp test , 6-minute walk test, one repetition max of leg press, lateral pull down, low row and chest press , maximal inspiratory pressure, surgical outcome and patient satisfaction.

Results: A total of 24 patients were included. Completion rate was 79.2% and preoperative functional capacity improved in all prespecified tests. Patient satisfaction and usefulness had a median[IQR] score of 5 [4-5] and 5 [5-5] on a five point scale, respectively.

Conclusions: A multimodal prehabilitation program in lung surgery is feasible within the timeframe of three weeks between MDT and surgery . Also, it might lead to improved preoperative functional capacity

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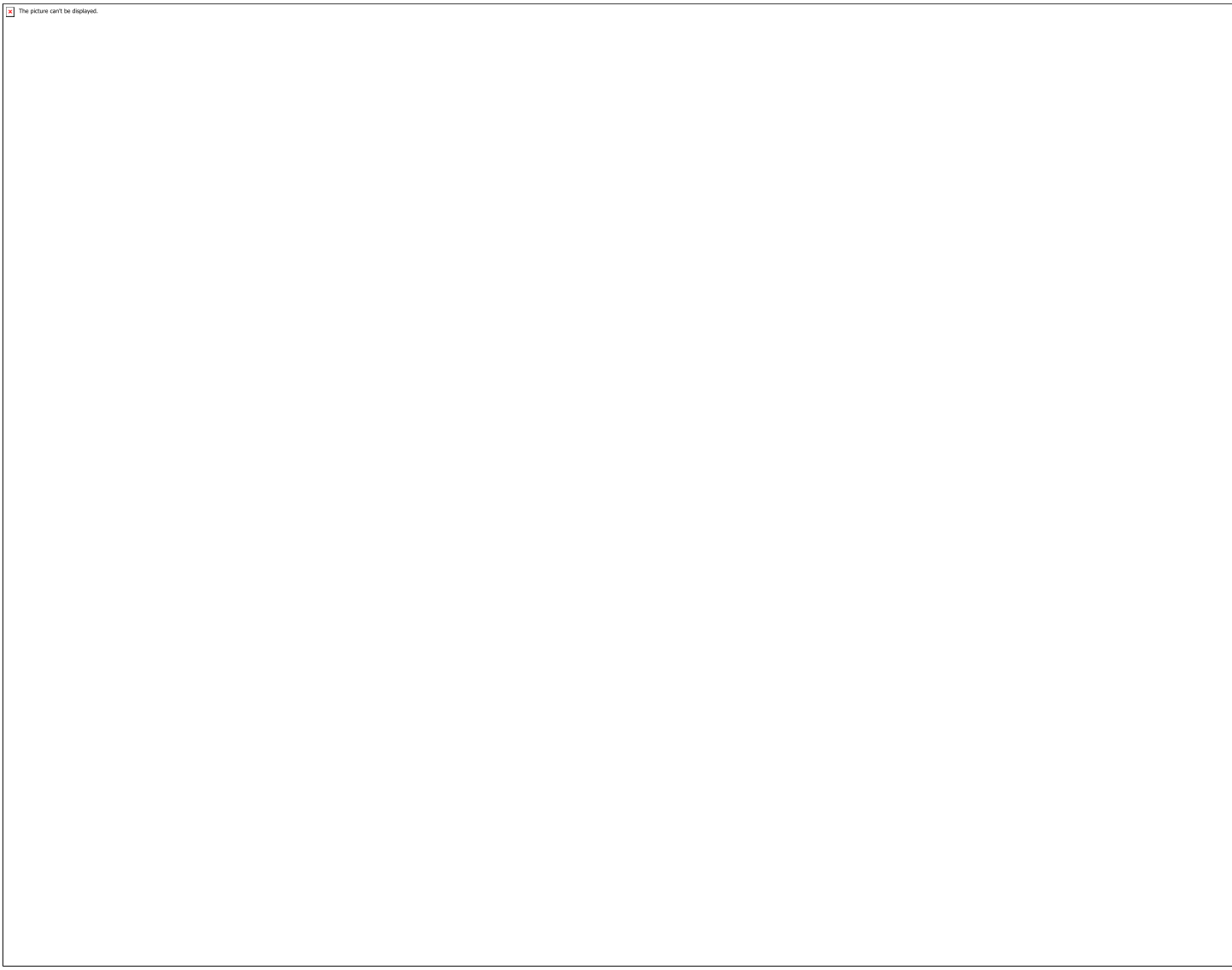

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Poster keywords

feasibility, lung surgery, multicenter, functional capacity, NSCLC

90

Reporting recruitment outcomes of a virtual, multimodal interventional study during the COVID-19 Pandemic; The SafeFit Trial

Samantha Leggett[1,2], Lesley Hawkins[1,2,3], Toran Williams[1,2], Hannah Golding[1,2], Anna Campbell[4], Chloe Grimmett[5], Malcolm West[1,6], June Davis[7], Denny Levett[1,2,3], Mike Grocott[1,2,3], Sandy Jack[1,2,3], The SafeFit Trial Steering Group[8]
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Competition Track

iPOETTS abstract competition

Abstract

Introduction:

During the COVID-19 pandemic patients with a cancer diagnosis were impacted due to the disruption of cancer services and the suspension of clinical trials[1]. This included suspending the Wessex Fit-4-Cancer Surgery Trial (WesFit), a multi-modal prehabilitation study for cancer surgical patients (NCT03509428). Reduced access to support through the pandemic was linked to deconditioning through decreased physical activity, changes in nutritional habits and exacerbated distress[2]. The cessation of WesFit and the desire to support the cancer population led to the virtual, interventional SafeFit Trial (NCT04425616).

Methods:

SafeFit is a Phase III self-referral trial that was open to any UK national ≥ 18 years living with and beyond cancer. Recruited participants received up to 23 sessions with a cancer exercise specialist over a period of 6 months of supervised, virtual multimodal support aligned with three pillars of prehabilitation (exercise, nutrition, and psychological support). Here we report the findings obtained during the recruitment process and some supporting self-reported baseline demographics data prior to full trial publication.

Results:

Between 2020-2022, 1939 patients were referred to the SafeFit trial. 1406 (72.5%) completed a telephone screening assessment call and 1100 individuals signed a consent form and were considered recruited to SafeFit. 86.4% (n=950) started the intervention. Reasons for drop-out at each stage is detailed in Figure 1. Of recruited participants 135 identified as male (12.3%; n=1099), 905 as female and 59 unknown. Average age was 52.7 years +/- 11.7 (n=1045) and an age range of 18-87 years. The largest cohort was breast cancer (n=675; 61.4%) and colorectal cancer the second largest cohort (n=107; 9.7%). Current calculated on-study adherence is 90.8% (+/-13.5; n=592).

Conclusion:

The above data demonstrates a high desire for a virtual, supervised, delivery mode of support and a suitable method of prehabilitation approach for patients that are unable to attend sessions face-to-face as a form of personalised, targeted support. Despite the trial being available to anybody that met the inclusion criteria we do acknowledge the trial appealing to predominately females with a breast cancer diagnosis, although they were at multiple stages of their diagnoses. Further analyses, including that of the primary outcome (physical and emotional function) and finalised adherence data, are to occur once the trial has closed to follow up.

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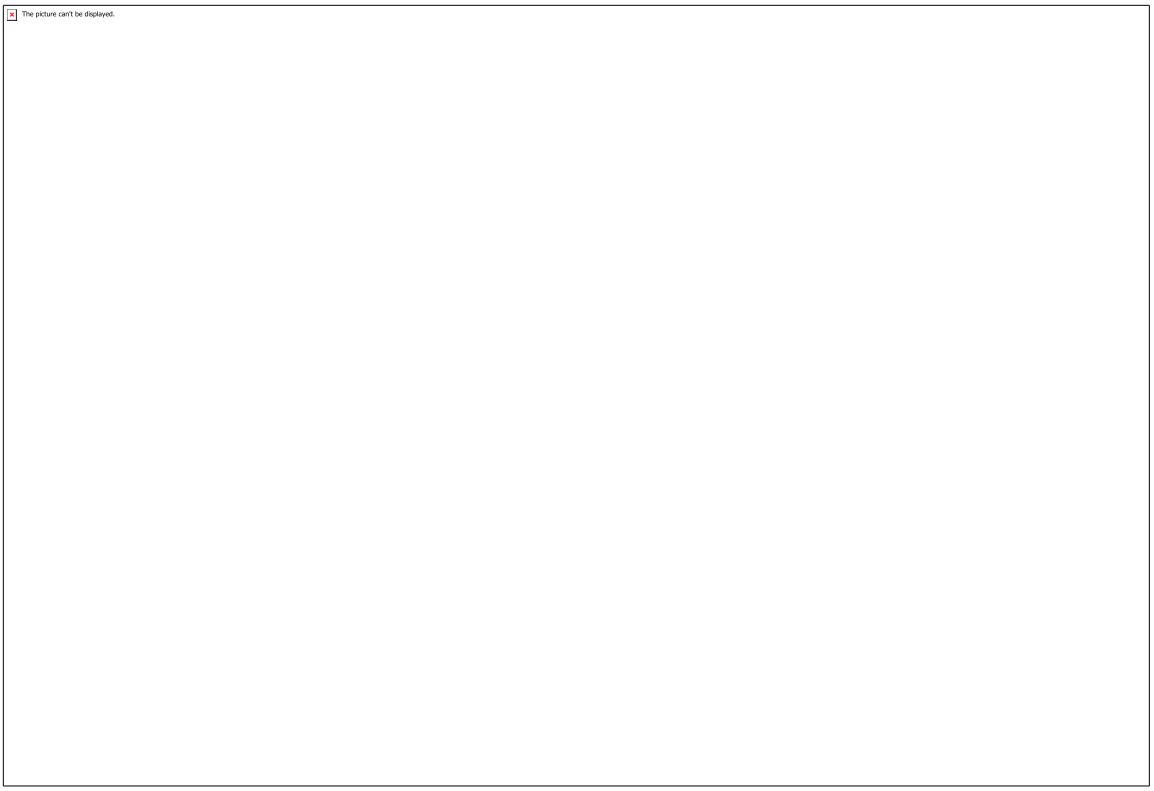

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Poster keywords

Cancer, Virtual, COVID, CONSORT, Recruitment

91

National survey of the management of uncontrolled diabetes in Pre-operative Assessment (POA)

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Competition Track

EBPOM abstract competition

Abstract

Title

National survey of the management of uncontrolled diabetes in Pre-operative Assessment (POA)

Background

Over 323,000 operations take place in the UK each year in patients with diabetes (15% of all procedures). This is likely to increase as rates of Type 2 Diabetes continue to rise rapidly. New guidelines from the Centre for Perioperative Care (CPOC) have recently been published (1), with the aim of improving perioperative care in diabetic patients.

This survey aimed to assess the management of uncontrolled diabetes within POA units in addition to exploring current pathways of care.

Methods

A national survey was distributed across the GIRFT national non-medical lead POA network with specific questions on diabetes pathways and interventions within POA. We aimed to explore whether a consistent approach to peri-operative diabetes management was being displayed.

Results

In total, 32 responses to the survey were received. All units were using the CPOC guidance with respect to an HbA1c cut-off of 69mmol/mol.

Key outcomes:

1. 88% of units postponed elective surgery for optimisation, with one unit removing the patient from the waiting list entirely
2. Only 28% of units had the ability to pre-screen for diabetes/HbA1c

3. The majority of units (78%) would refer back to primary care for optimisation
4. 25 units (78%) would wait for repeat HbA1c before proceeding with surgery which could result in a significant delay
5. There was a 50/50 split in the decision to proceed to surgery if patients hadn't been able to improve their diabetic control

Discussion and conclusion

To conclude, the majority of POA departments have a protocol in place for uncontrolled diabetic patients undergoing elective surgery, using HbA1c >69mmol/mol. However, there were overwhelming differences in the diabetes pathways following an uncontrolled result.

Though diabetic control is usually well documented in primary care, pre-screening and accessible GP referral data at the time of listing for surgery is lacking. An opportunity for optimisation interventions are rarely undertaken from secondary care resulting in postponement of surgery.

Further work is needed in this area to ensure we have a consistent approach to the management of patients with uncontrolled diabetes at the point of referral for surgery. There is a golden moment to improve diabetes management to reduce the risk of potential post-operative complications, but also an opportunity for patients longer term health.

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Poster keywords

pre-assessment, diabetes, uncontrolled diabetes, surgery, survey

92

Digital biopsychmetric profile for risk-stratified targeted prehabilitation on cancer pathways

Krishna Moorthy[1], Venetia Wynter-Blyth[2], Katerina Savva[1], Alex King[3], Louise Smith[4], James Dilley[5], Christopher Scrase[4], Melody Ni[1]
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Competition Track

iPOETTS abstract competition

Abstract

Introduction:

The impact on physical and psychological health and quality of life (QoL) in cancer patients throughout the treatment trajectory is well documented (1). So far, prehabilitation research has largely been directed towards physical fitness and healthcare utilisation costs. However, psychological well-being and QoL are important metrics for patients. This study aims to assess the impact of overall health, through a bio-psychometric risk profile, on cancer patients reported QoL.

Methods:

Baseline health metrics were collected via validated survey tools and wearable technology to develop a bio-psychometric risk profile which included- multi-morbidity risk (MMR) which was represented as a score from 0-14; frailty was based on walking speed. Psychological wellbeing was measured via an emotional distress scale (range 0-10). Physical fitness assessment included 1 minute heart rate recovery (HRR) and 30 second Sit to Stand test (STS), both undertaken during a virtual exercise session. Risk-stratification was undertaken using validated thresholds for each of the health risk metrics, including weight loss and BMI. EuroQoL EQ-5D-5L was used to report quality of life as health utility (EQ-HU).

Results:

232 patients, from 3 NHS trusts and and 9 different cancer types, were included in the analysis. 78% of patients had one high-risk metric and 32% had >3 high risk metrics. 48% of patients had a BMI>30 and in 23% it was >35. 78% had multi-morbidity and 47% had high MMR scores. 32% were frail. 23% had poor cardio-respiratory fitness (HRR<12 bpm) and 24% had poor lower body strength (STS<10). High levels of anxiety and distress were reported in 21% and 26% of patients respectively.

Patients who had one high risk metric reported significantly lower QoL [mean (sd) 0.67 (0.20) vs 0.79 (0.18); p-=0.005]. Patients with >3 high risk metrics reported a significantly worse QoL [mean (sd) 0.58

(0.22) vs 0.76 (0.17); p=0.001]. Higher levels of anxiety (rho-0.24; p=0.002) and distress (rho=0.29; p<0.001) were also associated with lower QoL.

Conclusions

This study demonstrates the incidence of different health impairments in NHS cancer patients. 1 in 4 patients have more than 3 high risk modifiable health metrics that are known to be associated with poor treatment outcomes. There is a strong correlation between the risk metrics and reported quality of life. Early identification and modification of these health impairments is likely to result in better QoL for patients throughout the treatment trajectory.

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Poster keywords

Quality of life, Screening, Risk profile, Targeted prehabilitation

93

Pre-operative dietetics intervention for patients with uncontrolled diabetes prior to elective surgery

Charles Peat, Rhiannon Coultate, Siobhan Ashton-Cleary, James Prentis
Freeman Hospital, Newcastle Upon Tyne, United Kingdom

Competition Track

EBPOM abstract competition

Abstract

Background

Diabetes mellitus is a well-recognised risk factor for poor surgical outcomes(1). However, there is conflicting evidence regarding which factors increase risk - diagnosis, presence of complications, quality of glucose control. Since 2011 guidelines have recommended an HbA1c cut-off of 69 mmol/mol for elective surgery, however authors accepted it was controversial due to 'insufficient evidence' for recommending an upper HbA1c limit(2).

Methods

The objective was to assess a novel secondary care initiative involving personalised, short-term dietetics intervention augmented by flash glucose monitoring in patients with uncontrolled T2DM awaiting day case urology surgery, with the aim to reduce and maintain average blood glucose <10mmol/L. Primary aim is to assess the diabetic control at time of surgery. Secondary aims include reviewing Freestyle Libre 2 data for changes to time in range, time in hyperglycaemia, and average blood glucose from first week of intervention to final week before operation, as well as peri-operative complications.

Results

This is an ongoing initiative with patients still being enrolled.

17 patients have been contacted: currently, 4 have completed the intervention and had their planned procedure, 5 are within the intervention, 8 were uncontactable/declined.

Primary outcome – in-patient diabetic control

On the day of operation all patients had blood glucose within range (4-12mmol/L) and no interventions were required during their hospital stay. All patients were discharged as a day case. 1 patient had a minor surgical site infection requiring antibiotics from his GP.

Secondary outcomes – preoperative intervention

Preliminary results from completed patients show time from intervention to surgery ranged from 17-77 days (mean 54.25 days).

Comparing 1st week of sensor use to final pre-operative week available, mean time in range (3.9-10mmol/L) increased from 40.25% to 79.75%; time with very high glucose (>13.9mmol/L) decreased from 33.5% to 2%; average blood glucose decreased from 12.33 to 8.40mmol/L.

Discussion and conclusion

Initial results show promise in ability to target, focus and improve uncontrolled diabetics glucose control via a short intervention leading up to surgery. Further work is planned following pilot completion, including longer term follow up evaluating complication rates and whether improved control is maintained.

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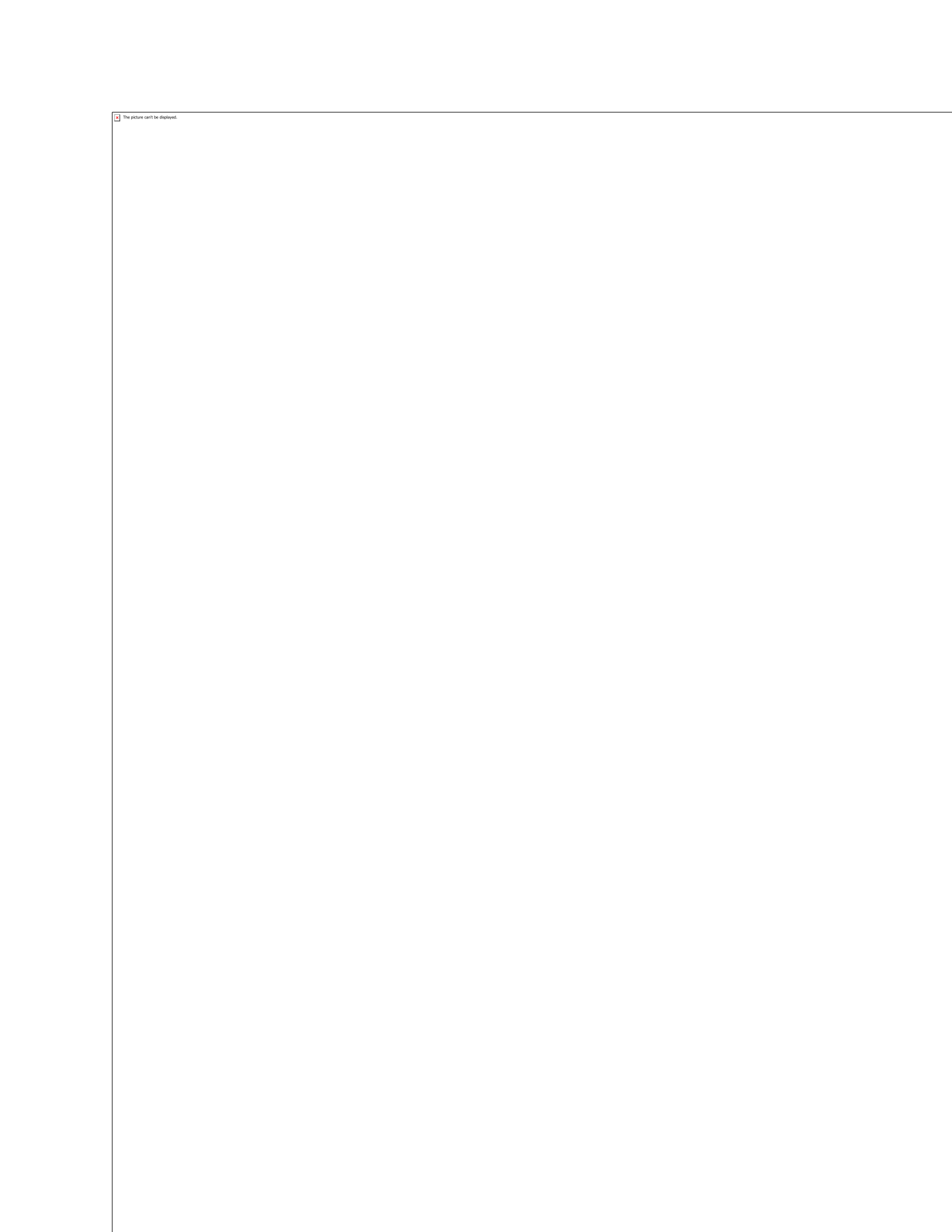
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Poster keywords

diabetes, prehabilitation, population health management, dietetics, technology

94

Delivering live, virtual multimodal interventions in advanced breast cancer patients with spinal metastatic disease

Toran Williams[1,2], Samantha Leggett[1,2], Lesley Hawkins[1,2,3], Anna Campbell[4], Chloe Grimmett[5], Malcolm West[1,6], June Davis[7], Denny Levett[1,2,3], Mike Grocott[1,2,3], Sandy Jack[1,2,3], The SafeFit Trial Steering Group[8]
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Competition Track

iPOETTS abstract competition

Abstract

Introduction:

Bone metastases lead to significant caution when it comes to exercise prescription, due to safety concerns for skeletal related events[1]. However, there is growing evidence that exercise is safe under supervision of qualified cancer exercise professionals[2]. During the COVID-19 pandemic, the self-referral SafeFit trial offered virtual multimodal interventions to maintain and improve physical health, nutritional state and psychological wellbeing in people with cancer (NCT04425616). This allowed us to observe risk and engagement, in breast cancer participants with spinal metastatic disease (BCP-SMD).

Methods:

Participants were provided with up to 23 sessions over a 6-month intervention period of personalised multimodal support (exercise, nutrition, and emotional wellbeing), via virtual clinics with a CanRehab Trust[3] instructor. From 1100 consented participants, 48 BCP-SMD were identified. Participants Session Completion Logs (SCL) completed by instructors were reviewed and data was collected for; total number of sessions, type of session support received and exercise type utilised (when applicable). Only fully completed SCL were included in the final analysis.

Results:

40 Female BCP-SMD were included (mean age 52.8yrs). 33 participants completed the 6-month intervention period. One died, four withdrew due to disease-related toxicities, one withdrawn due to clinician advice and one participant by choice. Mean on-trial adherence was 90.4% with a mean attendance of 18.5 sessions per participant. There were no attributable adverse events although 10 serious adverse events were recorded (all non-attributable). Exercise support was carried out in 81.6% of sessions (n=740 sessions), emotional support in 65.7% and nutritional support in only 34.6% (Table 1). Whilst exercise was tailored to the individual, resistance training and mobility/flexibility work were the modes most utilised during sessions.

Conclusion:

From initial observations remote exercise in BCP-SMD is a safe method of support, although we acknowledge the small sample size of this cohort. SCL showed good adherence to sessions, indicating positive engagement. However, we do note that there was heterogeneity in the level of session details provided by instructors. Future studies with specific detailed exercise prescription in terms of the FITT (Frequency, Intensity, Time, Type) principle would be beneficial for analyses of exact content and guidance.

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2. Sarah Weller, Nicolas H. Hart, et al. Critical Reviews in Oncology/Hematology 166, 2021, 103433, ISSN 1040-8428. https://doi.org/10.1016/j.critrevonc.2021.103433.
3. www.canrehabtrust.org (Accessed: 25/04/2023)

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Poster keywords

Cancer, COVID, Bone Mets, Virtual, Adherence

95

Treatment interval in curative treatment of colon cancer and its impact on (cancer free) survival in high-risk and non-high-risk patients

Maud Strous[1], Ruud Franssen[1], Charolotte Molenaar[2], Eric Belgers[3], Johanne Bloemen[4], Gerrit Slooter[5], Jarno Melenhorst[6], Jeroen Heemskerk[7], Adriaan de Bruïne[1], Maryska Janssen-Heijnen[1], Jeroen Vogelaar[1]
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Competition Track

iPOETTS abstract competition

Abstract

Introduction

Implementation of prehabilitation for patients undergoing surgical treatment for colon cancer has proven effective in reducing the risk of postoperative complications [1]. Currently recommended maximal treatment intervals leave limited span for implementation of a full prehabilitation programme. In patients at high risk of postoperative complications it may be preferable to lengthen the treatment interval to achieve maximum results of a prehabilitation programme [2]. However, this is thought to create an oncological risk. The aim of the current study was to determine the association between advised treatment intervals and (cancer free) survival, while stratifying for the risk of postoperative complications (non-high-risk and high-risk).

Methods

This retrospective multicentre study included patients who underwent elective surgical treatment for colon cancer between 2010 and 2016. Patients were stratified into groups based on their estimated risk of postoperative complications (high-risk and non-high-risk). Treatment interval was defined as time between diagnosis and surgical treatment, divided into 3 categories (≤35 days, 36-49 days and >49 days). Primary endpoints were overall- and cancer free survival, assessed by multivariate Cox proportional hazard regression analysis.

Results

A total of 3376 patients (2026 non-high-risk (60.0%); 1350 high-risk (40.0%)) were included. Treatment interval was not associated with cancer free survival (36-49 days (non-high-risk p=0.772; high risk p=0.575) or >49 days (non-high-risk p=0.460; high risk p=0.134)) (Figure 1). A treatment interval >49 days was associated with poorer 5-year overall survival in non-high-risk patients (HR=1.352, p=0.047),

but not in high-risk patients (p=0.688). A treatment interval of 36-49 days was not associated with 5-year overall survival (non-high-risk p=0.241; high-risk p=0.981) (Figure 2).

Conclusion

Extending the treatment interval in curative treatment of colon cancer up to 49 days is safe, whether concerning high-risk or non-high-risk patients. In high-risk patients, treatment can be postponed >49 days without jeopardizing survival. Especially in high-risk patients, extending this treatment interval in order to adopt a prehabilitation programme might improve survival, and even cancer free survival, as the impact of several modifiable prognostic factors identified in this study is expected to decrease by prehabilitation.

1. Molenaar, C.J.L., et al., Effect of Multimodal Prehabilitation on Reducing Postoperative Complications and Enhancing Functional Capacity Following Colorectal Cancer Surgery: The PREHAB Randomized Clinical Trial. JAMA Surg, 2023.

2. Franssen, R.F.W., et al., Moderate-intensity exercise training or high-intensity interval training to improve aerobic fitness during exercise prehabilitation in patients planned for elective abdominal cancer surgery? Eur J Surg Oncol, 2022. 48(1): p. 3-13.

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Poster keywords

therapeutic delay, prehabilitation, high-risk, cancer-free survival, cancer surgery

96

A health economic model to assess the impact of the PREPARE prehabilitation programme on Hospital Cost Savings in the NHS

Katerina Savva, Bernarda Zamora-Talaya, Laura Halliday, Melody Ni, Krishna Moorthy
Imperial College, London, United Kingdom

Competition Track

iPOETTS abstract competition

Abstract

Introduction:

Prehabilitation is increasingly seen as an integral part of cancer pathways. There is growing evidence of the impact of prehabiliation on improving physical and psychological health and also on clinical outcomes such as postoperative complications and chemotherapy tolerance (1,2). However, there is limited research on cost-effectiveness, as a result of which commissioning on a recurring basis is a challenge. Having previously demonstrated the impact of our PREPARE prehabilitation programme on post-operative complications and hospital stay, the current study aims to estimate the impact of PREPARE on reducing costs.

Methods:

Data has been extracted from the PREPARE study to assess the impact on the following clinical outcomes (length of intensive care unit (ICU) and hospital stay, reduction of major and minor complication). We used a previously developed health economic model developed in gastrointestinal cancer resections (3) to evaluate impact of PREPARE. The modelling accounts for the number of hospital admissions and unit costs from NHS hospitals, including: cost per bed-day from NHS Reference costs 2017-18, complication costs and ICU cost from NHS Reference National Cost Schedule 2019-20. Double counting has been corrected to account for the compounded effects on length of stay and complications. The impact of PREPARE considers the average effect of each outcome and their variability by confidence intervals. This provides a range of potential impact on patients undergoing surgery for oesophageal and gastric cancer, in terms of cost reductions based on NHS England tariff.

Results:

Patient weighted average cost savings from PREPARE was £1,466.90 excluding ICU costs. ICU cost savings were £1,619.87. Use of prehabilitation resulted in reductions in minor and major complications, corresponding to £155.18 and £313.91 cost reductions per patient, respectively. Combined with length of stay reduction by 3 days, the average total cost saving per patient was £1,654.

Conclusions:

Our previous studies have demonstrated the impact of PREPARE on a number of outcomes including post-operative complications. This study specifically demonstrates the cost savings from our programme in oesophago-gastric surgery patients. While other health economic studies have focussed on reduction in hospital stay, our study has shown that cost savings are also from reduction in complications independent of hospital stay.

References:

1. Halliday LJ et al. J Gastrointest Surg. 2733-2741; 25(11): 2021
2. Christodoulidis G et al. Curr. Oncol. 1538-1545; 30 (2): 2023
3. Zamora Talaya et al. Accepted for presentation at the American Society of Clinical Oncology, ASCO, Chicago, June 2-6 2023.

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Poster keywords

health economics prehabilitation, prehabilitation cost effectiveness, oesophageal cancer prehabilitation

97

Assessing Key Performance Indicators in a Post-Anaesthesia Care Unit

Andrew Duncan[1], Aoife Lavelle[2]
[1]Royal Perth Hospital, Perth, Australia. [2]St James Hospital, Dublin, Ireland

Competition Track

EBPOM abstract competition

Abstract

Introduction:

This quality improvement project aimed to analyse a number of anaesthesia-related postoperative key performance indicators (KPIs) to identify a baseline for our department and to implement necessary changes where deficiencies were identified. We evaluated postoperative pain scores, nausea and vomiting (PONV), hypothermia, agitation or delirium, respiratory compromise and unplanned critical care admissions.1

Method:

The hospital's research and innovation board granted approval to conduct the project. The plan-do-study-act method of quality improvement was used.2 We audited all patients admitted to the post-anaesthesia care unit (PACU) for a standard working week and repeated the audit cycle twice. We used an 11-point pain rating scale; hypothermia was defined as a temperature less than 36, respiratory compromises were recorded and qualified by description, while PONV, agitation/delirium and unplanned critical care admissions were simplified to yes or no responses. The results of each audit cycle were published on a paper-based dashboard in the hospital, with direct feedback to the department via audit meetings and didactic teaching sessions were run for anaesthesia trainees and recovery room nurses to target specific areas that needed improvement.

Results:

Results are presented in Table 1.

Conclusion:

There are no standardised, universally agreed-upon key performance indicators in anaesthesia. However, immediate postoperative outcomes are well studied and have some agreed-upon targets, which can be used as quality indicators in anaesthesia. The main issue we encountered as part of this project was the variation in documentation in PACU. In our centre, paper-based documentation continues to be used for anaesthesia and in the PACU. This differs from the rest of the hospital, where electronic documentation and prescribing are used. Education sessions provided to PACU nurses led to improved documentation standardisation across successive audit cycles. However, we will be switching to an electronic system soon, further aiding standardisation. Moving forward with this project, we aim to launch an electronic dashboard for the department with quarterly publication of KPIs and continue to feedback this data to our service providers, aiming to improve quality of care in successive cycles.

References:

1. Gan et al. Fourth Consensus Guidelines for the Management of Postoperative Nausea and Vomiting. Anesth Analg. 2020; 131: 411-448.
2. NHS England and NHS Improvement. Plan, Do, Study, Act (PDSA) cycles and the model for improvement. Available at: https://www.england.nhs.uk/wp-content/uploads/2022/01/qsir-pdsa-cycles-model-for-improvement.pdf

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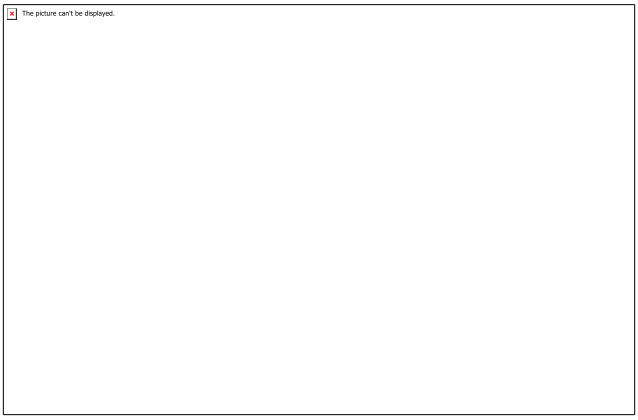

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Poster keywords

key performance indicators, post-operative, peri-operative, PACU, PONV

98

Use of remote blood pressure monitoring in pre-operative assessment to aid General Practitioner referral, patient optimisation and reduction in surgical delays

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Royal Stoke University Hospital, University Hospitals of North Midlands NHS Trust, Stoke-on-Trent, United Kingdom

Competition Track

EBPOM abstract competition

Abstract

Introduction

Hypertension is an important preventable cause of premature morbidity and mortality in the UK[1] and a common reason for elective surgery cancellation or delay[2]. Elevated blood pressure (BP) readings in pre-assessment clinics can often lead to inappropriate General Practitioner (GP) referrals and surgical delays.

Florence Telehealth is a communication system that uses text messages to help patients and clinicians monitor their home BP. This study was designed to use Florence to identify patients with elevated BP or poorly controlled hypertension for GP referral and optimisation and to assess if this reduces inappropriate GP referrals and surgical delays or cancellations.

Methods

Patients whose BP readings were high in the pre-assessment clinic (>140/90) were registered on to Florence and given a BP machine for three-day home BP monitoring. Florence sent text reminders to patients, prompting them to check their BP. The patients texted their readings to Florence and if their average home BP was >160/90, they were referred to GP as per local policy.

We collected data retrospectively from all patients registered to Florence in the year 2022, noting their average clinic BP, average home BP, need for GP referral, known hypertensive or not, time taken to get ready for surgery with regards to BP and any surgical complications.

Results

Data from 189 hospital patients with elevated pre-assessment clinic BP registered in Florence in the year 2022 were analysed. Action taken after a review of home BP readings is summarised in Figure 1. Only 60 patients needed a referral to GP, out of which 16 were known hypertensive. The average time for a patient referred to GP to be ready for surgery was 18 days, whereas for those who did not need a GP

referral was 5 days. Of the 163 patients who have had surgery, none had a cancellation on the day or documented perioperative complications related to hypertension.

Conclusion

In our study, the use of Florence home BP monitoring reduced the number of GP referrals for preoperative high blood pressures by two-thirds, thereby preventing delays in planned surgeries and avoiding any cancellations on the day of surgery.

References

1. National Institute for Health and Care Excellence. Hypertension in adults: diagnosis and management. NICE guideline [NG136]. August 2019; Updated: March 2022

2. The measurement of adult blood pressure and management of hypertension before elective surgery 2016. The Association of Anaesthetists of Great Britain & Ireland and British Hypertension Society. March 2016

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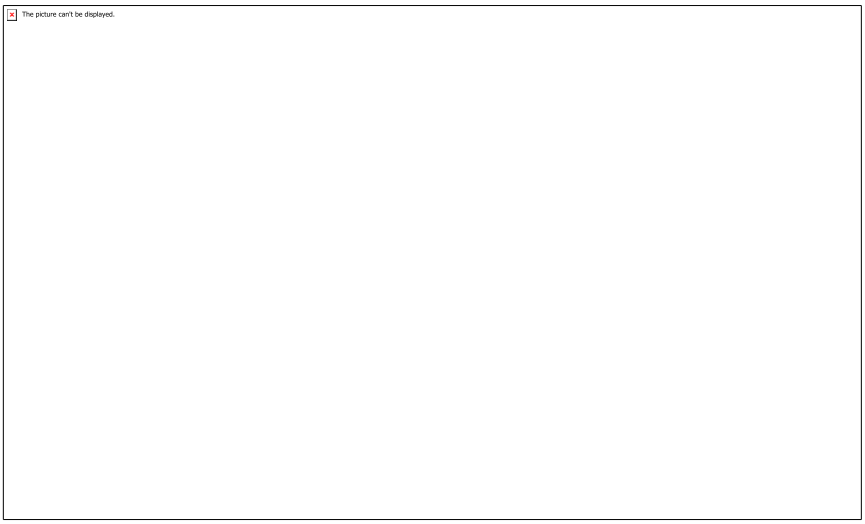

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Poster keywords

Florence, blood pressure, pre-assessment, cancellation, delays

99

Peri-operative Risk Assessment and shared decision making in Frail Older people: A POPS clinic audit

Peter Robinson, Lucy Scott, Ian Mowat, Lynsey Woodward, Laura Gates, Hannah Judd, David Vincent
University Hospitals Dorset, Bournemouth, United Kingdom

Competition Track

EBPOM abstract competition

Abstract

Introduction

Complex, frail and comorbid older patients have significantly increased risks of adverse peri-operative outcomes including impacting on long term functional status[1]. Standard peri-operative pathways often struggle to fully appreciate, mitigate and communicate these risks [2].

There is increasing evidence that a more complete risk assessment enables better shared decision making and provides an opportunity for patients to be better optimised. This is often referred to as "Prehab"[3].

Our POPS@UHD team provide a multidisciplinary peri-operative risk assessment in an outpatient setting (see attached table) ending with clinical recommendations.

Methods

The audit period was from September 2021-Jan 2023. Our referral criteria:

1. Age >65
2. Rockwood Clinical Frailty Score (CFS) 4 or more
3. Additional Clinical risk factors

Risk Domains audited:

1. Rockwood Clinical Frailty Score (CFS)
2. Nutrition assessment (MUST and 3 day food diary)
3. Sarcopenia screening (Sarc F questionnaire and grip strength)
4. Cognitive Assessment (Screening question, Abbreviated mental test score and/or MOCA)
5. Delirium Risk (Delirium Elderly At Risk – DEAR score)
6. Falls Risk (falls questionnaire, Timed up and go Test)
7. Discharge prediction score (Risk assessment and Prediction Tool – RAPT score)

Based on risk domains identified, clinical recommendations were made irrespective of outcome for onward intervention. We present data on those patients requiring optimisation prior to continuing on interventional pathway.

Results

We included all 74 patients. They had mean age of 80 years old, and CFS of 6 (moderate Frailty).

Clinic outcome Recommendation:

- 27 (36%) : proceed with planned intervention
- 16 (26%) : recommend procedure cancelled
- 29 (38%) : recommend proceed after further optimisation/investigation

Risk Domain	**% Screening**	**Positive finding %**
Sarcopenia	95	48
Malnutrition	99	18
Delirium	97	70
Cognitive impairment AMTS MOCA	 84 39	 12 100
Falls Risk	89	74
RAPT	93	81

Conclusions

In a patient cohort selected for frailty, we were able to use a structured approach to patient assessment to produce a multi-domain risk profile. There was high prevalence for the risk factors identified. The AMTS was a poor predictor for cognitive impairment, unlike the screening questions.

We communicated patient-centred risk reduction strategies most commonly around nutrition, cognition, cardiovascular, renal and medication safety.

Communicating this risk during the consultation resulted resulted in a significant proportion of patients declining the proposed intervention. The large majority however continued on their original treatment pathway but with a bespoke set of recommendations to reduce the risks identified.

References:

1. Guideline for Perioperative Care for People Living with Frailty Undergoing Elective and Emergency Surgery September 2021, Centre for Peri-operative Care
2. ChoosingWiselyUK. Choosing Wisely UK. London: AOMRC; 2021 (cited 2021 12 August). Available from: choosingwisely.co.uk/about-choosing-wisely-uk
3. Implementing a system-wide cancer prehabilitation programme: The journey of Greater Manchester's 'Prehab4cancer' Eur J Surg Oncol 2021 Mar;47(3 Pt A):524-532. doi: 10.1016/j.ejso.2020.04.042. Epub 2020 May 1.

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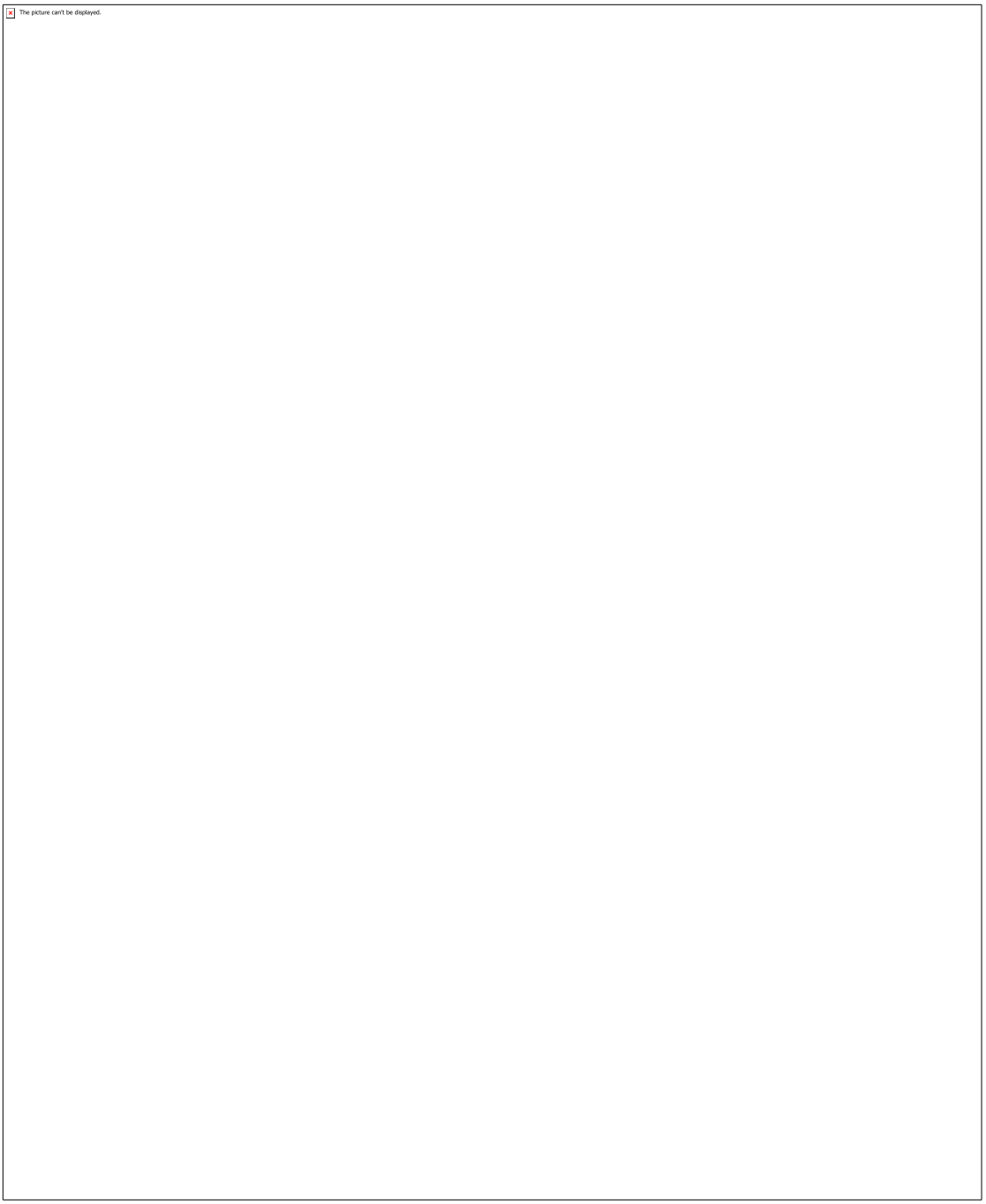

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Poster keywords

Older People, Risk assessment, shared decision-making, Peri-operative clinic, POPS

100

My Medical Record: QI Implementation Study of early digital health screening before major surgery

Frances Wensley[1,2], Melissa Cooper[3], Martyn White[3], Imogen Fecher-Jones[4,3], Carin Dear[3], Michael Celinski[3], Denny Levett[1,2,5]
[1]NIHR Biomedical Research Unit, University Hospital Southampton NHS FT, Southampton, United Kingdom. [2]University of Southampton, Southampton, United Kingdom. [3]University Hospital Southampton NHS FT, Southampton, United Kingdom. [4]NIHR Biomedical Research Unit, University of Southampton BRC, Southampton, United Kingdom. [5]iPOETTS, London, United Kingdom

Competition Track

iPOETTS abstract competition

Abstract

Introduction: Waitlists for surgery should be 'preparation lists', tailored to patients' individual needs.[1] However, identifying patients early in their perioperative pathway is challenging. Digital screening using self-completed health screening questionnaires enables early triage of patients for:

- Optimisation and surgical risk prediction
- Type of pre-assessment (nurse-led, face-to-face or telephone)
- Identification of modifiable risk factors and patient comorbidities requiring action (information, support or optimisation)
- Critical care planning
- List management, including identifying 'waiting well' patients available for last minute slots in theatre lists.

We present a quality improvement (QI) project to evaluate the implementation of digital health screening for early optimisation and optimal resource use in the preoperative pathway at Southampton University Hospital NHS Foundation Trust. We show that early screening is feasible and enables effective patient triaging into high (red), medium (amber) & low (green) risk categories (RAG rating). We discuss how a digital screening programme can be used to guide perioperative care pathways in complex real-world health systems comprising patients with multiple comorbidities across multiple surgical specialties.

Methods: My Medical Record digital screening questionnaire (MyMR) comprises 67 questions, including DASI, REFS, HADS, NRS, previous anaesthetic problems, comorbidities (STOPBANG, cardiac devices), medications (immunosuppressants, anticoagulants), smoking and alcohol use (AUDIT C). It was piloted in high-risk clinic patients and subsequently rolled out across the Trust using different patient contact points: CPET, electronic booking notifications, prehabilitation service and waitlists. A Digital Health Advisor (DHA, Band 3) supported patient enrolment and completion of MyMR to understand and counter digital exclusion. To track the patient pathway, a clinician dashboard was built using locally

developed software for clinician-patient communication. The perioperative medicine team monitored and referred patients based on their responses and RAG ratings.

Results: 824 / 871 patients have successfully been screened using MyMR since October 2021 (**Table**). Of the 95% who completed screening, 20% were 'non-digital' and required significant DHA support. 418 (51%) patients were red in at least one domain, 222 (27%) amber and 184 (22%) all green (**Figure**). The median time spent per patient requiring support was 22 minutes (**Table**). Overall patient satisfaction was high (75% rated MyMR 4 or 5/5).

Conclusion: We demonstrate that early digital health screening is feasible and acceptable to patients. Successful delivery requires DHA support to prompt patients and prevent digital exclusion. Furthermore, triaging and management based on screening results requires a dedicated team to refer, monitor and coordinate different perioperative pathways.

References:

1. CPOC. POAO Guidelines, June 2021. https://www.cpoc.org.uk/preoperative-assessment-and-optimisation-adult-surgery

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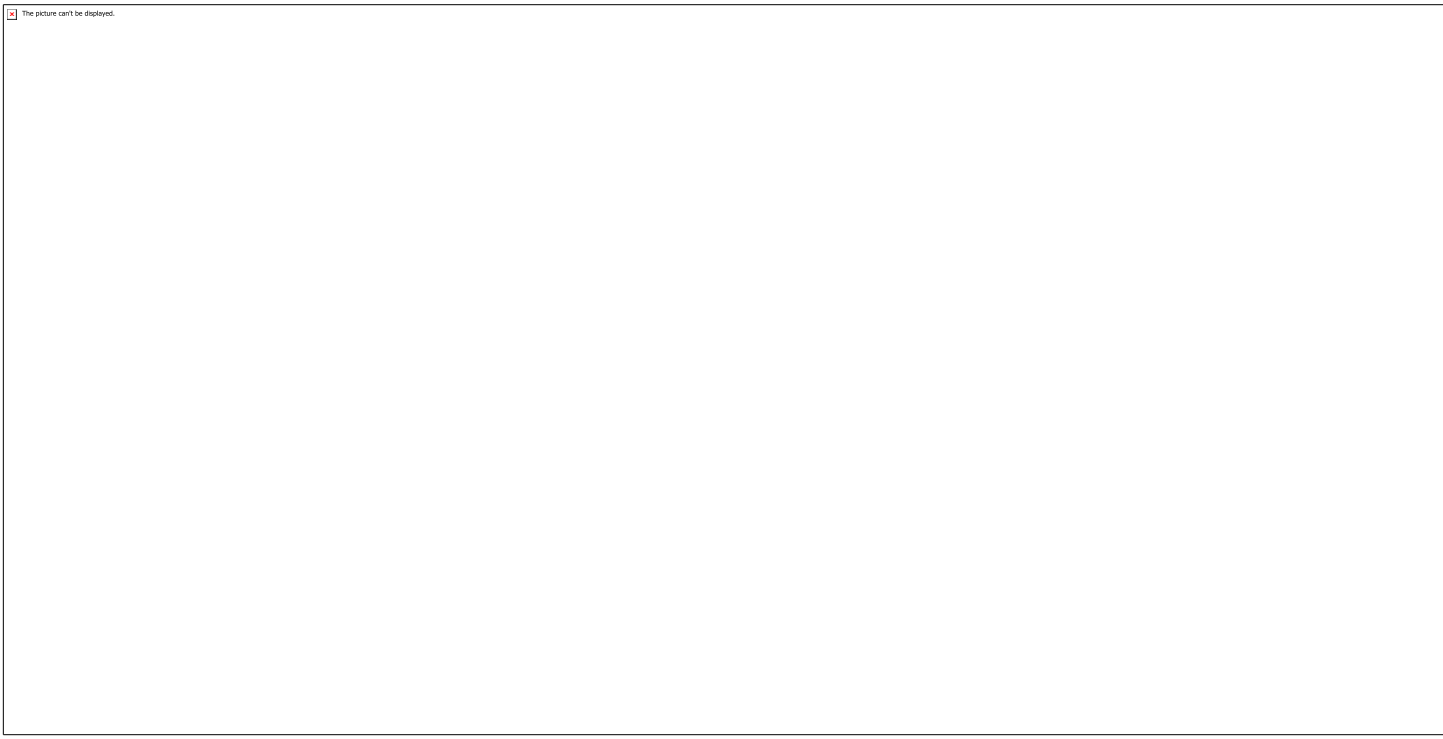

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Poster keywords

digital, health, screening, RAG rating, Early optimisation

101

VARIABILITY IN THE USE OF RETROGRADE AUTOLOGOUS PRIMING IN CARDIAC SURGERY ACROSS CANADA

Arabella Brudney, Sarah Jacobsohn, Emilie Belley-Cote, Jessica Spence
Population Health Research Institute, Hamilton, Canada

Competition Track

EBPOM abstract competition

Abstract

Background: Retrograde Autologous Priming (RAP), compared to crystalloid priming, may reduce hemodilution and resultant blood transfusions in patients undergoing cardiac surgery. RAP is a method used to prime cardiopulmonary bypass circuits (CPB) with the patient's own blood. Maintaining a reliable national blood supply has become increasingly difficult in Canada, and professional bodies have identified the need for strategies to reduce blood transfusion in cardiac surgery, which consumes ~10% of all red blood cell units in Canada each year. In small randomized controlled trials, RAP reduces the incidence of blood transfusion by 40% and results in a 38% reduction in the mean units of blood transfused, such that guidelines suggest its use. However, it is unknown whether RAP is routinely used during cardiac surgery in Canada.

Methods: To identify the variability of RAP use across Canada, we collected standardized, self-administered surveys from the lead perfusionists of the 21 academic cardiac surgery centres in Canada.

Results: We received responses from 21/21 (100%) centres. Of the 21 institutions surveyed, 20 reported using RAP to prime the CPB circuit. Though nearly all centres used RAP in some patients, the proportion of patients receiving RAP at each centre ranged from 5-100%, with a mean proportion of 60% of patients receiving RAP across centres. The perceived contraindications and conditions where RAP may be mandatory at the institution level varied: 85% of respondents reported hemodynamic instability as an absolute contraindication while 10% reported no clear contraindications. Other independently mentioned contraindications were aortic stenosis (15%), surgeon or anesthesiologist opposition (10%), polycythemia (5%), and hypercoagulable syndrome (5%). Additionally, 50% of respondents identified patients unwilling to receive blood transfusion as a mandatory situation for the use of RAP, while 50% reported no clear situations when RAP would be required. Other obligatory situations mentioned by a small number of respondents included treating patients with very rare blood types (5%), baseline anemia (5%), or those with contraindications to transfusions (5%). All surveyed institutions were willing to participate in a future trial examining the routine use of RAP during cardiac surgery on CPB.

Conclusion: Variability in the survey-reported use of RAP across Canadian academic cardiac surgery centres emphasizes the lack of routine CPB priming practices. This variability in practice across centres creates an explicit clinical equipoise and emphasizes the need for a definitive trial to determine the optimal standard operating procedure regarding CPB priming within cardiac surgical care.

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Poster keywords

Cardiac surgery, Blood transfusion, Coronary bypass circuit, Blood supply, Priming

102

The Duke Activity Status Index (DASI) as a Screening Tool for Functional Capacity in Surgical Patients

Frances Wensley[1,2], James Otto[3], Imogen Fecher-Jones[1,2], Gurinder Rayat[3], Mark Edwards[1,2], Sandy Jack[1,2], Denny Levett[1,2,4]
[1]NIHR Biomedical Research Centre, University Hospital Southampton NHS Foundation Trust, Southampton, United Kingdom. [2]University of Southampton, Southampton, United Kingdom. [3]University Hospital Southampton NHS Foundation Trust, Southampton, United Kingdom. [4]iPOETTS, London, United Kingdom

Competition Track

EBPOM abstract competition

Abstract

Introduction: Cardiopulmonary exercise testing (CPET) is the gold standard for the assessment of functional capacity in surgical patients.[1] However, CPET is resource intensive and thus a screening tool may be of benefit to identify a group of patients at low risk of complications who may not need CPET. DASI was developed in heart failure patients to estimate peak oxygen consumption (VO_2 peak).[2] It was recently validated in a general surgical population, however the equation used to estimate VO_2 peak may over-estimate the measured VO_2 peak.[3,4] We evaluated the relationship between DASI, CPET-derived VO_2 peak and surgical outcome in a large prospectively collected database of patients undergoing major surgery in the UK.

Methods: All patients undergoing CPET at University Hospital Southampton completed a DASI. Comorbidities were recorded and surgical outcome data were prospectively collected including length of stay and 30-day mortality. Data were summarised using mean (SD), median (IQR) and number of patients (%) across thirds of DASI. We used generalised linear models to evaluate the association between CPET and DASI create a revised equation to predict VO_2 peak.

Results: Data were available on 3474 patients from 12 surgical specialties. Patients with high DASI were younger, male, had fewer comorbidities and took fewer medications (**Table**). These patients had better CPET results, were more likely to proceed to surgery and had shorter length of stay. DASI was correlated with VO_2 peak and AT (Spearman Rho 0.56 and 0.42, respectively, $P<0.001$). The previous equation to estimate VO2 peak substantially over-estimates patient's measured VO_2 peak in these data. Here, a DASI score of 34 corresponds to VO_2 peak 15.2 ml/kg. 1541 (44%) patients had VO_2 peak less than 15 and 8% of these patients reported a full DASI (58.2).

Conclusion: The correlation between VO_2 peak and DASI is consistent with previous work.[3,5] The revised equation for estimating VO_2 peak based on DASI provides a better estimate of measured VO_2 peak in a surgical population. DASI may be used to screen functional capacity and identify a cohort at low risk of complications to allow the targeting of CPET to high-risk patients.

References:

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2. Hlatky. Am J Cardiol, 1989;64(10):651-654
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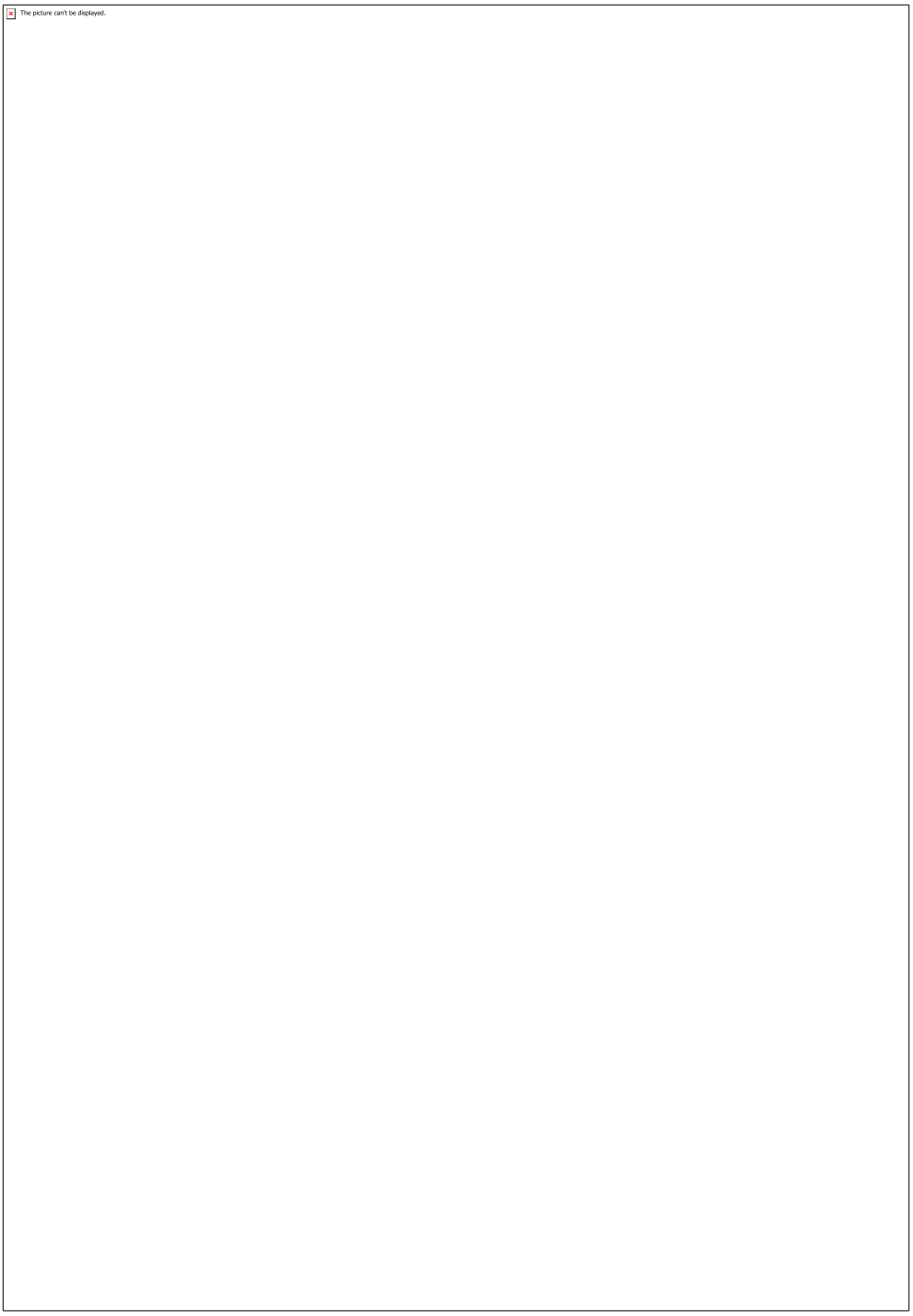

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Poster keywords

DASI, CPET, surgical risk prediction, peak VO2, Perioperative medicine

103

The effect of nutritional screening and stratified dietary support during prehabilitation for thoracic cancer surgery - results from Guy's Hospital, London UK.

Stephanie Wynne, Rachel Bracegirdle, Nicola Peat, Jacqueline Thorogood, Jennifer Stewart, Stephanie Fraser
Guy's and St Thomas' NHS Foundation Trust, London, United Kingdom

Competition Track

iPOETTS abstract competition

Abstract

Introduction: Malnutrition is commonly associated with increased morbidity, mortality and post-operative length-of-stay in lung cancer patients undergoing surgery[1]. Perioperative nutritional support can improve outcomes[2] and is a fundamental pillar of prehabilitation which aims to provide tailored support for patients with cancer[3]. Nutritional screening with stratified dietary support was implemented in the thoracic prehabilitation service at Guy's Hospital as detailed in Figure 1.

Aims: Our aim was to describe the prevalence of malnutrition in a cohort of consecutive lung cancer patients and evaluate the impact of stratified nutritional intervention on pre-operative weight.

Methods: Data was collected for all patients between August 2021-2022 including nutritional risk stratification and number of follow-up appointments. Weight and BMI were collected at baseline prehabilitation assessment (T1) and on admission for surgery (T2). Descriptive statistics and a Paired-Samples T-test (weight change from T1 to T2) were completed.

Results: There were 210 referrals to prehabilitation. Nine patients did not have surgery (n=4 radiotherapy; n=4 surveillance; n=1 further investigation) and one declined. Baseline characteristics of the remaining 200 patients are provided in Table 1.

Patients with specialist dietary needs (n=28/14.0%) had a median prehabilitation window of 28 days (IQR: 15-31) and 2 (IQR: 1-2) dietitian follow-ups. Mean baseline weight and BMI were 62.0 kg (SD: 14.9) and 23.5 kg/m2 (SD: 5.8) respectively. There was a statistically significant increase in weight following specialist intervention of 0.9 kg (95%CI: 0.2 to 1.5, p=0.009) between T1 and T2.

Patients with targeted dietary needs (n=39/19.5%) had a median prehabilitation window of 22 days (IQR: 17-28) and 2 (IQR: 1-2) physiotherapy follow-ups. Mean baseline weight and BMI were 70.2 kg (SD: 11.5) and 25.3 kg/m2 (SD: 3.6) respectively. Weight stability was achieved with targeted advice with a mean change in weight of 0.1 kg (95%CI: -1.0 to 0.9, p=0.907) between T1 and T2.

Conclusion: Specialist and targeted dietary support for lung cancer patients awaiting surgery can address malnutrition. In conjunction with a multimodal prehabilitation service and robust inter-disciplinary communication, we present an innovative approach to triaging and delivering preoperative dietary support. With increased funding, targeted patients could receive additional intervention which may improve outcomes further.

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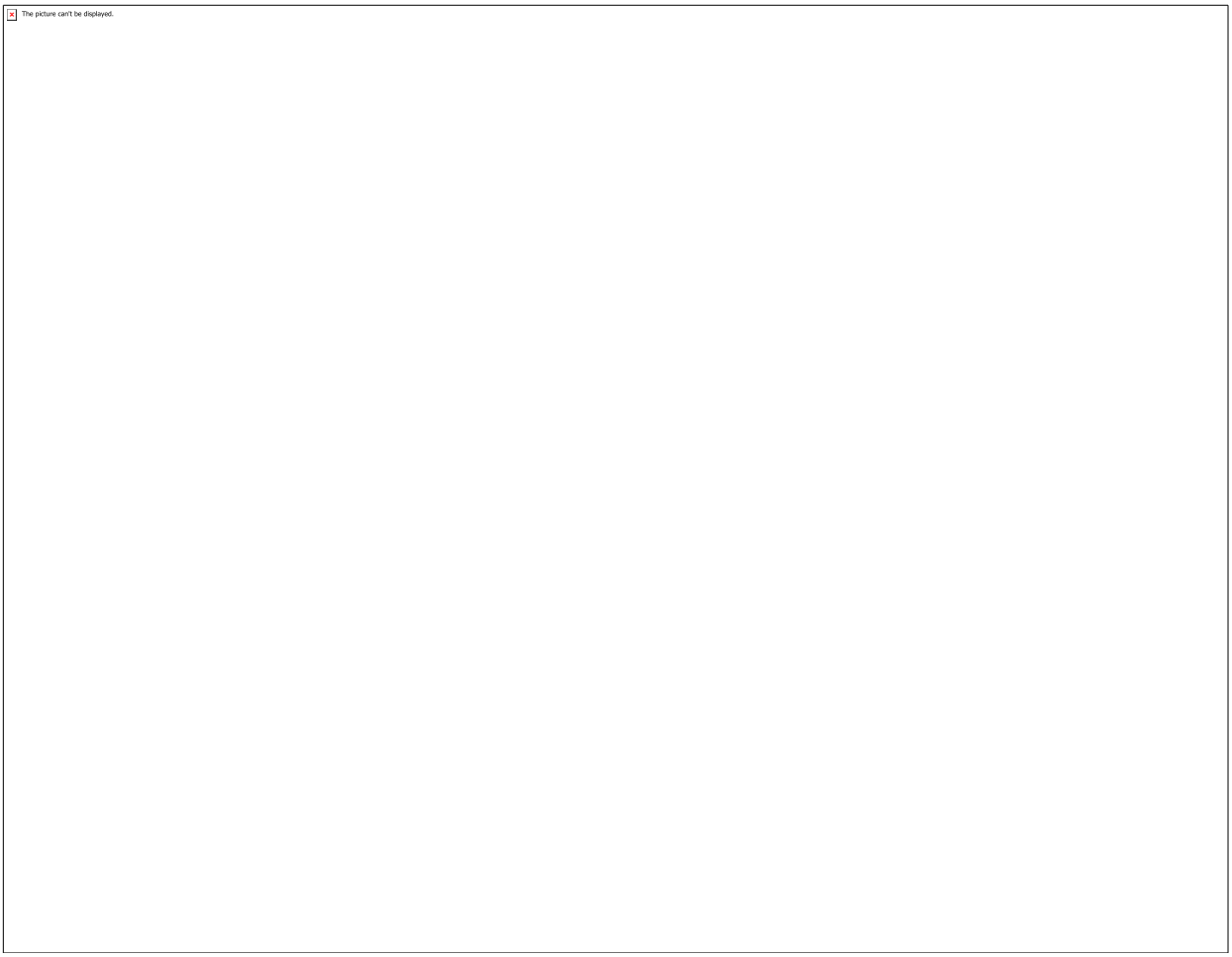

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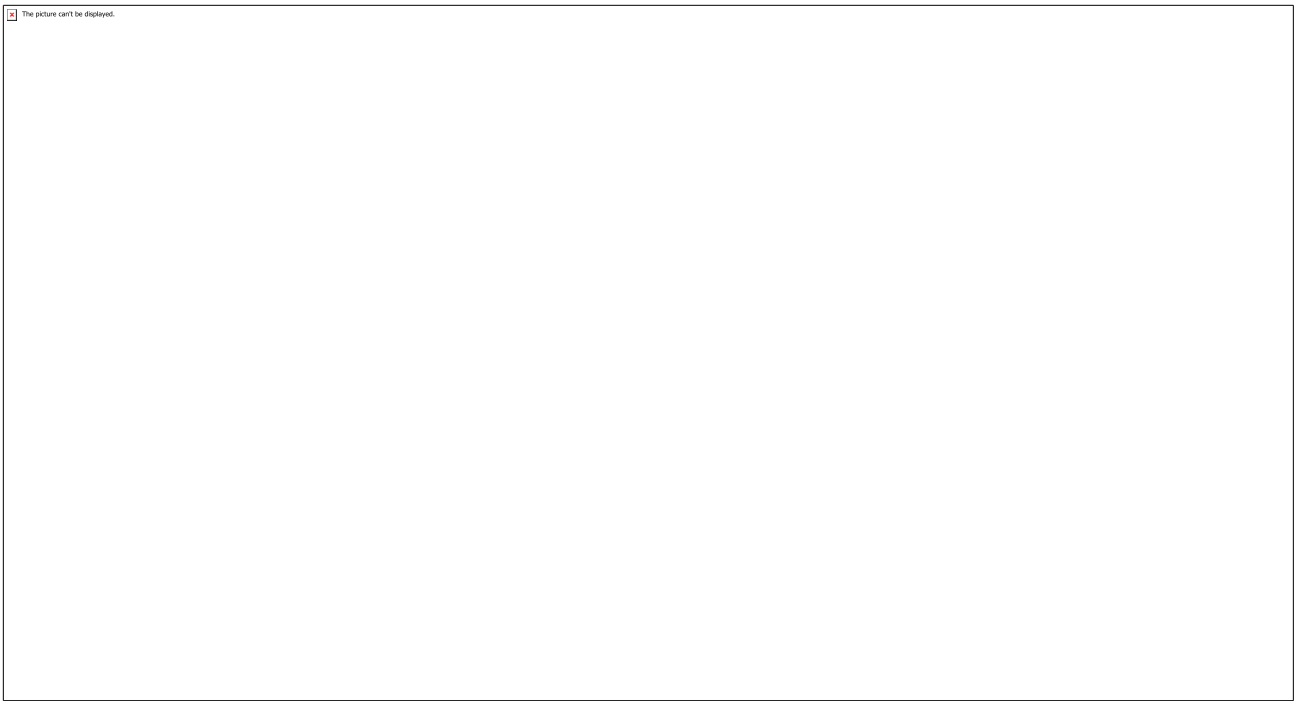

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Poster keywords

Prehabilitation, Nutrition, Diet, Screening, Personalised intervention

104

Can population health platforms and primary care data be utilized for focused prehabilitation?

Nicholas James[1], Lawrence Armstrong[1], Ian Sadler[1], Kathy Hoffmann[2], Graham Jackson[1], Ian Nicholson[3], Andrew Mclaren[1], Caroline Pritchard[1]
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Competition Track

EBPOM abstract competition

Abstract

Introduction

Prehabilitation aims to optimize patient lifestyle factors to reduce perioperative complications. The perioperative period has been associated with an increased receptiveness to making change (1). We have however found that keeping patients "waiting well" is complex. Patients have informed us they are unaware of the importance of lifestyle factors and of the availability of local resources.

To address this, we created an electronic "Dashboard" that amalgamates the surgical waiting list data with data from primary care networks (PCN). Allowing focused analysis and risk stratification, both increasing throughput and allowing rapid identification of patients who are likely to benefit from earlier intervention.

The aims of this initial pilot project were to establish if we could use this "Dashboard" to identify these patients, communicate in an acceptable form and then enact lifestyle change.

Method

With the aid of a behavioral change expert, focused letter templates were created signposting to local education and health coaching resources. We used the dashboard to identify 100 patients with hypertension, obesity or diabetes from two local PCN's. Letters were sent by post and following a 3 month period participants were phoned by a member of the PCN and a structured telephone questionnaire was undertaken.

Results

Questionnaires were completed by 34 patients. 41% (14/34) of these participants acknowledged receiving the letter. Of those 79% (11/14) reported having the co-morbidity the letter referenced and 100% (14/14) of participants found the letters content acceptable.

When asked how the letters made the patients feel; 43% (6/14) expressed positive feelings, 36% (5/14) expressed themes of anxiety or confusion, 21% (3/14) expressing neutral feelings. 36% (5/14) reported positive change in response to the letters, with responses ranging from reducing alcohol intake, increasing exercise and undertaking health research.

Conclusion

In this initial project we were able to demonstrate than we can successfully identify at risk patients on the waiting list and constructively communicate. We were reassured that this low cost intervention was capable of enacting change in a proportion of people. However, the response rates for receiving the letter and responding to the phone questionaries was lower than expected. We now plan to explore digital content delivery, with an aim to incorporate this in the surgical consent process. Then utilizing the “dashboard” for continued identification and focused intervention alongside the traditional perioperative pathway.

1. Teachable moments for health behavior change and intermediate patient outcomes. Flocke et al, Patient Education and Counseling, Volume 96, Pages 43-49

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Poster keywords

prehabilitation, waiting list, elective, surgery, population health

105

Cardiopulmonary exercise variables and their association with postoperative morbidity and mortality after major oesophagogastric cancer surgery – A multicentre observational study

Saqib Rahman[1], Malcolm West[1], Ben Grace[1], Sandy Jack[2,3], Michael Grocott[2,3], John Griffiths[4], Lindsay Ayres[5], Pradeep Prabhu[6], Andrew Packham[7], Helen Anderson[8], Gary Minto[8], Robert Hartley[9], Javed Sultan[9], Timothy Underwood[1], Denny Levett[2,3]
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Competition Track

iPOETTS abstract competition

Abstract

Introduction

Morbidity after resection for oesophageal and gastric cancer remains high. Interest in perioperative investigations to risk stratify patients is increasing, with cardiopulmonary exercise testing (CPET) increasingly being used in the UK. Existing studies have yielded conflicting results, however, have not considered the potentially important deleterious effects of neoadjuvant treatment (NAT). This study explores the relationship between selected CPET variables and post-operative outcomes, with a specific emphasis on patients undergoing NAT, after oesophagogastric (OG) cancer surgery.

Methods

Patients who underwent a potentially curative OG cancer resection and a standardised CPET either before NAT, after NAT or both were enrolled prospectively. Maximal oxygen uptake at peak exercise (VO_2 Peak - primary outcome) was compared to 1-year post-operative survival. Secondary analyses exploring the relationships between selected patient demographics, tumour pathology characteristics, selected CPET variables (CPET variables (absolute, relative to weight, ideal body weight (IBW) and body

surface area (BSA)), and post-operative outcomes (in-hospital morbidity and survival at 1-year and 3-year) were assessed using logistic regression and receiver operating characteristic (ROC) curve analyses.

Results

611 patients from 7 UK centres were recruited and followed up to 3-years. An oesophagectomy was undertaken in 475 patients (78%) and 280 patients had a WHO performance status of zero (54%). Major complications (Clavien-Dindo ≥3a) occurred in 25%, with 18% 1-year mortality and 43% mortality at 3-years. No association was observed between the primary outcome (VO_2 Peak) or other selected CPET variables (absolute or relative) and 1-year survival. VO_2 at AT relative to IBW was significantly associated with 3-year survival(p=0.013). Tumour characteristics (ypT/ ypN/ Mandard Tumour regression/ Lymphovascular invasion/ Resection margin status;p<0.001) and major complications (Clavien-Dindo ≥3a; p<0.001) were significantly associated with 1-year and 3-year survival. Pre-NAT VO_2 at AT ($ml.kg^{-1}$ (p=0.024)), relative to IBW (p=0.001) and BSA (p=0.009) and V_E/VCO_2 at AT (p=0.026) showed significant relationships with 3-year survival. No other CPET variables (pre- or post-NAT) were related with all complications, major complications, 1-year and 3-year survival (Figure 1). Operation type (gastrectomy) OR 0.38; p<0.001 was the only variable significantly associated with a reduced odds of major complications, with poor predictive ability (AUC 0.557). A significant reduction in VO_2 at AT/Peak (absolute and relative) (p<0.001), work rate at AT and peak (p<0.001) and peak power output (p=0.035) all significantly declined with NAT.

Conclusions

Selected CPET variables show no consistent association with, and are poorly discriminatory of, adverse outcomes and survival after OG cancer resection.

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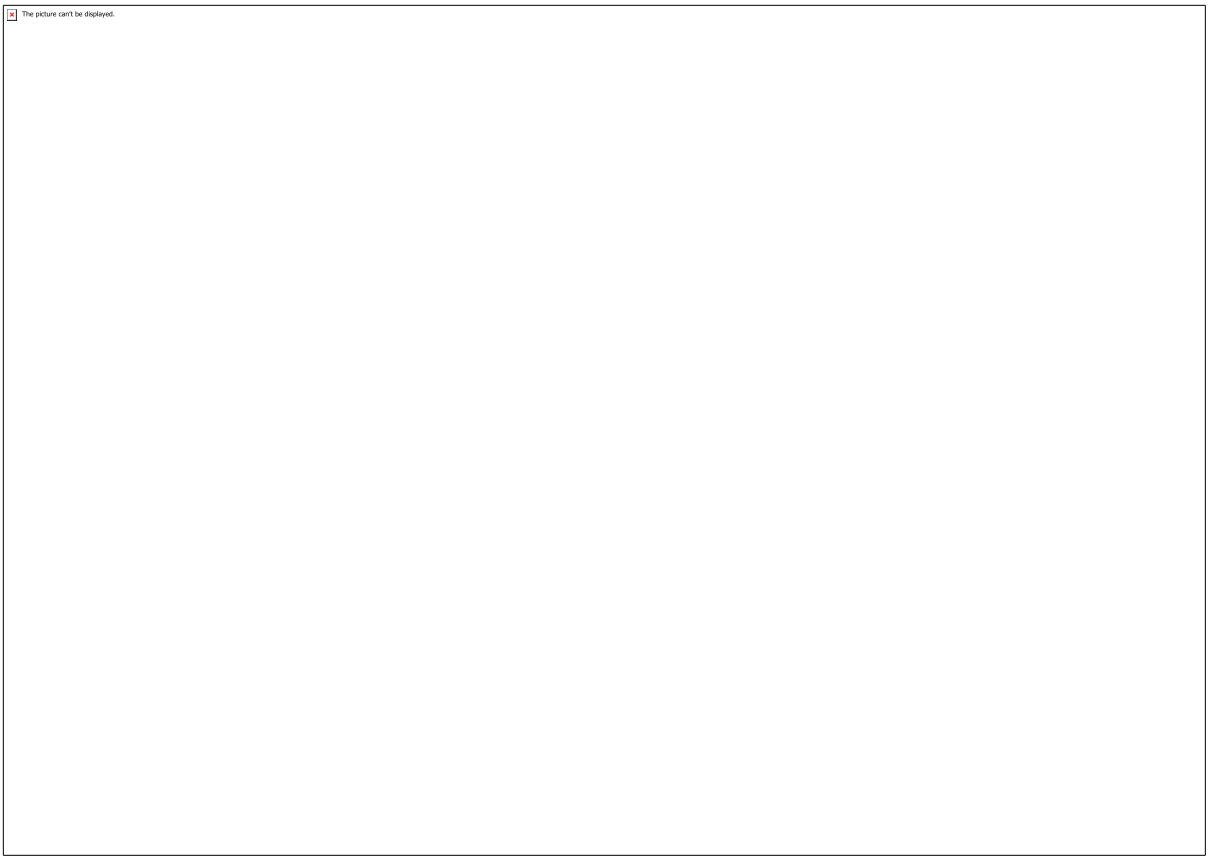

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Poster keywords

cardiopulmonary exercise test, oesophagectomy, surgery, fitness, chemotherapy

106

Multimodal prehabilitation in pacientes listed for heart transplantion improves short-term post-transplant outcomes without increasing costs

Barbara Romano-Andrioni[1], Maria Jose Arguis[1], Elena Gimeno-Santos[1], Ricard Navarro-Ripoll[1], Manuel Lopez-Baamonde[1], Antonio Lopez-Hernandez[1], Silvia Teres[1], Adria Burniol[2], Marina Siso[1], Amaia Pelaez[1], Marta Farrero[1], Elena Sandoval[1], Maria Angeles Castel[1], Graciela Martinez-Palli[1]
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Competition Track

iPOETTS abstract competition

Abstract

Introduction:

Limited aerobic capacity, low exercise tolerance and frailty are highly prevalent in patients awaiting heart transplantation and are tightly related to negatively impacting postoperative outcomes and healthcare resource consumption. Prehabilitation has shown efficacy in improving functional status and preventing postoperative complications in selected high-risk surgical populations. We aim to investigate the impact of a prehabilitation program on the outcomes and costs after HT compared to patients undergoing HT without prehabilitation.

Methods: This is an Ambispective cohort study, single centre university hospital. Dates: from 2017 to 2021

Forty-six candidates for elective heart transplantation attended a multimodal prehabilitation program from which thirty-one patients underwent heart transplantation and their postoperative outcomes were compared to a cohort consisting of patients transplanted from 2014 to 2017 and those twelve contemporaneous not involved in prehabilitation (n=51).

Intervention: Multimodal prehabilitation program consisting of supervised exercise training, physical activity promotion, nutritional optimization, and psychological support.

Main Outcome Measures: Postoperative Comprehensive Complication Index, mechanical ventilation time, total hospitalization and intensive care length-of-stay, destination at discharge (home vs. rehabilitation facility), hospital readmissions at 30 days, and mortality at 30-days, 3-months, and 1-year.

Results:

Significant improvements were observed in functional capacity (endurance time: 293 vs. 632s, $p<0.001$) and quality-of-life (Minnesota score: 58 vs. 47, $p=0.046$) after prehabilitation. No exercise-related events were registered.

Prehabilitation cohort showed a lower rate and severity of postoperative medical complications (comprehensive complication index 37 vs. 31, p=0.033), lower mechanical ventilation time (37 vs. 20 hours, p=0.032), ICU stay (7 vs. 5 days, p=0.01), total hospitalization stay (23 vs. 18 days, p=0.008) and less need for transfer to nursing/rehabilitation facilities after hospital discharge (31% vs. 3%, p=0.009). A cost-consequence analysis showed prehabilitation did not increase the total surgical process costs.

Conclusions

Multimodal prehabilitation before heart transplantation has benefits on short-term postoperative outcomes potentially attributable to enhancement of physical status, without cost-increasing.

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Poster keywords

Prehabilitation, Heart transplantation, Nutritional optimization, exercise training, costs

107

Characterisation of colorectal and complex cancer patients who underwent prehabilitation at a tertiary prehabilitation centre

Abhinav Tiwari[1,2], Charles West[1,2], Martyn White[1,3], Samantha Leggett[1,3], Lesley Hawkins[1,3,4], James Otto[1,3], Toran Williams[1,3], Gurinder Rayat[1,3], Imogen Fecher-Jones[1,3], Melissa Cooper[1,3], Sally-Jane Kendell[1,3], Judit Varkonyi-Sepp[1,3,5], Lisa Poole[1], Michael Grocott[1,3,4], Malcolm West[1,2,3], Sandy Jack[1,3,4], Denny Levett[1,3,4]
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Competition Track

iPOETTS abstract competition

Abstract

Introduction

Prehabilitation refers to a set of multimodal interventions that aims to optimise patients' physical, nutritional, and psychological status prior to surgery. For patients undergoing major abdominal surgery, reduced pre-operative physical fitness and frailty are associated with inferior post-operative outcomes. The aim of this study was to characterise the colorectal and complex cancer patients who underwent prehabilitation at a teaching hospital.

Methods

A prospectively collected database was used to identify all colorectal and complex cancer patients who underwent prehabilitation. Alongside basic demographics, baseline Duke Activity Status Index (DASI) scores, Reported Edmonton Frailty Scale scores, body mass index (BMI), percentage weight loss in the last six months, self-reported nutritional intake, and whether they had an exercise prescription was collected. A RAG (Red, Amber, Green) rating was assigned based upon the score for each category. Each patient was assigned an overall 'nutrition' rating which was defined as the lowest RAG rating out of their BMI, percentage weight loss and nutritional intake. Patients were then grouped into three cohorts; those who had surgery, those awaiting surgery, and those who were not for surgery.

Results

157 patients were included. 91(58%) were male and the mean age was 68.6 (SD 12.4). 146 patients (93%) were referred as part of a cancer diagnosis. Of these, 60 patients (41%) had colon cancer, 41(28%)

had a locally advanced complex cancer, 25(17%) had rectal cancer and 20(14%) had other types of colon cancer.

85(54%) patients had surgery; 25(29%) had a right hemicolectomy, 18(21%) had exenterative surgery and 12(14%) had an anterior resection. Of 72 patients who had not undergone surgery, 57(79%) were awaiting surgery, 10(14%) were deemed not fit for surgery or had metastatic disease, and 5(7%) declined surgery or died.

Of patients who had surgery, 51/85(60.0%) had a green DASI score, 69/85(81.2%) had a green Edmonton Frailty Scale score and 50/85(58.8%) had a green 'overall' nutrition rating. Patients awaiting surgery had similar characteristics (Table 1).

Of 121 patients with available data, all patients were offered universal prehabilitation interventions (surgery school seminar and a prehabilitation App (MyOp) which incorporates behavioural change support), 91 (58%) did not need an exercise prescription, and 30 (19%) underwent a targeted/specialist exercise intervention. No adverse events were reported during exercise.

Conclusion

Multimodal prehabilitation assessment and intervention can be feasibly implemented within the constraints of a colorectal surgery NHS pathway, especially in those with locally advanced complex cancers.

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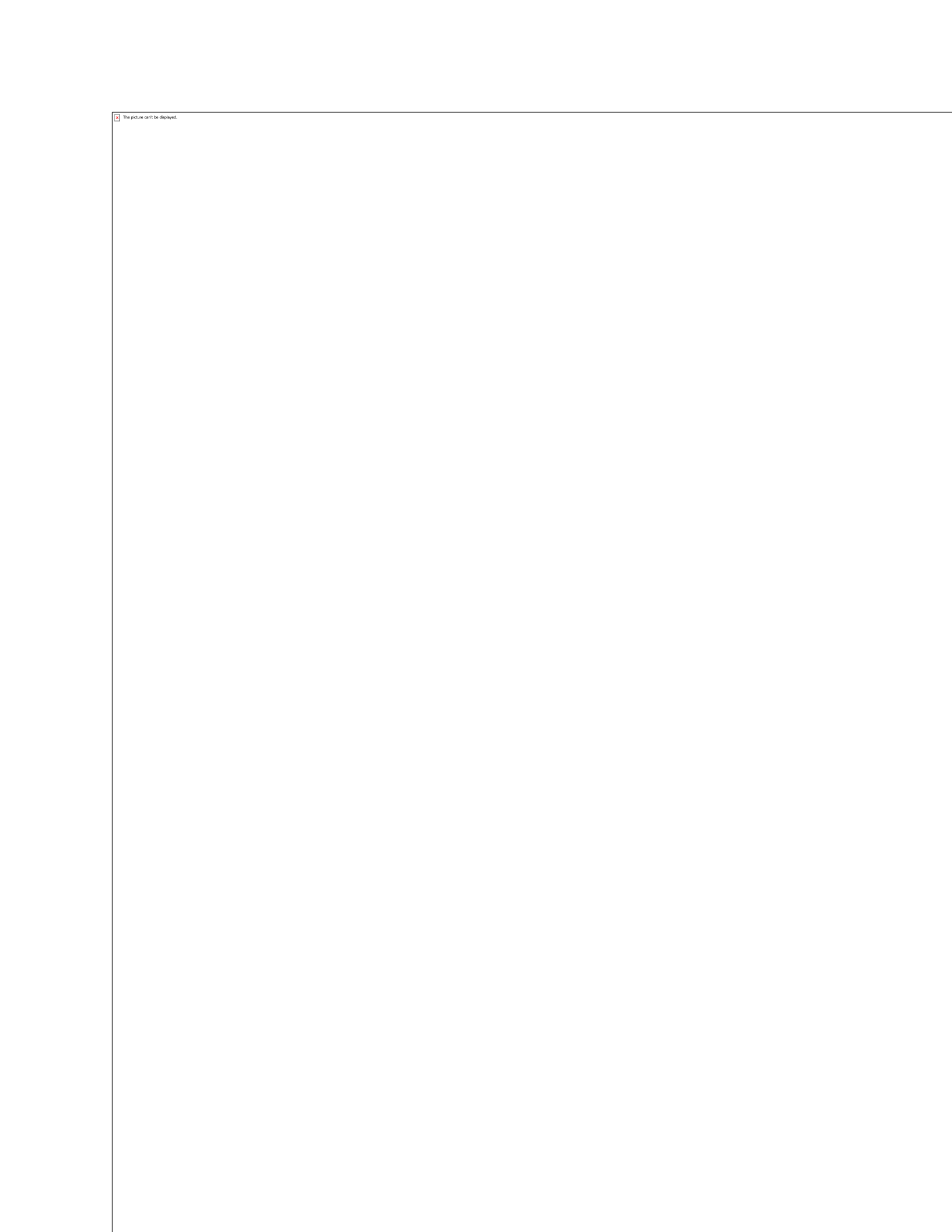
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Poster keywords

Prehabilitation, Cancer, Complex cancer, Colorectal, Exercise

108

The current landscape of reported outcomes in randomized trials of surgical prehabilitation: A scoping review

Chloé Fleurent-Grégoire[1], Nicola Burgess[2], Lara Edbrooke[2], Dominique Engel[3], Giuseppe Dario Testa[4], John Moore[5], Stéphanie Chevalier[1,6], Linda Denehy[2], Chelsia Gillis[1,7]
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Competition Track

iPOETTS abstract competition

Abstract

Background: The evidence supporting prehabilitation before surgery remains of low certainty in part because of the heterogeneity across reported outcomes. Key priorities have been identified to improve certainty of the evidence which includes developing a consensus for a core outcome set (COS) for prehabilitation research. An important first step to guide consensus is to have a clear understanding of what is currently being reported. Objectives: To describe what, how, and when outcomes measures are reported across surgical prehabilitation trials.

Eligibility Criteria: Randomized controlled trials (RCT) of unimodal or multimodal prehabilitation interventions of at least 7 days in adult patients undergoing elective surgery.

Methods: The final search was conducted in February 2023 (MEDLINE, EMBASE, PsychInfo, Web of Science, CINAHL, and Cochrane). The scoping review was designed using the methodological guidance of Arksey and O'Malley and following the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) checklist. Data extraction and charting was performed by 3 independent reviewers according to the conceptual framework of the International Society for Pharmacoeconomics and Outcomes Research (ISPOR). Quantitative data were reported as frequencies (n, %).

Results: 1257 unique articles were identified and 76 met the inclusion criteria. Most trials were exercise only (n=41, 54%) or multimodal interventions (n=25, 33%) and included cohorts of abdominal (n=26, 34%), orthopedic (n=20, 26%) and thoracic (n=14, 18%) surgery. A total of 163 different clinical outcomes assessments and 14 biomarkers were identified. Nearly all trials included observer-reported outcomes (n=65, 86%) with hospital length of stay being the most reported. Both clinician-reported and performance outcomes were included in 78% (n=59) of studies, and postoperative complications using

the Clavien-Dindo classification and cardiopulmonary exercise testing measured as peak oxygen consumption were the most frequently reported. Patient-reported outcomes were documented in 76% (n=58) and most often as health-related quality of life using the 36/12-Item Short Form Survey questionnaire. Adherence to the intervention was stated to be collected in 70% of trials (n=53), but only 61% (n=46) actually reported the data. A limited number conducted a cost analysis (n=6, 8%) and time points used were highly variable for the same outcome measure.

Conclusion: Current reporting of outcomes across surgical prehabilitation was diverse in terms of outcome assessment methods and time points. Identifying common and meaningful outcomes for both patients and health systems will be an important next step in developing a COS to harmonize data reporting and enable meta-analyses of trial effects.

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Poster keywords

surgical prehabilitation

109

Development of a multivariable predictive model to estimate 6-Minute Walk Test performance in the preoperative assessment of oncologic patients

Jaume Borrell-Vega[1], Maria del Mar Montané-Muntané[1], Raquel Sebio-Garcia[2], Ruben Gonzàlez-Colom[3], Beatriz Tena[1], Fernando Javier Dana[1], Marina Sisó[4], Amaia Peláez[1], Betina Campero[4], David Capitán[1], Graciela Martínez-Pallí[1]
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Competition Track

iPOETTS abstract competition

Abstract

Introduction

Assessment of exercise capacity has become routine clinical practice in several populations given its prognostic value across multiple conditions, including patients undergoing major surgery. Among the available direct and indirect measures of physical functioning, the 6-Minute Walk Test (6MWT) is the most used thanks to its simplicity, affordability and excellent reliability, replicability and reproducibility [1]. As a result, the test is commonly performed to stratify and categorized patients according to their exercise performance. However, despite the 6MWT's excellent reliability and repeatability, a practice test is recommended to account for the learning effect [2], which significantly increases the time consumed to perform it. In addition, a course length of ideally 30 meters is needed, further hindering its application in most facilities.

Based on previous publications, patients walking less than 400m during the 6MWT are the most likely to improve their functional status with multimodal prehabilitation [3]. As so, easy identification of these patients without the need to actually perform a 6MWT could save time and resources and increase the scalability and coverage of preoperative cancer clinics worldwide.

Therefore the aim of this study was to investigate the association between the 6MWT and other indicators of physical status in preoperative cancer patients.

Methods

This prospective longitudinal study included moderate-to-high surgical risk cancer patients referred to a prehabilitation program. Data collection included sociodemographic and anthropometric data, comorbidities, performance status (Duke Activity Status Index – DASI), nutritional status (serum albumin

levels), mood (Hospital Anxiety and Depression Scale – HADS), handgrip strength, functional capacity (6MWT, 30" Sit-to-Stand Test) and physical activity levels (Yale Physical Activity Survey – YPAS). Bivariate associations were determined using Pearson's correlation coefficient for the 6MWT and other variables. Multivariate analyses were performed to identify potential predictive factors of 6MWT in this population.

Results

Between mid-2018 to early 2022, 433 patients were assessed of whom the 6MWT was performed in 299 (69%) (mean age 71.2±10.5 years; 53.2% men). Moderate-to-strong correlations were found between 6MWT and 30"Sit-To-Stand Test (r=0.56, p<.001), DASI (r=0.69; p<.001), YPAS (r=0.41, p<.001) and handgrip strength (r=0.47; p<.001). Multivariate analyses confirmed that seven easy-to-obtain variables in clinical practice were able to predict up to 80% of the variance in the 6MWT with a margin of error of 71m.

Conclusion

Performance on the 6MWT in preoperative cancer patients can be derived from a combination of simpler indicators of physical functioning and patients' comorbidities.

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Poster keywords

6MWT, preoperative, exercise, prehabilitation, cancer

110

Feasibility and efficacy of multimodal prehabilitation in patients awaiting duodeno-cephalo pancreatectomy: preliminary results from a prospective cohort study

Enrique Lacoba Díaz[1], Raquel Sebio García[2], Mar Montané-Muntané[1], Marta Ubré[1], Raquel Risco[1], Manuel López[1], Marina Sisó[3], Betina Campero[3], Filippo Landi[4], Jordi Farguell[4], Fernando Javier Dana[1], Graciela Martínez Pallí[1], Fabio Ausania[4]
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Competition Track

iPOETTS abstract competition

Abstract

Introduction

Duodeno-cephalo pancreatectomy (DCP) is a highly aggressive surgical procedure frequently associated with a high incidence of postoperative complications (30-50%)[1]. Decreased cardiorespiratory fitness (VO2peak) has been related to an increased risk in surgical complications in several surgical procedures, including DCP[2]. The aim of this study was to determine preliminary feasibility and efficacy of multimodal prehabilitation to increase cardiorespiratory fitness in patients awaiting DCP for pancreatic cancer.

Methods

Prospective cohort study. Patients awaiting DCP for pancreatic cancer were screened for surgical risk by means of a CardioPulmonary Exercise Test (CPET). Patients with an anaerobic threshold (VO2AT) <11ml/kg/min were labelled as high risk and were referred to the Prehabilitation Unit. Multimodal prehabilitation including nutritional optimization and supplementation, stress reduction and behavioural change and supervised exercise training three times per week were provided to optimize functional capacity. Patients were assessed by a multidisciplinary team at baseline and before surgery. Main outcomes were: i) difference between pre and post-prehab in maximal (VO2peak) and submaximal (VO2AT) exercise capacity after prehabilitation; ii) feasibility and adherence to the intervention.

Results

Between January 2021 and March 2023, 49 patients were screened for eligibility and 46 performed a baseline CPET (one patient was not eligible and two were too frail to perform the test). Twenty-four

patients (49%) were classified as high risk according to a VO2AT <11ml/kg/min. Multimodal prehabilitation was feasible (prehabilitation duration ≥3 weeks) in 20 patients (83.3%) and patients completed a median of 10 sessions (IQR 3.75) with adherence reaching 83% (IQR 27). Only 14 patients (58%) performed a CPET pre-surgery, mostly due to logistic reasons (n=8) or disease progression (n=2). A significant increase was found in VO2peak mL/min/kg (Z=2.229, p=.026), VO2AT mL/min/kg (Z=2.956, p=.003) as well as maximum and submaximal load (Z=3.301, p<.001 and Z=2.937, p=.003 respectively). After multimodal prehabilitation, 14/24 patients (58%) were able to achieve a VO2AT of ≥11ml/kg/min.

Conclusion

Multimodal prehabilitation seems feasible in patients awaiting DCP and could result in an increase in cardiorespiratory fitness and therefore decreased surgical risk.

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Poster keywords

Duodeno-cephalo pancreatectomy, Exercise capacity, CPET, Prehabilitation

111

Utilising surgical waiting time to optimise patient modifiable risk factors following the implementation of Achieving Success Preparing for Surgery (AS:PiRe) - A report on patient experience.

Lynn Valentine[1], Elliot Tilling[2], Sarah Sullivan[2]
[1]Queen Elizabeth University Hospital, Glasgow, United Kingdom. [2]Institute of Neurological Sciences, Queen Elizabeth University Hospital, Glasgow, United Kingdom

Competition Track

EBPOM abstract competition

Abstract

Introduction:

Following the introduction of AS:PiRe at the Institute of Neurological Sciences (INS) Glasgow, we aimed to investigate empowerment of patients to use time prior to elective surgery to optimise their physical and mental health, particularly with current increased waiting times.[1] We aimed to determine if patients thought AS:PiRe would be useful to them and if they subsequently optimised their lifestyle.

Our unit undertakes neurosurgery and oral and maxillofacial surgery, with a unique patient cohort; they are more likely to be smokers and have limitations to traditional exercise regimes.

Methods:

Prehabilitation leaflets and posters were designed and displayed in the neurosurgical Pre-assessment unit. For a two-month period (October and November 2022) all patients were consented and given information on AS:PiRe by the pre-assessment nurses. Exclusion criteria included surgery within 2 weeks.

Two questionnaires were asked. Patients graded their answers from strongly agree, agree, neutral, disagree to strongly disagree. The first questionnaire determined if patients thought the prehabilitation information would be useful to them. The second performed via telephone 2-3 months after their appointment determined if they had used the information to make lifestyle changes.

Results:

28 patients over the two-month period were given information and leaflets on AS:PiRe - 19 patients were followed up for both questionnaires (No follow-up was possible for 9 patients).

15/19 (79%) patients strongly agreed or agreed the information would be useful to them and they would alter their lifestyle

4/19 (21%) felt neutral about the information.

14/19 (74%) patients found the AS:PiRe leaflet easily accessible

15/19 (79%) found the information provided useful

14/19 (74%) used the content in the leaflet to make changes to their lifestyle.

Two people stopped smoking.

Global alcohol consumption was reduced.

Increased exercise and better eating habits were observed.

Increased pre-operative weight loss

Conclusion:

AS:PiRe was successfully implemented in our unit. Patients believed AS:PiRe would be beneficial to them and made significant lifestyle changes. Our patients were incredibly positive about AS:PiRe: having the knowledge and opportunity to be empowered to improve their health prior to surgery.

We continue to evaluate the impact of patient information we provide and in the future we aim to explore the use of pre-habilitation applications to improve patient readiness for surgery. Ultimately, to improve outcome and reduce morbidity and mortality.

Reference:

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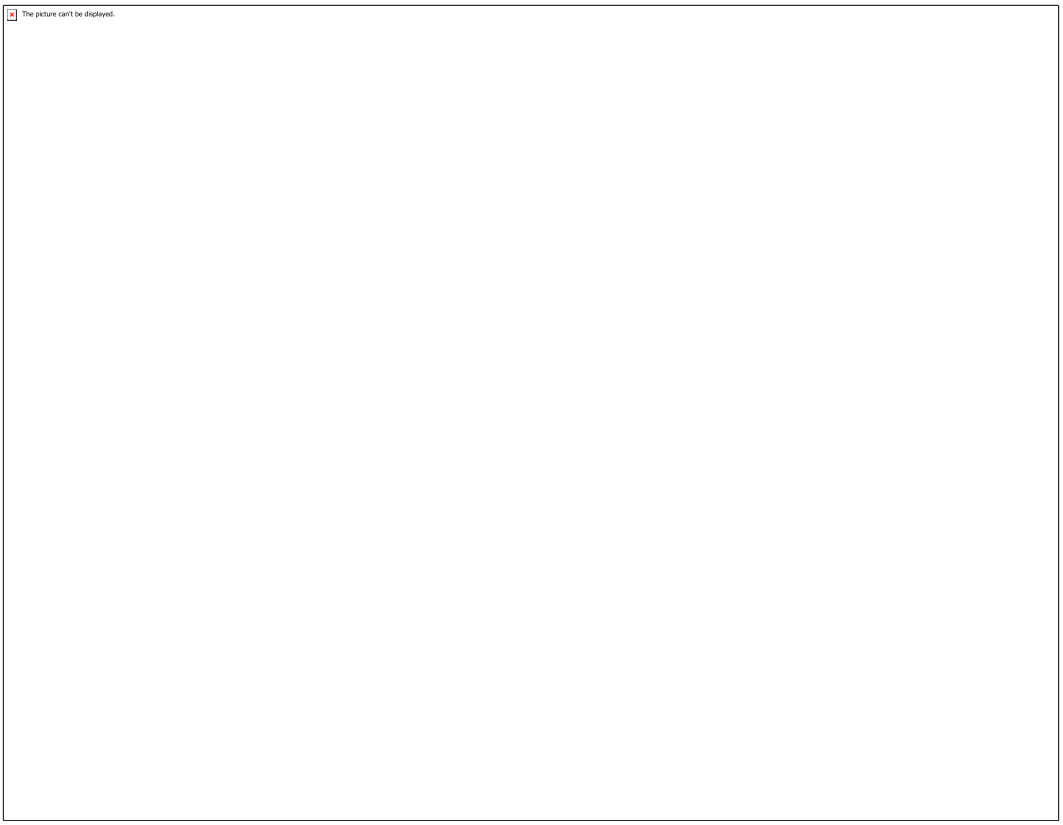

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Poster keywords

Aspire, Patient empowerment , Prehabilitation, Fitness, Glasgow

112

Perioperative anaemia screening and treatment in patients undergoing major elective surgery

Kate Millar, Sanya Patel, Michael Waring, Aine Heaney
Guy's and St Thomas' NHS Trust, London, United Kingdom

Competition Track

EBPOM abstract competition

Abstract

Introduction

Anaemia is a recognised predictor of adverse perioperative outcomes such as increased rate of perioperative blood transfusion and postoperative morbidity and mortality[1,2]. It is present in around a third of patients undergoing major surgery[2]. NICE have produced detailed guidance setting out requirements to offer iron before surgery to patients with iron deficiency anaemia (IDA)[1]. Screening and treatment of perioperative anaemia is an area of clinical priority in the Commissioning for Quality and Innovation (CQUIN) financial incentive scheme[3]. Improved CQUIN compliance would reduce blood transfusion rates, and associated patient safety risks, such as transfusion reactions, fluid overload and infections[2,3]. In addition, it is estimated that consistent uptake of screening to 60% would deliver annual savings of £3 million, through lowering transfusion rates, reduction in critical care stays and saved bed days[3]. To be CQUIN compliant, 60% of major elective surgery patients must be treated in line with NICE guideline NG24[3].

Methods

We retrospectively reviewed the current perioperative anaemia pathway within our trust and data collated from three quarters in 2022: April – June; July – September; October - December. We identified the number of patients undergoing major elective surgery, those that are screened for anaemia, and those that are subsequently treated with IV iron. From this data we can determine our trusts current CQUIN compliance (Figure 1.).

Results

The results for 1600 patients across three quarters (April to December 2022) are displayed in Table 1. Within our trust we were CQUIN compliant (>60%) across all three quarters.

Conclusions

Analysis of our data for the first 3 quarters of 2022 show above maximal compliance with CQUIN targets for screening and management of perioperative anaemia in patients undergoing major elective surgery.

This is important for improving patient outcomes, but also contributes towards financial savings and reducing strain on NHS perioperative services. Limitations of our study are that we were not able to include patients with IDA treated with oral iron, but this would likely increase our compliance even further. Continued analysis of our data will allow us to target areas within our perioperative pathway to make further improvements towards 100% compliance.

References

1. NICE NG24: Blood transfusion, NICE Guideline, 18 November 2015; https://www.nice.org.uk/guidance/ng24/resources/blood-transfusion-pdf-1837331897029

2. Centre for Perioperative Care, Guideline for Management of Anaemia in Perioperative Pathway, V2.0, 4 November 2022; https://cpoc.org.uk/sites/cpoc/files/documents/2022-11/CPOC-AnaemiaGuideline2022-Updated-Nov2022.pdf

3. NHS England, Commissioning for Quality and Innovation(CQUIN): 2022/23 Guidance, V1.2, 17 March 2022; https://www.england.nhs.uk/wp-content/uploads/2022/01/B1477-i-cquin-22-23-march-2022.pdf

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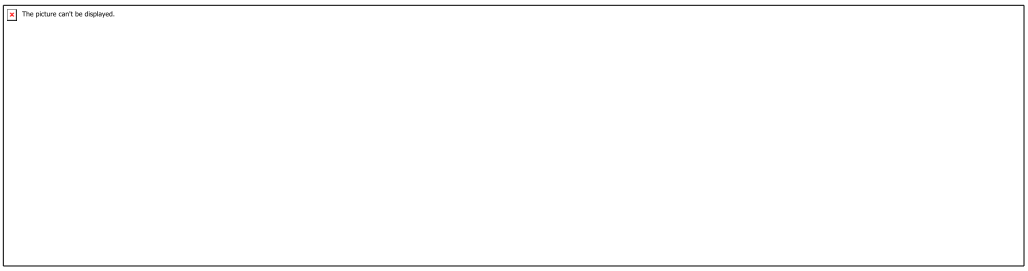

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Poster keywords

Anaemia, CQUIN, Iron Deficiency, Intravenous Iron, Major Elective Surgery

113

The impact of prehabilitation on post-operative recovery in upper gastrointestinal surgical patients

Rebecca Lim, Olivia Chapman, Jessica Lipman, Amy Dewar, Nicholas Tetlow, Adam Beebeejaun, Zeshan Bhatti, Alys Johns, John Whittle
University College London Hospital, London, United Kingdom

Competition Track

EBPOM abstract competition

Abstract

Introduction:

Prehabilitation is an emerging concept within healthcare, aiming to optimise perioperative fitness, nutrition, and medical status to improve patient outcomes, thus, reducing the risk of surgical complications and the length of inpatient stays. The UCLH Prehabilitation Service launched in November 2021 and accepts referrals from most surgical pathways, including upper gastrointestinal (UGI).

The UGI population is associated with greater surgical risks commonly due to malnutrition and lower levels of cardiovascular fitness,[1] thus, this population was the focus of our analysis. We aimed to compare the recoveries of prehabilitation patients who underwent an oesophagectomy/gastrectomy versus the un-referred population. Key endpoints were length of inpatient stay, days taken to mobilise post-surgery, proportion of patients sitting out on Day 1 post-surgery, and the number of physiotherapy contacts during recovery.

Methods:

Data were collected retrospectively using electronic health records. UGI patients were identified and either received prehabilitation input or proceeded without intervention. All patients underwent UGI surgery and were admitted to the Post-Anaesthesia Care Unit (PACU) following surgery, and have now been discharged. All patients were seen by physiotherapists on Day 1 post-surgery for both respiratory and rehabilitation purposes. Both groups received physiotherapy treatment until they had returned to their functional baseline or a suitable level of function for discharge.

Results:

Among 35 patients included,16 received prehabilitation and 19 did not. The average ages were 70 and 63 years in the prehabilitation and non-prehabilitation groups, respectively. Key findings are shown in Table 1. Our numerical data suggest the prehabilitation group were faster to mobilise and were more likely to sit out on Day 1 post-surgery, compared with the non-prehabilitation group. Prehabilitation patients required fewer physiotherapy contacts to return to pre-operative functional baseline or a level

suitable for discharge versus non-prehabilitation patients. The non-prehabilitation population generally scored lower on the ICU mobility scale and faced more barriers that prevented physiotherapy treatment versus prehabilitation patients, including pain and hypertension (data not shown).

Conclusion:

Our analysis showed that patients who received prehabilitation were quicker to mobilise post-operatively and were more likely to sit out on Day 1. These findings highlight the advantage of prehabilitation for the UGI surgical population through faster post-operative functional recovery.

References

1. Le Roy et al. BMJ Open. 6. 1-7. 2016.

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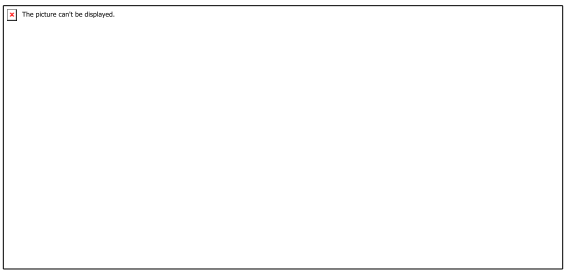

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Poster keywords

Prehabilitation, Physiotherapy, Recovery, Peri-operative, Upper gastrointestinal

114

Evaluating digital health literacy in older surgical patients: a pilot study

Harriet Hall, Amelia Paveley, Judith Partridge, Jugdeep Dhesi
Guy's and St Thomas' NHS Foundation Trust, London, United Kingdom

Competition Track

EBPOM abstract competition

Abstract

Introduction

Innovative digital tools such as prehabilitation apps can benefit surgical patients and are increasingly used. To ensure these tools are useful to and usable by patients, they should be coproduced with surgical patients. With older adults forming an increasing majority of the surgical population[1], it is necessary to better understand digital health literacy and usage in this age cohort.

Methods

Step 1 - A questionnaire was designed to assess digital usage, digital health literacy and attitudes to digital tools, incorporating the Digital Health Literacy Instrument (DHLI), Health Literacy Survey (HLS)-EU-Q6 and Newest Vital Sign (NVS).

Step 2 - A pilot study was conducted to assess acceptability and feasibility of this questionnaire evaluating digital health literacy, digital usage and attitudes to digital tools in older surgical patients attending a preoperative assessment clinic. Patient demographics, acceptability and feasibility data were collected.

Results

All eleven patients (n=11) who were offered the questionnaire in clinic agreed to complete it. Mean age was 79 (range 67-91), mean Edmonton Frail Scale of 4 (0-9). Nine patients provided feedback, with five finding the questionnaire acceptable. Completion time was 15 minutes on average. Across all questionnaires, 88.3% of the questions were completed.

Median HLS-EU-Q6 score was 2.3 (‘problematic health literacy’), median DHLI was 1.5. Of seven patients completing the NVS section, five demonstrated adequate health literacy.

Nine owned a mobile phone, most (six) being smartphones. Eight used the internet at least monthly, and seven used apps. Six owned a tablet device, desktop or laptop computer. Five reported using the internet to search for information about their health, though only one had searched for information

regarding their operation. Three were digitally excluded and did not have internet access. Ten of the eleven patients preferred information about surgery via traditional means (written, verbal).

Conclusion

This questionnaire examining digital health literacy, digital usage and attitudes to digital health tools is both feasible and acceptable in older adult surgical patients .

Most patients surveyed had access to digital devices and the internet, with variable health and digital health literacy.

The next stage is to use this questionnaire to examine health and digital health literacy in a multicentre study.

References

1. Fowler, A. J., Abbott, T. E. F., Prowle, J., & Pearse, R. M. (2019). Age of patients undergoing surgery. The British journal of surgery, 106(8), 1012–1018.

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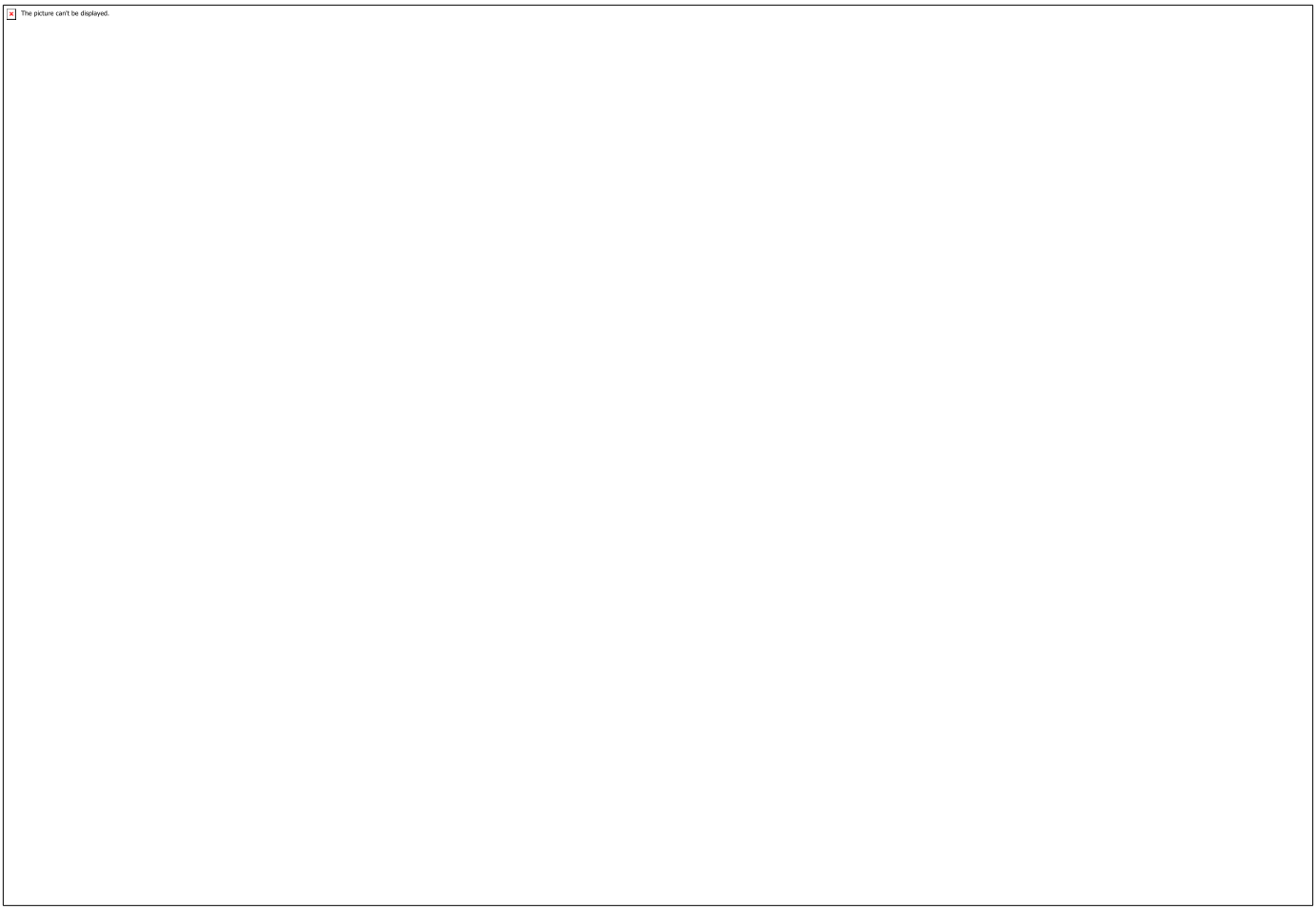

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Poster keywords

Health and digital literacy, Digital literacy, Perioperative medicine, Prehabilitation, Health literacy

115

Transforming surgical waiting lists into preparation lists

Rowan Pritchard-Jones[1,2], Robbie Huddleston[3], Mark Ratnarajah[4]
[1]Cheshire & Merseyside Integrated Care Board, Merseyside, United Kingdom. [2]St. Helens and Mowsley NHS Trust, St. Helens, United Kingdom. [3]Surgery Hero, London, United Kingdom. [4]C2-Ai, Cambridge, United Kingdom

Competition Track

EBPOM abstract competition

Abstract

INTRODUCTION:

The objective of this service evaluation was to assess the impact of targeted prehabilitation, supported by individualised patient risk stratification, on reducing surgical complication rates.

METHODS:

C2-Ai is a machine-learning tool that quantifies patient risks based on underlying pathophysiology, clinical course, and comorbidities. The tool uses complex datasets to determine patients' risks of postoperative complications.

This study focused on postoperative pulmonary complications (PPCs) as the primary outcome, due to the correlation with unplanned ICU admissions and postoperative mortality[1]. Enrolment criteria were set at ≥5% risk of PPCs for referral to Surgery Hero.

Once referred to Surgery Hero, each patient was matched with an accredited health coach and given access to the Surgery Hero learning platform, which was personalised according to each individual's modifiable risk factors for surgery.

Secondary outcome metrics included hospital LoS, postoperative complications, unplanned ICU admissions, 30-day readmission rate, changes in self-rated health scores, and patient satisfaction.

RESULTS:

615 patients were eligible with an uptake rate of 24.4%. The data presented are for the first 150 members to complete the programme with a matched cohort of non-participants used as the control group. The median age was 63 years, with 66% female and 34% male.

We observed a 56% reduction in all-cause complications, with 0% of patients experiencing a PPC (versus 5.2% in the control group), and an average 4.2-day reduction in LoS. Estimated cost-saving per patient was £2,100.

Self-rated scores for nutrition improved by 5% and mental wellbeing by 15%. No change was seen for physical activity and sleep. Satisfaction was high, with an average of 8.5 out of 10.

CONCLUSION:

Individualised risk assessment and perioperative health coaching can be effective in reducing complications, leading to a reduction in LoS and significant cost savings. Since 10-25% of elective surgery patients have >10% complication risk, this has significant implications for reducing harm.

The relatively low uptake of 24.4% is of concern and is being addressed by the addition of a preoperative nurse specialist to follow up patients who decline the initial offer, and closer working with hospitals to identify patients with sufficient time before surgery.

Our findings highlight the value of targeted prehabilitation according to risk in reducing surgical complications. However, further work is required to ensure maximal adoption.

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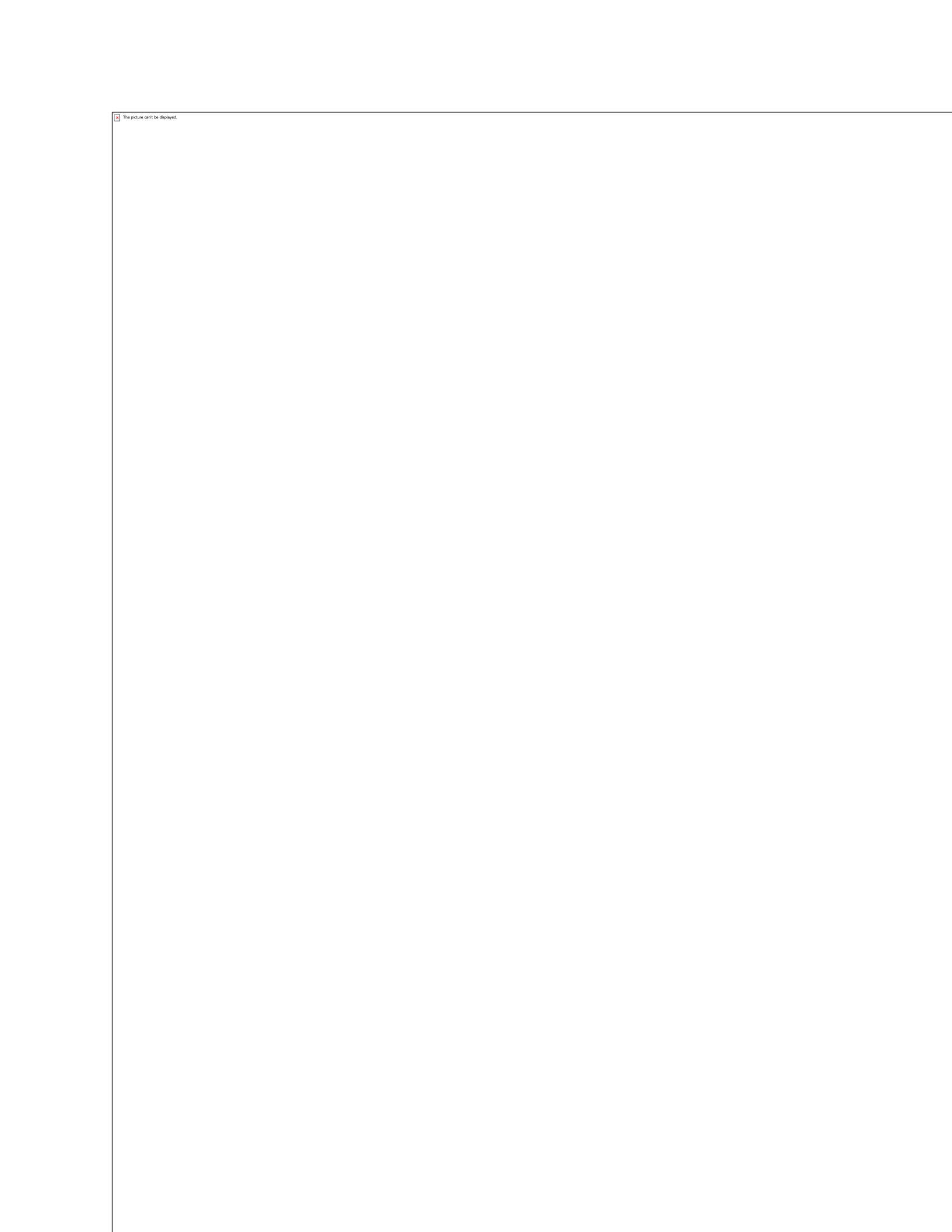
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Poster keywords

Prehabilitation, Health coaching, Perioperative care, Digital health, Health technology

116

Metabolic inflexibility assessed by cardio-pulmonary exercise testing is associated with the development of postoperative morbidity and reduced all-cause survival at 1 and 5 years after radical cystectomy

Nicholas Tetlow[1,2], Amy Dewar[1,2], Daisy Jarvis[1,2], Jack Colbert[1,2], Adam Beebeejaun[1,2], Krishna Vinnakota[1,2], Pietro Arina[2], Ashwin Sridhar[3], John D. Kelly[3], Robert C.M. Stephens[1], Daniel S. Martin[4], Ramani Moonesinghe[5], Don M. Milliken[6], John Whittle[1,2]
[1]University College London Hospitals NHS Foundation Trust, Department of Anaesthesia and Perioperative Medicine, London, United Kingdom. [2]University College London, Department of Targeted Intervention, Centre for Perioperative Medicine, UCL Human Physiology and Performance Laboratory (HPPL-UCL), London, United Kingdom. [3]University College London Hospitals NHS Foundation Trust, Department of Urology, London, United Kingdom. [4]University of Plymouth, Peninsula Medical School, Plymouth, United Kingdom. [5]University College London, Department of Targeted Intervention, Centre for Perioperative Medicine, London, United Kingdom. [6]The Royal Marsden Foundation Trust, Department of Anaesthesia and Perioperative Medicine, London, United Kingdom

Competition Track

EBPOM abstract competition

Abstract

Introduction

Metabolic inflexibility is characterised by reduced ability to regulate substrate metabolism in response to changes in metabolic demand. Assessment of an individual's ability to appropriately utilise glucose (CHOox) reflects cellular metabolism(1). Availability of substrate for metabolism could play a mechanistic role in the development of morbidity. We hypothesise that reduced peak CHOox during CPET is associated with the development of postoperative morbidity and reduced survival at one-year and five-years after cystectomy.

Methods

Between November 2015 & February 2017, we prospectively collected CPET data in patients undergoing cystectomy. Maximal CHOox (g/min) was derived from CPET. Morbidity was defined as presence or absence of POMS and/or discharge on day 7. All-cause mortality was assessed at one-year and five-years. Receiver operating characteristic (ROC) curve analysis assessed discrimination of CHOox for morbidity. Optimal cut-offs were selected based on ROC curve inspection for morbidity and used to assess differences in mortality. Chi-square test with odds ratio was used to assess difference in morbidity proportions. Kaplan-Meier analysis with the log-rank test and hazard ratios assessed time-to-

event distribution differences. Analyses were performed using GraphPad Prism. Significance set at $p<0.05$.

Results

Among 85 patients who underwent CPET and cystectomy, 56 (66%) had POMS-defined morbidity (Table 1). CPET parameters were not different between morbidity groups. Fourteen patients (17%) had died at one-year and 34 (40%) at five-years.

CHOox was a moderate discriminator of morbidity: AUROC of 0.65 95%C.I.(0.52-0.78); p=0.0210 and outperformed AT, VE/VCO2 at AT and Peak VO2 (Table 1). Optimal cut-off was 2.23 g/min; 71% sensitivity; 62% specificity. Patients with low CHOox had increased risk of POMS-defined morbidity (78% vs 47%); OR 4.1 95%C.I.(1.5-9.9); p=0.0028.

Differences in all-cause mortality existed (Figure 1) for A) one-year mortality in patients with CHOox <2.23 g/min with a HR of 4.5 95%C.I.(1.5-12.8); p=0.0322 and B) five-year mortality for patients with CHOox <2.23 g/min with a HR of 2.2 95%C.I.(1.1-4.4); p=0.0348.

Conclusion

CPET-derived metabolic inflexibility is associated with the development of morbidity and outperformed traditional CPET parameters (AT, VE/VCO2 and Peak VO2). CHOox <2.23 g/min discriminated between patients with and without morbidity. One-year and five-year mortality hazards were significantly different when dichotomised at the CHOox optimal morbidity cut-off. Impaired CHOox may be a candidate mechanism for the development of morbidity and reduced survival.

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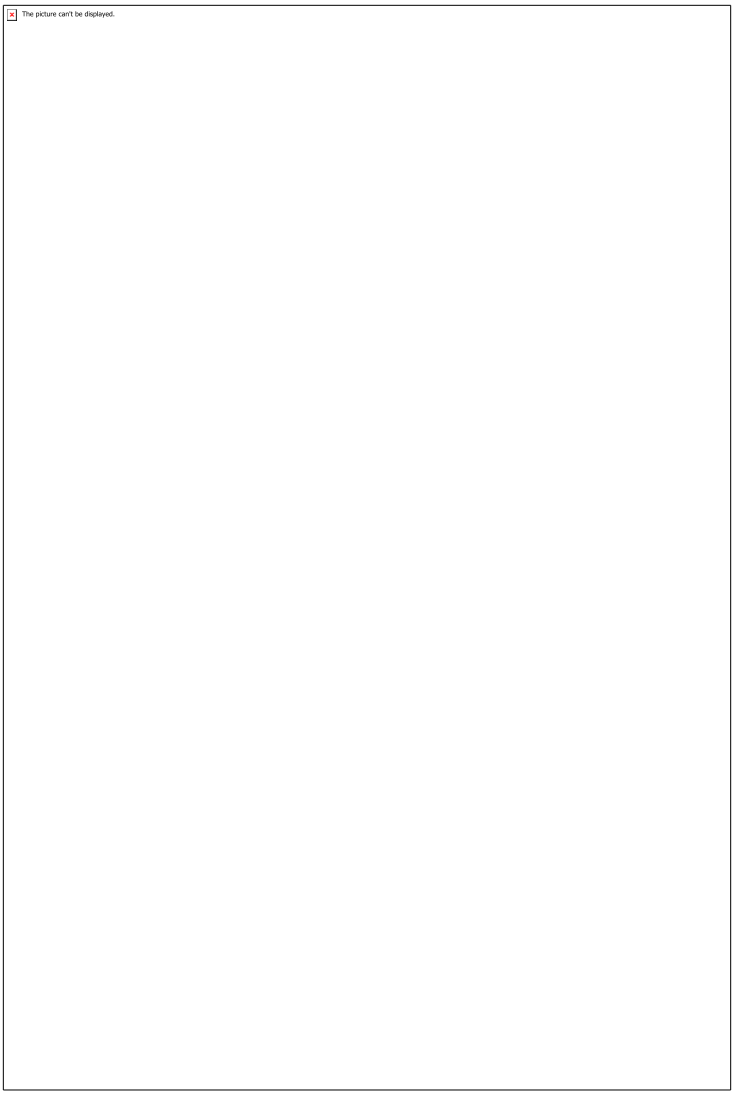

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Poster keywords

Metabolic Inflexibility, CPET , Morbidity, Survival, Cystectomy

117

Working across the Primary Care and Secondary Care Interface: Delivering a healthcare system-wide approach to pre-treatment health optimisation and prehabilitation - the Prehab2Rehab (P2R) Programme.

Rachael Barlow, Marian Jones, Rachel Lee, Zoe Hicks
Cardiff and Vale University Health Board, Cardiff, United Kingdom

Competition Track

iPOETTS abstract competition

Abstract

Introduction

Integrating primary: secondary systems is essential for safe, timely and effective healthcare, but is hard to achieve. Barlow et al, 2018 highlighted the need for primary care optimisation and prehabilitation 'MOT' for people referred via cancer pathways, concluding that 44% had a health concern requiring intervention. Due to the impact of the pandemic on the general health of our population, delays in diagnostic pathways coupled with the volumes of people waiting for treatments, commencing P2R in primary care has become more important than ever. In 2022, the SNAP-2 (EpiCCS) study concluded that 4% of all elective cases were cancelled for reasons that could have been prevented by earlier risk assessment and remedial health optimisation and prehabilitation.

We have incorporated this into our system-wide approach termed Prehab2Rehab (P2R). Here we report on the primary care-initiated aspects.

Methods

Development phase:

1. Baseline analysis of the GP records of a subgroup of 2019/2020 patients referred via cancer pathway was undertaken using the Quarter Master evaluation tool developed for P2R by ViPC (www.ViPC.co.uk).
2. The 2018 published MOT 'bundle' was updated in response to speaking to patients/ clinicians about their beliefs for current cancellations or delays.
3. The new P2R 'bundle' was embedded in GP data systems (www.Visionhealth.co.uk) for ease of use in routine practice.
4. A standard operating procedure was signed by participating GP practices in line with corporate governance, essential for subsequent and continuous data sharing between primary and secondary care clinicians.

Implementation phase:

In September 2020, people referred via the cancer pathway were eligible for P2R from one GP cluster. Patients were assessed by the P2R team using a virtual consultation (due to COVID-19) using the newly update P2R 'bundle'.

Results

The baseline analysis showed high levels of deprivation, high incidence of co-morbidities (50% COPD, 11% iron deficiency anaemia, 14% hypertension).

To date, P2R initiated in primary care has supported ~400 people, with high level of uptake and satisfaction reported from patients. Improved outcomes include polypharmacy reductions, lifestyle changes, identification and optimisation of comorbidities, treatment of anaemia to name a few. All inactive patients were referred to exercise schemes.

Value-based healthcare analysis revealed return on investment from drug cost savings and smoking cessation alone. Full data available Spring 2023.

Conclusion

Primary care P2R is needed due to high level of health concerns seen in people referred via the cancer pathways. It is well received; and offers valued based healthcare. Further work is now ongoing to 'spread and scale' to those facing long planned care waits due to the legacy of the covid-19 pandemic.

References

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Niaa-hsrc.org.uk accessed April 2023

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Poster keywords

prehab2rehab

118

Cancer Prehabilitation: Real-World Experiences from a System-Wide Healthcare Setting in Wales, the Cardiff and Vale Prehab2Rehab Programme.

Rachael Barlow, Erica Thornton, Annette Beasley, Tessa Bailey, Joshua Tipple, Jemima Cull, Claire Jarrom, Rhiannon McDonald, emily johns
Cardiff and Vale University Health Board, Cardiff, United Kingdom

Competition Track

iPOETTS abstract competition

Abstract

Introduction

People undergoing cancer treatments often develop peri-treatment complications, prolonging recovery times, delaying completion of cancer pathway and reducing survival. Cardiff and Vale's (CAV) Prehab2Rehab (P2R) programme aims to identify patients early in their cancer pathway, at suspicion i.e referred via their GP, at point of diagnosis for people who reside within CAV, or at decision to treat for our tertiary patients. To our knowledge, this is the first system-wide programme in the UK delivering prehabilitation across the primary and secondary care interface.

Methods

The P2R programme delivers multi-modal prehabilitation and health optimisation as part of routine care. Recurrent funding was awarded from Cardiff and Vale University Health Board in 2020. Our team includes nurses, anaesthetists, surgeons, pharmacists, oncologists, cardiologists, prehabilitation assistant practitioners, physiotherapists, dietitians and an occupational therapist amongst others.

Patients referred undergo risk assessment, stratification and multi-modal interventions, either face-to-face or virtual. These interventions include medicines management, nutritional and lifestyle advice and support, inspiratory muscle training, frailty and fatigue management and timely pharmacy and cardiology input as needed. Exercise prescription is delivered either via community gyms, group-based or home-based exercise programmes and combines cardiorespiratory fitness, resistance training and Tai Chi.

Results: 1020 patients have been referred to P2R between November 2021 and April 2023 from 5 tumour sites. Median age 65 years (range 28-93). Of those who attended 48% were at nutritional risk (PG-SGA>4), 20% were at risk of sarcopenia (SARC-F>4) and 83% reported they were either moderately or completely inactive. Extreme anxiety (GAD-7 score >10) was reported in 11% of people. People who attended within 5 days of referral was 13% (n=130/1025). For those who completed follow up session post prehab intervention, and before their first definitive treatment, statistically significant improvements were seen in 6-minute walk test +50m (95% confidence interval: 25-74; P<0.001), and

nutrition risk as reflected by PG-SGA. Early data suggests a 1-day reduction in hospital stay with those who attended the P2R interventions. Further analysis is ongoing to link this to pre-treatment risk and uptake and adherence to P2R interventions. Patient satisfaction is 93%.

Conclusions

Early results indicate that P2R is accepted by clinicians and patients, is needed, warranted and may benefit functional and clinical outcomes as reflected in improved recovery times. The challenge going forward is how to ensure the finite resources allocated to P2R can benefit all people diagnosed with cancer, or are waiting for planned care. A 'spread and scale' plan has been developed within a value-based healthcare framework as part of our covid-19 pandemic recovery plan.

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Poster keywords

cancer prehabilitation

119

A Covid-19 initiative - Can we support patients waiting for surgery by using an innovative 'nudging' approach? A new method to support the move to preparation lists?

Rachael Barlow
Cardiff and Vale University Health Board, Cardiff, United Kingdom

Competition Track

EBPOM abstract competition

Abstract

Introduction

Over 7.22 million people are waiting for surgery across the UK (1); ~3 million waiting over 18 weeks. The resultant distress cannot be underestimated. Supporting those people waiting is essential. People's behaviours influence their health and also their recovery from surgery. Thematic communication via familiar methods (e.g. texting), 'nudging', can change health behaviours (2). We set out to determine if 'nudging' patients on the waiting list was feasible, acceptable and useful.

Aim

A Covid-19 initiative to determine if 'nudging' was useful, acceptable and promoted opportunities to support patients by providing prehabilitation style advice.

Inclusion Criteria

All adult patients (18 and older) with an open Referral to Treatment (RTT) clock were included. Exclusion: specialties that declined to participate, cancer, day case, and paediatric patients.

Methods

From March 2020, a working group with representatives from Public Health, Primary Care, Nursing, Anaesthetics, Surgery, Allied Health and Patient Experience. A UK scope of relevant online 'prehab' content was performed. Subsequently, an evidence based digital booklet was co-produced with our patients input. Eligible patients were identified and baseline demographics (age, gender, deprivation

codes) alongside specialty were obtained using health records. All relevant governance procedures were followed. Patients were stratified as to those with a mobile phone; those patients received a bi-lingual SMS message containing a website link using the UHB agreed external service provider (Envoy Messenger SoftwareTM). All prehab content was uploaded to the keepingmewell.com website. Bespoke patient feedback surveys were sent one week after each nudge message.

Results

The initiative took place over 12 months. In total 3135 patients were eligible. Of these 572 (19% did not have a mobile phone registered). The majority were orthopaedic (n=1670) and general surgery (n=501). There was no difference in deprivation risk for those with or without a mobile phone. In total 9112 health messages were sent over a 12 month period. The success rate was 93% for delivery. Table 1. below summarises part of the results. Overall the majority of the patients who responded, found all the nudges useful and informative, with a health behavioural change reported by 40-72% of people who received each nudge.

Table 1. Summary of Nudges Delivered and Responses from Participating Patients

Nudge	Delivered	Patient feedback	Response	Informative?	Changed Behaviours?
Prehab booklet	1685	1511	696	92%	72%
Healthy Eating	1894	1883	587	90%	70%
Mindfulness	1637	1636	418	84%	65%
Alcohol advice	1351	1349	422	83%	55%
Smoking	1282	1282	373	94%	40%
Physical Activity	1263	679	288	60.4-76.2%	40-58%

Conclusion

Nudging could offer the NHS a low cost, health value approach to supporting our patients as they wait for their surgery. Our innovation appears to be well received by our patients and also suggests a change in health behaviour. This approach is important to support the NHS respond to the 'backlog' of the pandemic. Further work is underway to explore the use of quality of life questionnaires to support the planning of our patients. We are also actively promoting the narrative of preparation lists rather than waiting lists.

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Poster keywords

covid 19

120

Pre-operative anaemia and associated intraoperative blood transfusion in patients undergoing orthopaedic surgery at a university hospital.

Dr.Jaszmin Sonia Kaur Rugber Singh, Dr.Vipul Kaushik
University Hospitals of Leicester NHS Trust, Leicester, United Kingdom

Competition Track

EBPOM abstract competition

Abstract

Introduction :

Pre-operative anaemia is a significant risk factor for adverse peri-operative outcomes and studies have suggested that it has been identified as a significant predictor of blood transfusion during surgery. However, blood transfusions themselves can increase patients' morbidity and mortality. Recently, the National Health Service (NHS) Blood and Transplant has triggered an “amber alert” due to low level of blood stocks nationally. Hence, adherence to patient blood management (PBM) is crucial to avoid blood loss and enable rational use of blood products.An audit was conducted to investigate the adherence of PBM along with associated outcomes.

Methods :

The audit reviewed 244 patients retrospectively, who underwent orthopaedic surgery over a four-weeks period. A proforma was generated, distributed and completed pre-operatively. Information such as type of surgery, haemoglobin levels, interventions and transfusion records were collated in an Excel spreadsheet Patients were classified as anaemic if their haemoglobin levels were <120g/L for females and <130g/L for males.

Results :

Of the 224 patients observed, 19.5% were diagnosed with anaemia, with 54% of cases being females and 46% males. Among those diagnosed, 75% had mild anaemia, while the remaining 25% had moderate anaemia. A significant 20% of patients with anaemia had their scheduled surgeries cancelled, and 11% required a blood transfusion during the perioperative phase, with complex hip replacement surgery being the primary contributor. Furthermore, an analysis of pre-operative anaemia with regards to comorbidities revealed that patients with cardiovascular disease, such as hypertension, were the primary contributors, followed by diabetes and liver disease.

Conclusion :

This audit highlights inadequate adherence towards the PBM guidelines. A peri-operative anaemia pathway should be established, which includes interventions to correct anaemia, such as treatments to increase pre-operative haemoglobin and iron stores. Initiating oral iron or administering intravenous iron therapy can be effective and safe interventions, though underutilised in anaemic patients. Collaborating with fellow primary care colleagues can be a pivotal step towards correcting anaemia pre-operatively, resulting in cautious use of blood products. Although postponing elective surgery may result in patients having to endure their symptoms longer, it is a cost-effective method of preventing blood transfusion through the treatment of anaemia.

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Pre-operative Anaemia, Perioperative Medicine, Anaesthesia, Orthopaedic Surgery, Surgery

121

Accessible and sustainable prehabilitation: developing and applying the first stakeholder-informed logic model for prehabilitation programs

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Abstract

Background: Prehabilitation programs treat modifiable risk factors to improve surgical outcomes. However, translation of research to practice remains slow due to lack of implementation guidance. Furthermore, prehabilitation has never been evaluated from a health services perspective to understand if these programs are aligned with the priorities of key stakeholders. The objective of our study was to understand what stakeholders believe should be the mission, range of services, patients served, and outcomes measured for prehabilitation clinics.

Methods: We employed convergent mixed methods to evaluate an existing prehabilitation program from stakeholder perspectives. Data collection involved (1) Prospective quantitative data of consecutive patients seen at a prehabilitation clinic within a tertiary care hospital (September 2021 to October 2022), (2) semi-structured interviews through snowball and purposive sampling followed by a focus group for member checking. Quantitative and qualitative data were analysed using descriptive statistics and thematic analysis respectively. Interview questions pertained to the logic model components.

Results: The prehabilitation clinic treated 184 patients and 71 interviews were conducted with patients, prehabilitation staff, hospital staff, and administrators. Preliminary results suggested 4 themes: 1) Underutilization: While all stakeholders perceived preoperative preparation to be beneficial, misconceptions about the program's mission and target population impeded widespread uptake of the program. For instance, surgeons did not use the program because of fear of delaying cancer surgery, yet cancer patients spent a median 48 days [28-85] in the program. 2) Prehabilitation fit within tertiary care: Prehabilitation was viewed as preventive medicine, and some questioned its fit within the hospital setting, traditionally "a more reactive environment". Most agreed that "prehab [enrollment] needs to be very restrictive to safeguard outcomes" aligned with tertiary care. 3) Insufficient multimodal resources: Screening for anxiety and depression revealed 40% of clinic patients would benefit from psychosocial referral, but part-time resources could not compensate. 4) Invest preoperatively to save resources postoperatively: Inpatient staff identified that prehabilitated patients lessened their workload as patients were more empowered to actively participated in their care; thus, staff burden might be an important future outcome to capture.

Conclusion: Findings will be used to define the components of the first stakeholder-informed logic model of prehabilitation clinics (its mission, inputs, outputs, and outcomes). The next steps will involve

modifying the prehabilitation program based on stakeholder priorities and re-applying the logic model to refine its components. The final real-world informed logic model will serve as a template to develop and evaluate sustainable prehabilitation programs.

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Logic Model, Program evaluation and optimization, Mixed methods, Qualitative, Accessible and sustainable