

Doctors boost fitness of cancer patients using novel 'prehab' programme

October 27 2014

Doctors and scientists in Southampton can return cancer patients to pre-treatment fitness levels within six weeks using a novel 'prehabilitation' programme.

Led by Professor Mike Grocott, researchers at the NIHR Southampton Respiratory Biomedical Research Unit studied the effect of tailored [exercise](#) programmes on bowel cancer patients after [chemotherapy](#) and [radiotherapy](#) but before surgery.

In the UK in 2012, more than 9,000 people were diagnosed with the rectal form of bowel cancer and three-quarters underwent [major surgery](#) with a death rate of 3.2%.

Earlier this year, Prof Grocott, a professor of anaesthesia and critical care at the University of Southampton, and his team became the first to report that chemotherapy before cancer surgery reduced [fitness levels](#) in some patients, published in the European Journal of Surgical Oncology.

Patients who require surgery for cancer often additionally undergo a combination of chemotherapy and radiotherapy, known as chemoradiotherapy, before their operation.

By training on a bike three times a week, they found patients' fitness returned to pre-treatment levels or improved within six weeks, but remained at post-treatment levels or dropped further in those who didn't.

"Poor physical fitness is linked to poor post-operative outcomes, but interventions to improve recovery from surgery have traditionally been implemented after," explained Mr Malcolm West, NIHR surgical academic clinical fellow and co-author of the study.

"Exercise training prior to surgery, what we call prehabilitation, has been deemed safe, feasible and can improve function and quality of life, but little is known about its effect on cancer [surgery](#) patients following [cancer treatment](#).

"We have now shown that a chemoradiotherapy regime in rectal [cancer patients](#) causes a significant decline in fitness and activity, but that it can be reversed by a supervised, individually tailored, exercise training programme."

Of the 39 patients recruited at Aintree University Hospital and the University of Liverpool, 22 with an average age of 64 years completed the exercise programme with the remainder in a control group.

Although the study, published in the British Journal of Anaesthesia, was designed to assess the safety and feasibility of intervention, the researchers followed all patients up for a year after their operations.

Dr Sandy Jack, a consultant clinical scientist and exercise specialist, added: "We can only speculate as to the effect of exercise on outcome, but we did see a reduction in length of stay, readmission rates and cardiorespiratory complications."

Prof Grocott, a consultant in critical care at Southampton General Hospital, said the findings meant it could be possible to improve outcomes by introducing early exercise programmes, but larger studies were required.

"We believe the reversal will be associated with improved outcome compared with not training, but that would need a follow-on effectiveness study with an adequate sample size to prove it," he said.

"At the moment, we have demonstrated the safety and feasibility of the intervention with a strong indication that it is likely to be effective, which is extremely exciting."

Provided by University of Southampton

Citation: Doctors boost fitness of cancer patients using novel 'prehab' programme (2014, October 27) retrieved 3 May 2024 from <https://medicalxpress.com/news/2014-10-doctors-boost-cancer-patients-prehab.html>

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