

Rupert Pearse BJA/RCoA Career Development Award

Annual report April 2015

Background

Over 230 million patients undergo major surgery each year. Most deaths occur amongst the high-risk surgical population, which accounts for 10-15% of all procedures. The high-risk surgical population consists primarily of older patients, with associated medical problems, who undergo major surgery. Doctors frequently fail to identify these high-risk patients and to admit them to a critical care unit to provide enhanced care after surgery. Furthermore, patients who choose to undergo surgery often do so without the information they need to make an informed decision. The overarching aim of the proposed body of research is to define which patients are most in need of critical care after surgery and to investigate the benefits of this approach.

The Measurement of Exercise Tolerance before Surgery (METS) study

This is an international observational cohort study comparing cardiopulmonary exercise testing, physician subjective assessment and physiological biomarkers as predictors of outcome following non-cardiac surgery. It is a collaboration between perioperative medicine researchers in the United Kingdom, Canada, Australia and New Zealand. Professor Rupert Pearse leads the study in the UK and is one of three primary leads.

Study progress so far

The study is currently recruiting ahead of target. The international target sample size is 1600 patients and the UK target is 652. The five UK sites have recruited 450 patients to the study so far (fig. 1-2). This is only slightly behind enrolment in Canada, where recruitment started several months earlier than the UK. Due to the nature of the study design there are several points where patients could drop out before undergoing surgery. The UK has the highest proportion of patients who complete surgery and therefore will likely make the largest contribution to the patient sample that is analysed.

Future progress

Recruitment is anticipated to finish in late 2015 and data collection will continue until early 2017. The international study management team are currently conducting an interim analysis of postoperative complications. Recruitment numbers may be reduced or increased

by a small amount depending on the outcome of this. UK investigators will be leading seven planned secondary analyses of the METS dataset. One of these will form a chapter of a PhD thesis for Dr Tom Abbott, the research fellow leading day to day study management in the UK.

Health Services Research in Perioperative Medicine

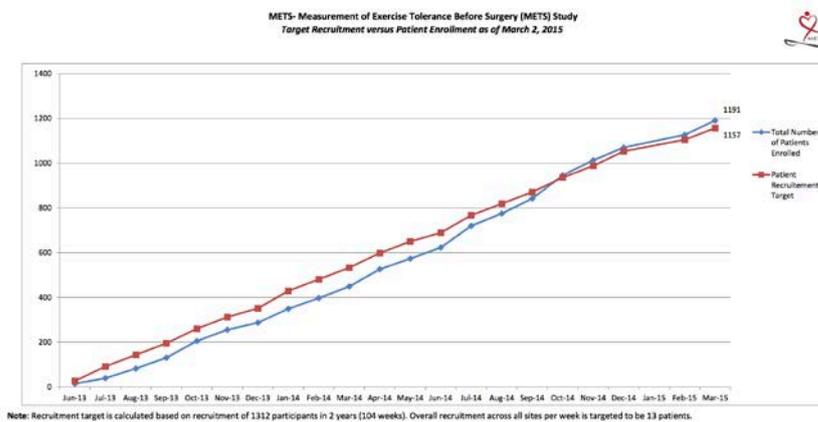
The fellowship has supported the appointment of a full-time statistician within our group, providing key infrastructure to support the completion of a number of health services research analyses (surgical checklists, use of cardiac output monitoring, prognostic value of estimated glomerular filtration rate), and to develop new high quality research proposals (ISOS, PRISM, OPTIMISE II). Our original aim to complete a health services research analysis of the effect of postoperative admission to critical care is progressing slowly as we create a large enough database to support this analysis.

Other outputs

Since receiving this career development award, Professor Rupert Pearse has been awarded and completed an NIHR clinical trials fellowship and has subsequently been awarded a NIHR Research Professorship to develop a programme of perioperative medicine research. He is one of only 23 people to receive the highest personal award offered by the NIHR. Dr Tom Abbott has been shortlisted for a jointly funded Medical Research Council and British Journal of Anaesthesia Clinical Research Training Fellowship.

Figures

1. METS International recruitment progress



2. METS international recruitment stratified by country

