

2014/2015 Summer Studentship Project Application Form

Send to: Research Office, University of Otago Christchurch, PO Box 4345, Christchurch, by 5pm on **4 July 2014**

Supervisor Information (First named supervisor will be the contact):

Supervisor's Name(s): Assoc Prof Dr Ross Kennedy, Mr Leigh Parsons, Dr Tim Chapman

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Research Category (Choose one category only – to be used for judging the students' presentations):

Clinical Yes

Laboratory

Community

Project Title (20 words MAXIMUM):

Peri-operative analgesic requirements and quality of recovery.

Project Description:

Background

We are exploring the relationship between opioid administration in the operating theatre and analgesic requirements in the recovery area. The primary measure we are using is effect-site (or CNS) levels of opioids, with the eventual aim of replacing dosage-based administration with effect-site targeting. Data from our previous studies also suggest that intraoperative requirements may be able to be used to predict postoperative needs.

These studies have suggested that, over time, opioid use with laparoscopic surgery has decreased and that patients undergoing peripheral bony surgery have quite high analgesic requirements. We are interested in further investigating these differences and exploring longer term measures of the quality of patient recovery.

Aims

This study will look at patients undergoing laparoscopic and "minor" bony surgery to: 1) determine opioid effect-site levels during surgery and in PACU, to further explore the intraoperative-PACU relationship; 2) measure the "quality of recovery".

Methods

Ethical approval will be obtained. Subjects will be ASA 1-3, aged 18-65 undergoing either laparoscopic surgery (excluding bowel resection and major pelvic surgery) or open surgery for limbs fractures or similar at Christchurch Hospital (excluding #NOF and use of major regional block). We plan to study at least 15-20 patients in each group, and allowing for a total of up to 60 patients should time be available.

Preoperative informed consent. Conduct of anaesthesia at discretion of anaesthetist. All drug doses and times will be recorded. This will allow calculation of effect-site levels throughout the peri-operative period. Analgesic use in the 24 hours post-op will also be recorded. We will perform a

standardized assessment (PQRS) preoperatively, in the immediate postoperative period and at 1 & 7 days and 1 year after surgery.

We will analyze the data by comparing intraoperative and PACU fentanyl levels for individuals and between the two groups. We will also look at the use and effect of non-opioid analgesics. We will relate the PQRS assessments to the type of surgery and to analgesic use.

Significance

Pain and analgesic use varies markedly between patients. However our data suggest that it is possible to define individual requirements and, that if opioid levels are allowed to fall too far, that pain returns. We know that poorly treated acute pain is a significant predictor of chronic pain, so that developing tools to optimize analgesia should help reduce long term morbidity. There are data suggesting that “simple” bony surgery is associated with significant pain and we wish to assess the degree of pain and the effect on long term recovery in our own population.

This self-contained study builds on the work from our previous four summer students. For the student, this study will involve: finalising the study design and data collection processes and development of appropriate spreadsheets for recording and analysing the data. The student will be exposed to the operating theatre and PACU environments with the opportunity to increase their knowledge of anaesthesia and pain management and will also spend time interacting with patients in the peri-operative period. We anticipate that the student will collect theatre and PACU data for 4 days a week from weeks 2-7 and will spend approximately one day a week on patient follow-up and quality of recovery data. The remainder of the time will be spent on data analysis and writing up of results etc.

