2017/2018 Summer Studentship Project Application Form

Send to: Research Office, University of Otago Christchurch, PO Box 4345, Christchurch, by 5pm on 3 July 2017

Supervisor Information (First named supervisor will be the contact):	
First Supervisor's Name and Title: Assoc Prof Dr R Ross Kennedy	
Department - UOC &/or CDHB (if applicable): Anaesthesia	
First Supervisors Phone: 03 3640288	First Supervisors Email: ross.kennedy@cdhb.health.nz
First Supervisors Mailing Address: c/- Dept of Anaesthesia, Lower Ground Floor, Christchurch Hospital, Private Bag 4710, CHCH	
Co-Supervisors Name and Title(s): Mrs Margie McKellow	

Research Category (Choose one category only **– to be used for judging the students' presentations):**		
Clinical ✓	Laboratory	Community

Project Title (20 words MAXIMUM):
Does the response to IV cannulation predict post-operative pain?

Project Description:

Introduction

It is well recognised that individual post-operative pain responses and analgesic requirements vary greatly and are very difficult to determine prospectively. There is some evidence suggesting that the response of a patient to a noxious stimulus such as placing their hand in iced water can indicate post-operative analgesic requirements. Last summer we investigated this concept, using the pain on injection of a small dose of propofol as the stimulus.

We were able to identify a subset of patients who went on to report high pain scores in the post-operative period but we could not reliably predict PACU opioid requirements. The predictive value of response to the propofol dose was potentially limited by several factors: IV cannula placements in the ward frequently used the anti-cubital fossa which is associated with less pain on injection of propofol than hand or forearm veins; and the study group (minor bony surgery) had overall much lower opioid needs than when we have studied this group previously.

We plan to repeat this study in patients undergoing elective laparoscopic surgery. In this setting the IV cannula is placed by the anaesthetic team.

Aim

The aim of this study is to explore the relationship between pain on IV cannulation and post-operative analgesic requirement as characterised by fentanyl levels and by reported pain scores. In particular, we wish to study patients undergoing elective laparoscopic surgery, a group recognized as having significant pain and for whom we have data from earlier studies.

The secondary purpose of this study is to further explore procedures and techniques for investigating ways to predict post-operative pain and provide baseline data for a future, larger study.

Possible impact

Pain post-operatively is a major problem. It causes suffering and, if inadequately treated, leads to chronic pain. However, pain and analgesic requirements vary considerably between patients and are very difficult to predict. The ability to prospectively define patients with high analgesic requirements would allow better pre-emptive pain management. Approaches to better individual pain management could include additional intra-operative analgesia, making PACU staff aware of increased requirements, and discussion with the patient about possible analgesic modalities.

Methods

Subjects: 40-60 patients 18 years or over undergoing elective laparoscopic surgery where the anaesthetist plans to use fentanyl, alfentanil or remifentanil as opioids but not morphine. Other aspects of anaesthesia and use of analgesic adjuncts such as NSAIDs, paracetamol, and dexamethasone at the discretion of the primary anaesthetist. Written informed consent will be obtained from the patients.

Study procedure: Subjects will be asked to use a 10cm visual analogue scale (VAS) to rate the pain of both IV cannulation and injection of 30mg (3 ml) of propofol, a routine anaesthetic drug. Various aspects of anaesthesia, including all drugs administered in theatre and PACU, will be recorded. The effect-site levels of opioids will be calculated by entering dose and time information into a spreadsheet.

Analysis: The primary analysis will compare the PACU opioid levels and need for supplemental analgesics in those with a VAS "response" of >20mm to the propofol bolus or IV cannulation, with those where the VAS is <20mm. The primary hypothesis is that those with VAS >20mm will have higher opioid levels/requirements than the < 20mm group. We will also explore the relationship between the pre-operative VAS, and pain scores in the recovery period.

Our Summer Student will be responsible for consenting the patient, administering the VAS scores, collecting the required drug information in both theatre and PACU, and helping analyse the results.

Student Prerequisites (eg. Medical Student) if applicable:

Medical

Administration Details

1. Is ethical approval required? Yes

   If Yes: please circle or tick one of the following:

   a) Applied for (provide application #)

   b) Approved (attach a copy of the letter of approval from the ethics committee or application #)

   c) To be done ✓

2. Are you able to provide the funding for this project (ie. $5,000 for the student, incidental expenses should be met from departmental or research funds) Yes

   If Yes: Please provide name of the funder __Anaesthetists' Instrument Pool ____

   If No: Please provide ideas of possible funding sources, including past funding agents and topics often associated with this research area, for the Research Office to contact.

   _____

   If Yes: You will be sent a request for more information.

3. Medical Records or Decision Support accessed Yes

4. Health Connect South or other DHB records Yes

5. Signatures:

   - I have read the 2017/2018 Summer Studentship programme handbook.
   - I am prepared to supervise the project and will be available to the student during the studentship (including Christmas/New Year break if the student is working during this time).
   - I agree to assume responsibility for the submission of the student's reports to the Research Office by the due date 29 January 2018.
   - I agree that the project lay report may be available to local media for publicity purposes.

Signature of Project Supervisor(s):	Date:

- I understand that I am responsible for hosting the Summer Student chosen for this project and will meet any costs incurred. I agree that incidental expenses will be met from departmental or research funds.

Signature of Head of Department: (Print Name)	Date:
Signature of Clinical Director: (if applicable) (Print Name) Dr A. Padayachee	Date: