2015/2016 Summer Studentship Project Application Form

Send to: Research Office, University of Otago Christchurch, PO Box 4345, Christchurch, by 5pm on **3 July 2015**

Supervisor Information (First named supervisor will be the contact):	
Supervisor's Name and Title(s): Assoc Professor Tim Eglinton, Surgeon and Dr James Falvey, Gastroenterologist	
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Research Category (Choose one category only – to be used for judging the students' presentations):		
Clinical	**Laboratory**	**Community**

Project Title (20 words MAXIMUM):

Is surveillance for colorectal cancer in ulcerative colitis effective?

Project Description:

Introduction:

Ulcerative Colitis (UC) is a chronic, relapsing condition characterised by inflammation of the mucosal layer of the colon and rectum. It is well documented that patients with UC are at increased risk for colorectal cancer (colitis associated cancer, CAC). The risk of CAC varies with factors such as; duration and extent of disease, the presence on endoscopy of inflammatory polyposis and the presence of co-existing primary sclerosing cholangitis (PSC). For the majority of UC patients, the risk of CAC does not become significant until 10 years after diagnosis. Dysplastic changes in the colonic mucosa precede the development of CAC. Colonoscopic surveillance of UC patients for the development of dysplasia is therefore performed in order to allow for colectomy prior to the development of colorectal cancer and a number of international and national guidelines exist for this surveillance[1,2]. At present, the detection of high grade dysplasia is considered an indication for colectomy based on studies demonstrating the presence of synchronous carcinoma in up to 40% of cases[3], while the management of low grade dysplasia is more controversial, with some recommending observation over colectomy.

Whether these guidelines are effective at preventing CAC and remain relevant in contemporary practice is questionable in light of recent developments in this field and a number of areas require further clarification. There is uncertainty regarding the absolute risk of CAC among patients with UC due to heterogeneity of results among recent studies and the effect of improved medical management on this risk. Recognition of predictive factors for CAC may allow surveillance resources to be targeted at those with greatest risk for CAC. Current histopathological techniques are unable to distinguish colitis associated dysplasia from sporadic polyp formation creating a dilemma when sporadic polyps are encountered in CAC surveillance. Traditionally dysplasia has been considered a field change affecting the entire colon, hence the justification for total colectomy upon its identification. However, improved colonoscopic detection using modern high definition colonoscopes combined with mucosal enhancement techniques such as chromoendoscopy[4] allows identification of discrete areas of dysplasia with the possibility of localised, endoscopic resection as definitive therapy, rather than total colectomy.

Colitis associated cancer is a potentially preventable condition when an appropriate surveillance strategy is in place. There is no contemporary local data on the rate of dysplasia or CAC in the UC population. Neither is there data regarding compliance with current surveillance recommendations, nor the success of this strategy in avoiding colorectal cancer diagnosis. The existence of a well characterised population based cohort of UC patients in Canterbury provides an ideal opportunity to study the natural history of dysplasia in UC and adherence to surveillance guidelines over long term follow up.

Aim:
To determine;

1. the long term incidence of dysplasia and colorectal cancer in UC and;
2. compliance with surveillance and management guidelines in the UC population in Canterbury.

Method:
The Canterbury Inflammatory Bowel Disease Project recruited all patients in the region with IBD as at 2005[5]. The records of all UC patients in the database will be reviewed to determine the rate of dysplasia (including dysplasia associated lesion or mass), colorectal cancer and colectomy for either of these indications to the end of 2015. This will allow a minimum of 10 years of follow up. Risk factors for these findings will be recorded including patient demographics, disease extent, disease duration, the presence of endoscopic stigmata of severity such as inflammatory polyps, and the presence of extraintestinal manifestations such as primary sclerosing cholangitis. For each UC patient, colonoscopic surveillance interval and method will be recorded and then compared to national guidelines to assess the compliance with these guidelines. For cases where a colorectal cancer has been diagnosed, the case will be reviewed to determine whether this arose within or outside current screening guidelines. As this is a comprehensive population based study, records of both public and private hospitals will be searched.

Simple descriptive statistics will be performed and risk factors for colitis associated dysplasia will be determined using a combination of univariate and multivariate analysis. Support for this will be available within the department. The existence of the dataset means 10 weeks is a very realistic timeframe to complete the project.

Signifcance
Colorectal cancer in UC remains a preventable complication. This study provides an excellent opportunity to further clarify the poorly understood natural history of dysplasia in the modern era of medical management of UC, and to establish whether UC patients receive adequate surveillance for this in our community.

References
1. Collett J, Dennett L, McMenamin J, Richardson A et al. Surveillance for people at increased risk of Colorectal cancer. The New Zealand Guidelines Group 2011. Accessed online via http://www.health.govt.nz/system/files/documents/publications/colorectal-cancersurveillance-guidance.pdf

2. Eaden JA, Mayberry JF, British Society for Gastroenterology, Association of Coloproctology for Great Britain and Ireland. Guidelines for screening and surveillance of asymptomatic colorectal cancer in patients with inflammatory bowel disease. Gut 2002; 51 Suppl 5:V10

3. Bernstein CN, Shanahan F and Weinstein WM. Are we telling patients the truth about surveillance colonoscopy in ulcerative colitis? Lancet 1994; 343(8889):71-74

4. Soetikno R, Friedland S, Kaltenbach T et al. Nonpolypoid (flat and depressed) colorectal neoplasms. Gastroenterology 2006; 130:566-576

5. Gearry, R., *Inflammatory Bowel Disease in Canterbury, New Zealand*. 2005, University of Otago: Christchurch.

Student Prerequisites (eg. Medical Student) if applicable:
Medical Student Resident in Christchurch