New Zealand Society of Gastroenterology

Issue: 27 December 2014

In This Issue:

Closing Soon Research Grants!

The next round of applications closes on 31 January 2015 (See page 5 for more information)

Update from Your President

So another year draws to a close, and a good one for the New Zealand Society of Gastroenterology.

A past President became Clinical Director of PHARMAC, a Gastroenterologist (Nick Talley) became the President of the Royal Australasian College of Physicians, the new Minister of Health appears he might have some medical insight, (being a former GP), and I become NZSG President.

What an alignment of stars!

But seriously, I hope we can capitalise on these recent events to move forward in the most pressing and inter-related problems of Endoscopy Training & Governance, workforce (including non-specialist endoscopists) and the introduction of a Bowel Cancer Screening program for the whole of New Zealand.

You can be reassured that I will be putting my endorphin-charged energies into these areas.

At the same time IBDNZ plan to move towards an Audit of IBD care, starting with an encouraging initial meeting which was held at the ASM with other interested parties from surgery, nutrition, nursing and patient representatives. We hope to draft basic benchmarks against which to audit in the coming 12 months. Please contact me if you would like to be involved personally. IBDNZ also hope to publish guidelines on Acute Fulminant and Steroid-refractory Colitis in the next 6 months.

So, as the Chinese curse says, "may you live in exciting times'. I think they are certainly shaping up to be that. Thank you for your confidence in voting me in as President. I hope I can live up to your expectations.

Happy holidays

Russell

Editorial

Welcome to a very scientific edition of our newsletter. In 2013/14, the Society spent NZ$127,000 in Grants, Awards, and Fellowships – an amount we can proud of. In this issue you find reports from the recipients of the two main grants, the 2013 AbbVie Research Grant and the 2013 Ferring Fellowship. You will agree with me that the research the society has supported is exciting. Continuing to support world-class research will remain high on the new Executive Committee's agenda. Enjoy David's report on the ASM, one of the most successful concerning registration numbers in the history of the NZSG and also the tale-telling pictures from the conference dinner.

Have a restful holiday period, a merry Christmas and a good start into the New Year.

Michael

2014 NZSG ASM Awards and Winners

Award	Winner	Prize
NZSG Janssen Research Fellowship Shared between two applicants	Peter Swan: Thermal Properties of the Liver & Hepatic Tumours improving understanding and outcome from microwave ablation of liver cancers Walmsley/Schultz/Barclay: A multicentre pilot study of use of smartphone-based health applications IBDSmart & IBDoc in the care of IBD patients in NZ	65,000
NZSG AbbVie Research Grant	Tim Angeli: Targeted Ablation Therapy for treatment of Gastrointestinal Dysrhythmias	35,000
Gilead Young Investigators Award (Liver)	Riaz Shiak: Rising incidence of Hepatitis C related Hepatocellular Carcinoma and impact of surveillanc	2,000
NZSG Young Investigators Award (Luminal)	Nicholas Burgess: Deep Mural Injury and Perforation associated with Colonic Endoscopic Mucosal Resection: classification, risk factors, management and outcomes	2,000
Olympus Best Luminal Paper/ Poster	Andrew McCombie: Does computerised cognitive behavioural therapy help people with inflammatory bowel disease? A randomised controlled trial	1,500
AbbVie Best Hepatology Paper/Poster	Maggie Ow: NKp30+natural killer cells have enhanced cytotoxicity that protects blook transfusion recipients from acquiring hepatitis C infection	1,500

2013 Research Grants - Reports

Michael Schultz 2013 AbbVie Research Grant

How do NOD2 mutations modify the response of the intestinal epithelium to commensal bacteria ?

Proposed objectives of the study

Objective 1: NOD2 polymorphisms alter gene expression in the intestinal epithelium independent of exposure to commensal bacteria and the intestinal immune system.

We have successfully characterised colonic enteroids for properties associated with stem cell activity, growth, proliferation, differentiation and maturation. Additionally we have also characterised enteroids' expression of the tight junctions and immune receptors. Our assessment of all these properties have led to the conclusion that the thick-walled enteroids more closely resemble the mature colonic epithelium and were used for further experiments. Work done as a result of this characterisation was selected for oral and poster presented at Experimental Biology Conference (2014) in San Diego, earlier this year.

Objective 2: *NOD2* polymorphisms modify the transcriptional response of the intestinal epithelium to intestinal microbiota

Effect of LPS on enteroid development

Colonic enteroids were grown in the presence of Lipopolysaccharide (LPS) for 10 days. LPS is a bacterial cell wall component that mimics to a certain extent the presence of gram negative bacteria. The culture was then harvested and part of it was fixed to observe histological sections for any phenotypic changes. Additionally, enteroid RNA and protein was also extracted for analysis. The RNA was analysed using microarray techniques and genes of interest were further analysed using qPCR techniques.

We found that growing the enteroids in the presence of LPS had no effect on the total number of organoids. However, it did induce a lineage change of cells to form about 20% goblet cells compared to the absence of goblet cells as seen in the untreated controls. Associated with this change was in increase in goblet cell marker MUC2 both at the transcript and protein level. To further confirm that the increase in MUC2 is a result of a lineage change and not increased mucus secretion we also did an immunohistochemistry of both MUC2 and a goblet cell specific marker trefoil factor 3 which is also present in goblet cells not synthesising mucus.

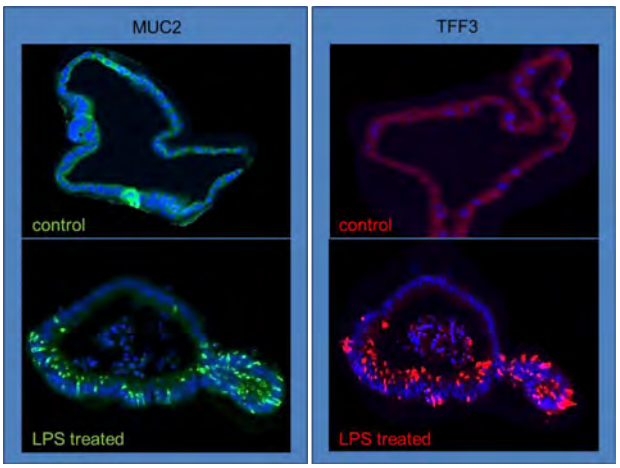

Figure: Immunohistochemistry of enteroids stained with MUC2 showing bight green staining of MUC2 with α-MUC2 antibody and with bright red staining of TFF3 with α-TFFE antibody.

David Orr 2013 Ferring Fellowship

Gut bacteria targeted therapy for metabolic syndrome

Obesity and metabolic syndrome has reached epidemic proportions in New Zealand. As a consequence the prevalence of Non-Alcoholic Fatty Liver Disease is rapidly increasing, and is now the most common liver disease in the Western world. In association with the risk of liver disease, the metabolic syndrome is associated with an increase risk of cardiovascular complications, notably in patients post liver transplant that are at increased risk of developing the metabolic syndrome.

Probiotics, including Lactobacilli and Bifidobacteria, and Prebiotics (non-digestible, fermentable carbohydrates and fibers), such as inulin have exhibited anti-obesity, anti-diabetic, antioxidant, and anti-inflammatory effects. Two double blind randomised controlled trials supported by the New Zealand Gastroenterology Society and Ferring Scholarship at Auckland Hospital, New Zealand Liver transplant Unit commenced earlier this year. The trials will assess the potential benefit of both pre- and probiotics in patients with NAFLD and in patients post liver transplant with metabolic syndrome. The initial phase of the trial is weight loss with 4-weeks of 'very low calorie diet' (VLCD) and then randomisation to study drugs vs placebo.

The NAFLD trial comparing VLCD vs VLCD + antibiotic/ prebiotic has now completed patient enrolment (n=60) with end of treatment data currently being analysed. The 3-month follow up data will be available for analysis in January 2015.

The VLCD vs VLCD + probiotic trial in Liver transplant recipients with metabolic syndrome has now closed enrolment (n=30) with the end-of-treatment date and trial unblinding scheduled for early February 2015.

Of the patients randomised and initiated into the trials, the median weight loss achieved over the first 4 weeks is >6kg in these patients. As well as weight loss and improvement in metabolic risk factors, other parameters including reduced liver fat (CAP scanning), change in adipocytokines and metabolomics will be assessed at the conclusion of the study. The studies will be completed next year with data analysis and presentation at the national NZSG ASM 2015 and AASLD 2015.

Peter Swan 2013 Ferring Fellowship

Thermal properties of the liver – improving understanding and outcome from microwave ablation of hepatic tumours

Key Project developments:

1. Modification of the investigative perspective.

A shift in emphasis from thermal properties of the liver, to thermal properties of the tumour and that of the background liver. This is to address all of the factors that could influence the efficacy of thermal ablation using microwave technology. Namely:

- Specific heat capacity of
    - Liver parenchyma in different disease states (original idea)
    - CRLMs and HCCs (new idea)
- Biophysical properties (permittivity and conductivity) of
    - Liver parenchyma in different disease states (new idea)
    - CRLM and HCCs (new idea)
- Water content of
    - Liver parenchyma in different disease states (new idea)
    - CRLM and HCCs (new idea)

continued from page 4...

- Peri-hepatic microenviroment (original idea)
    - Pneumoperitoneum
    - Percutaneous approach
    - Use of vascular inflow occlusion

Additional in vivo human experiments have been conceived, using in-situ temperature probe to document heat profile, and further investigate effect of steatosis/ fibrosis on ablation size and as a natural control for inflow occlusion versus no inflow occlusion ablations.

The ultimate aim is to develop an individual approach to microwave ablation that encompasses all the influential variables.

2. Human Ethics submission to cover ex-vivo use of specimens and in-vivo human experiments. Animal ethics submission for in-vivo rodent experiments.

3. Submission of '100 Hepatic Tumours Ablated with Microwave, a single centre experience', this is a report of the clinical series from ADHB, it represents the 4th largest reported series from a single centre. The essence is lower local recurrence when used surgically as opposed to percutaneously, and local recurrence is also correlated with background liver histology.

RLM, colorectal liver metastasis

HCC, hepatocellular carcinoma

NZSG Small Research Grants

The NZSG is keen to encourage clinical research by gastroenterology and surgical trainees during their period of clinical training. Supervisors may have the ideas and time but need small grants for tests, equipment or part-time staff.

The next round of applications closes on **31 January 2015**. For more information on the eligibility, conditions and application process, please go to the NZSG website www.nzsg.org.nz.

Current Vacancies

Dunedin School of Medicine and Southern District Health Board - Senior Lecturer in Gastroenterology (Confirmation Path) and Consultant Gastroenterologist

Waitemata District Health Board – Consultant: Gastroenterology and General Medicine

Nelson Marlborough District Health Board - Consultant Gastroenterologist (with Acute Medicine Capability)

Northland District Health Board - Gastroenterologist

For further information, see our website at www.nzsg.org.nz

PTAC Membership Vacancies

PHARMAC is the Government agency responsible for ensuring New Zealanders have access to a wide range of affordable medicines. PHARMAC makes a vital contribution to New Zealand's health outcomes.

The Pharmacology and Therapeutics Advisory Committee (PTAC) is an advisory committee to PHARMAC. It is made up of vocationally registered health practitioners with expertise in critical appraisal in fields such as clinical pharmacology, internal medicine and general practice. PTAC's role, defined in legislation, is to provide PHARMAC's Board with objective advice on pharmaceuticals, including devices, and their benefits.

PTAC considers and makes recommendations on proposed amendments to the Pharmaceutical Schedule, whether related to funding new pharmaceuticals or changing funding criteria for pharmaceuticals already funded.

PTAC members are appointed by the Director-General of Health, in consultation with the PHARMAC Board. The Director-General is seeking applications from suitably qualified and experienced clinicians to be appointed to the Pharmacology and Therapeutics Advisory Committee (PTAC).

For a full job description or further information, please contact: Marjan van Waardenberg, Medical Advisory Committee Secretary (04 916 7512) marjan.vanwaardenberg@pharmac.govt.nz. Applications close Monday 9 February 2015. Interviews for shortlisted candidates will be held in late February – early March 2015.

2014 NZSG ASM

So there we have it; the NZSG Annual Scientific Meeting done and dusted for another year. Judging by the feedback, this year's conference was a roaring success. It was memorable for me in a number of ways:

(a) The addition of the Gut Health Network meeting on the Tuesday was a first, and seemed to be received very well, if the number of delegates was anything to go by. Even the twelfth hour withdrawal of the keynote speaker didn't dampen the spirits and two very able Kiwi lecturers stood up and were counted and the main guy's absence didn't even raise a ripple.

(b) Co-hosting our meeting with AuSPEN also seemed to be a success. My stated aim was always to allow cross pollination between the convening societies, and the amount of nectar on offer in sessions from both societies seemed to entice even the most reticent delegate bees.

(c) The opening plenary session shared between NZSG and the Nurses section will live long in the memory. Never before has a convenor opened a conference with a story about testicles. And rarely has the opening international speaker been ushered off the stage still talking after running over his allotted time … but he had been warned and it set the tone for the rest of the meeting, and all the sessions ran punctually.

(d) The usual Wednesday evening doctors' dinner was replaced by two very well attended Satellite Symposia. It was great to be able to sit together with our visiting speakers, global experts in their respective fields, in a relaxed and informal setting and using real life cases as a starting point, simply chew the fat about the specialty subjects. To me this was one of the real highlights of this year's meeting.

(e) The Great Guts Fun Run on the Thursday morning was a stunning success. Nearly 100 registrations, most of whom actually turned up for the run. The sun was out and the cloudless blue sky allowed Auckland's Domain to shine like a jewel. The run itself was a great success, bar the little incident of road rage from a local JAFA in his 4x4 who thought it would be fun to try and run the leaders off the road. One cracked wing mirror later …, maybe he'll think differently next time? And a total of just over $2,500 was raised for Crohn's & Colitis NZ (Auckland Branch) which was great. Big thanks must go to local CCNZ Auckland members for turning out in their purple T-shirts to help marshal; and also to Abbvie for supporting this event again so well. We hope you like the commemorative shirts. I think they're pretty cool.

(f) The increased sessions for oral free papers seemed to be well attended. Was this something you'd like to see continue? If so, feedback to us via the Survey Monkey link that was e-mailed to you a few days after the meeting.

(g) And then there was the conference dinner! Conference dinners, on the whole, are things to be avoided at all costs. Not so with NZSG. I think AuSPEN went home with their eyes opened wide. The dinner is only as good as the participants, and you lot were great. The costumes were awesome, and it showed the breadth of heroes that we have. Ranging from major figures from history (Gandhi, Queen Victoria, Florence Nightingale), to Superheroes (I noted a particularly attractive Wonder Woman!), through to fictional characters (Sherlock Holmes, Xena, and Arrow), and the usual guy who just came in his pants (remember Alasdair, NAKED … is not a costume). Perhaps most scary was the fact that Priyanka, my Registrar, and I both turned up as Steve Irwin, the Crocodile Hunter without either of us breathing a word beforehand. Then there was a new tradition born, a "performance" by the hosting unit. Auckland City Hospital Gastro Unit performed their version of Don't Stop Believing. The audience reaction was awesome, and none of the performers will ever forget the encore. The bar has been well and truly set.

(h) The final session of debates was a great way to finish the meeting. I think it is very important to send people on their way with an uplifting final session, and we most certainly got that. Thanks to all the protagonists for their efforts, and the way the international speakers dropped their guard and joined in was a pleasure to see too.

So, all in all, a great venue and a great meeting. But nothing ever happens by accident. This took 18 months of planning, and a great deal of hard work. Claire Bark (Tangerine Events) was instrumental in helping bring this meeting to life and I thank her. I also wish to thank all of the NZSG members who supported me by so readily agreeing to speak, chair, and judge.

Finally, to all of you who supported the Society by attending. This meeting is your meeting. I hope we did you proud.

David Rowbotham
Convenor