ADVANCED TRAINING IN ENDOCRINOLOGY, DIABETES, AND GENERAL MEDICINE

Trainee's Personal Report

Advanced Training : Endocrinology, Diabetes, and General Medicine
Run : Endocrinology, Diabetes, and General Medicine

Overview

This report covers a period of training that falls outside of the usual annual dates for advanced training assessment as set by the college, due relocation for a period of overseas training. During the period of 08/06/2009 to 14/08/2009 I held the position of advanced trainee in Endocrinology and Diabetes based at Wellington Hospital in New Zealand. Following relocation to the UK I held the position of Specialist registrar in Endocrinology and Diabetes on the North West Thames London rotation, and was based at Ealing hospital for 10 months from 07/09/2009 to 30/07/2010. I then moved to Imperial College Healthcare NHS Trust in central London and was based both at the Hammersmith and Charing Cross hospitals for 8 months. In April of 2011, my family and I returned to New Zealand to complete my training and continue on to consultancy.

Advanced Trainee in Endocrinology and Diabetes
Hammersmith Hospital and Charing Cross Hospital
Imperial College Healthcare NHS Trust
01/08/2010 – 15/04/2011

Clinical Responsibilities

Endocrinology

The Hammersmith and Charing Cross hospitals, located in central west London, are internationally recognised as centres of clinical and academic research, and the Endocrinology department here is no exception. The research unit has been responsible for significant inroads in to the understanding of pituitary, thyroid, and gastroenteropancreatic endocrinology, and indeed, the laboratory provides an internationally reknowned gut peptide assessment service. Imperial College healthcare NHS trust remains one of the most respected UK health trusts and works closely with Imperial College, the University.

Whilst in the department I had the benefit of working with many eminent Endocrinologists, in an exceptionally friendly and stimulating team, led by Professor Karim Meeran. I spent 6 months primarily based at the Hammersmith Hospital followed by 2 months at the Charing Cross Hospital. I was one of three registrars within the department at each hospital, and had an active role in inpatient and outpatient work, as well as research and audit.

Outpatient work at the Hammersmith Hospital comprised 5 clinics per week with a dedicated thyroid clinic, a diabetes clinic, an antenatal diabetes clinic, and 2 endocrinology clinics (one for new referrals and one for follow up). Each clinic varied in work load but on average I would see 6 to 10 patients per session. The thyroid clinic was attended by 2 dedicated endocrinologists (Dr Jeannie

Todd and Professor Graham Williams, a leading researcher in the field of thyroid medicine) and provided exposure to the full range of thyroid disorders including thyroid neoplasms. A thyroid surgeon held a concurrent clinic, allowing significant interaction between the specialities. Additionally, I had exposure to a metabolic bone clinic run simultaneously providing good experience in the management of osteoporosis, parathyroid disorders and rarer disorders of bone function. A thyroid MDT (involving 2-3 centres in London) and attended by endocrinologists, thyroid surgeons, histopathologists and radiologists was held weekly, and through this I was able to gain significant experience in the management of all types of thyroid neoplastic disease, both benign and malignant.

The endocrinology experience gained at the Hammersmith hospital was excellent and provided exposure to all fields of general endocrinology. In addition, the department functions as a tertiary referral centre for a large part of South East England, and I therefore was able to review and manage patients with complex rare endocrine disorders. The department is an internationally recognised centre for the investigation and management of neuroendocrine tumours of gastroenteropancreatic (GEP-NET) origin, as well as chromaffin cell tumours, and would receive referrals from across the UK (and occasionally further afield). Consequently, I was able to gain excellent experience in all facets of the management of GEP-NETs including diagnosis, the role of radiology in tumour localisation, the use of somatostatin analogues, the use and role of additional treatments including peptide receptor radionuclide therapy, chemotherapy, and targeted radiotherapy, and follow up of these patients. Additionally, whilst at the Charing Cross Hospital I had the opportunity to become familiar with the role and logistics of ^{177}Lutetium therapy offered by the centre for the management of NET. I reviewed numerous patients with multiple endocrine neoplasia syndromes and have become familiar with the approach to these conditions. I gained considerable experience in the diagnosis and management of phaeochromocytoma and paraganglioma, including biochemical considerations, genetic associations, and surgical pre and post-operative management. As a consequence of these experiences, I have developed a personal interest in neuroendocrine tumours and hope to continue this throughout my career.

Endocrinology experience at the Charing Cross hospital was equally rewarding with the centres expertise in pituitary medicine providing me with first rate exposure to all aspects of pituitary disease. I was involved in the diagnosis of many patients with pituitary tumours, including those with Acromegaly and Cushing's disease, as well as the pre and post-operative management of these patients. Additionally, I gained useful experience in the management of post-operative pituitary surgery complications including diabetes insipidus, disorders of sodium homeostasis including SIADH and cerebral salt wasting, and infection.

I attended 2 endocrine clinics per week at both centres; a new patient clinic and a follow up clinic. I would see 3 -5 new patients per week, again encompassing the full spectrum of endocrine disorders. I was able to gain experience in the diagnosis and initial assessment of patients with disorders including Cushing's syndrome, Acromegaly, adrenal disorders, reproductive disorders, parathyroid disorders, and neuroendocrine tumours. The follow up clinic provided exposure to between 4 and 8 patients per week and was followed by a post clinic meeting, attended by all the endocrinology team, at which each patient attending clinic that day (40 – 50 patients on average) was discussed. This provided an excellent learning experience and allowed me to gain insight into the management of rare endocrine disorders directly from prominent endocrinologists in the field. Additionally, one follow up clinic per month at the Hammersmith Hospital was dedicated to patients with various neuroendocrine and chromaffin tumours, including patients with multiple endocrine neoplasia.

A weekly Endocrinology MDT attended by endocrinologists, surgeons, oncologists, radiologists, histopathologists and nuclear physicians was held at the Hammersmith Hospital, where the management of 10 to 20 patients predominantly with GEP-NETs, chromaffin cell tumours,

parathyroid disease, and adrenal disorders was discussed. At the Charing Cross Hospital, a weekly pituitary MDT was attended by endocrinologists, pituitary surgeons, neuroradiologists, neurooncologists, and radiation oncologists and discussed patients with pituitary adenomas, haemorrhages and cysts, as well as patient with rare tumour involving the sellar. This provided valuable experience of the role of each service in disease management, and also the structure around how rare diseases should be managed. The value of an MDT became evident in this field. Departmental experience included one dedicated endocrinology lunchtime meeting followed by a cross site journal club, whilst both centres held a weekly general radiology meeting where inpatient, outpatient and films of interest could be discussed.

The diabetes team at Imperial College Healthcare NHS Trust is spread across both the Hammersmith and Charing Cross sites and different services were provided at each. Due to its proximity to both the Queen Charlotte Hospital (one of the UKs leading obstetric hospitals) and the West London Renal service, diabetes services at the Hammersmith are primarily focused on patients with diabetic nephropathy, the antenatal care of patients with various forms of diabetes, and the inpatient management of patients with diabetes. Conversely, the regional type 1 diabetes service and the management of patients using insulin pumps was coordinated via the Charing Cross Hospital. Accordingly, I gained significant exposure to each of these sub specialities. I attended one antenatal clinic per week at the Hammersmith(run by a diabetologist, an obstetrician, and various members of a maternal medicine team), and a diabetes clinic held once per week. I was able to work with and learn from prominent physicians in the field of diabetes care, and gained excellent experience in the use of novel medications including the dipeptidyl peptidase IV inhibitors, the incretin mimetics and analogues, and insulin pumps.

The Endocrinology Unit at both sites managed an 8 – 12 patient inpatient ward which received patients from the medical take, although priority was given to those with endocrine disorders including complex diabetes. Additionally, the team would electively admit patients from other centres for ongoing investigations, and treatments including hepatic embolization for metastatic neuroendocrine neoplasms. I would attend the ward on most days to review patients, with 2 dedicated registrar led ward rounds, and one consultant led ward round. Inpatient referral work comprised frequent consultation requests from the medical and specialities, psychiatric services, and obstetric teams and allowed the consideration of disorders of calcium, sodium and hypertension, the assessment of thyroid and adrenal disease, and the management of diabetes. I was involved in an 'outreach' ward service that provided input into the management of patients undergoing pituitary surgery at the Charing Cross Hospital, and adrenal, thyroid, and parathyroid surgery at the Hammersmith Hospital. Additionally, we worked closely with multiple departments to manage patients with NETs and chromaffin cell tumours.

General Medicine

The exposure to acute medicine is also excellent at the Hammersmith and Charing Cross Hospitals. For 5 weeks in every 16 I was based purely in the acute medical unit covering both day and night shifts including weekends. Acute specialities are provided by different hospitals in London, with the Hammersmith providing a medical emergency department. Patients are triaged by ambulance crews as being suitable for our site. As the on call medial registrar I was responsible for reviewing patients referred from the emergency department, and managing those received by two acute medical wards (one managing patients of higher acuity). I was able to gain further experience in the management of all facets of acute medical care, but given the specialist services provided by the hospital, patients with acute respiratory and cardiac conditions were frequently seen. The on call consultant of the day would perform a morning and evening ward round so there was continuous opportunity for

teaching and reflecting on patient management. When on night duties, my role often included attending emergencies in the hospitals dedicated Renal, oncology, haematology, and thoracic medicine units until sub speciality physicians arrived. I carried the cardiac arrest bleep and would usually be expected to lead the cardiac arrest call unless a more senior physician was present. An average shift on call would include 8 to 12 acute admissions, along with 2 to 3 ward based consults. This experience provided excellent ongoing training in the management of acutely unwell patients, including the use of ventilatory support.

As noted above, I was involved in the management of 8 – 12 patients admitted under the care of our team on a daily basis through structured consultant or registrar led ward rounds, and supporting the more junior team members. Whilst patients with an endocrine problem were selectively taken by our team, the take was otherwise non-selected, allowing good exposure to the full range of common general medical problems.

Overall, I feel I have gained invaluable experience during my time at the Hammersmith and Charing Cross Hospitals and will take this forward into my consultancy career. The chance to become familiar with the diagnosis and management of rare endocrine disorders, as well as being involved in an active endocrine research department has shaped the way I wish to practice and provided me with an excellent foundation on which to progress.

Diagnostic techniques

I have developed a good understanding of the utilisation and limitations of the numerous biochemical and hormonal assessments available to the Endocrinologist. Additionally, I have developed a knowledge of the multitude of dynamic tests available to further evaluate pituitary, adrenal, and gonadal dysfunction. Both the Hammersmith and Charing Cross Hospitals run endocrine investigation units where patients can be admitted for a day or more so as to complete required dynamic tests. As the registrar, I was involved in supervising tests where required, as well as providing a formal interpretation of the results. Each week a consultant endocrinologist would review that weeks results with the registrar to ensure appropriateness of the interpretation. Frequently performed tests included tests of pituitary function including insulin tolerance tests, glucose tolerance tests, and glucagon stress test, whilst other tests performed included water deprivation tests, 72 hour fasts and infrequently performed tests such as the secretin test. This provided fantastic experience of the use and role of the available endocrine tests, whilst interpreting aided understanding of the condition or system as a whole.

I have become familiar with the basics of ultrasonography in thyroid disease, and am comfortable using an ultrasound machine in a number of clinical scenarios. I am comfortable with the technique of ultrasound guided fine needle aspiration, and whilst always seeking a second opinion, am able to provide an basic assessment of the ultrasonographic features of thyroid nodules, thus allowing appriate management. I frequently use ultrasound to characterise the hypervascular features of Graves' disease as well as differentiating the various forms of amiodarone induced thyroid dysfunction. I would like to further develop this skill over the next few years, and appreciate that true competence with thyroid ultrasonography requires exposure to many studies over a long period of time.

I have gained valuable experience in the utilisation and interpretation of numerous other imaging techniques of value to the endocrinologist. In particular, I am comfortable with initial interpretation of MRI and CT images of the pituitary gland, ultrasound and CT images of the thyroid gland, and CT imaging of the adrenal gland. With all the above techniques I would seek the opinion of a radiologist specialising in the relevant field before making management decisions. I have also become

comfortable with the role of scintigraphy in thyroid, parathyroid, and neuroendocrine tumour disorders.

Teaching

During my time at Imperial College Healthcare NHS Trust I presented at two hospital grand rounds on the subjects of multiple endocrine neoplasia and gastroenteropancreatic NETs, and also provided a teaching session for the medical department on the current status of the diagnosis and management of NETs. I was asked to talk at a hospital nursing conference aimed at nurses interested in the management of diabetes, and provided talks on diabetic emergencies.

I tried, whenever possible, to provide teaching on ward rounds to the more junior members of the team. In particular, I aim to ensure that SHOs and house surgeons I work with have a good understanding of the major endocrine and diabetes conditions so as to develop a sensible approach to these conditions when encountered. I provided teaching to a large number of medical students both from Imperial College, London, and overseas students. These sessions took the form of either group bed side tutorials or lectures, and encompassed a wide range of medical topics.

Educational programme

I have continued a programme of self-directed learning aimed at covering the basic and clinical aspects of the whole field of endocrinology. I spend a period of time on each area of the field, utilising textbooks, internet resources, as well as clinical experience and aim to have developed an understanding and approach to all relevant areas at the completion of my training. In addition, I read around interesting cases as I see them, so as to have a good working knowledge of the rarer diseases one might encounter within the speciality.

I attempt to keep abreast of advances in the field of endocrinology and diabetes by reading a number of journals. In particular I use Endocrine reviews, the Journal of Clinical Endocrinology and Metabolism, Clinical Endocrinology (and the other journals produced by the British society for Endocrinology) and Nature reviews Endocrinology. Due to my interest in GEP-NETs and pituitary medicine, and endocrine oncology I read Endocrine related cancer, and publications by the European and North American Neuroendocrine Societies (ENETS and NANETS respectively). I frequently use other Endocrinology journals if interesting papers are published. In addition to the sections contained in the titles above, I read a number of diabetes specialist journals including Practical diabetes, and a number of journals published by the American Diabetes Association including Diabetes. With respect to general medicine, I read the New England Journal of Medicine, Lancet, BMJ, and the Journal of the Cleveland clinic to keep up to date with advances in this area. Of particular interest to me are review articles, which allow me to consolidate my knowledge.

I have attended numerous training days and conferences, both national and international to further my knowledge. In London I have attended conferences on Hyponatraemia, Thyroid malignancy, and Adrenal disease. In February 2010 I attended Parathyroids2010, an international conference in Pisa, Italy which addressed all aspects of parathyroid medicine. In April 2010 and 2011 I attended the British Society for Endocrinology national conference in Manchester, UK. In May 2010 I attended the European Society for Endocrinology annual conference in Prague, Czech Republic. I attended a course on the use of ultrasound in thyroid disease in April of 2010. In March of 2011 I attended the annual conference of the European NET society (ENETS) in Lisbon, Portugal.

The Hammersmith run an annual Endocrine Symposium every December, and Charing Cross run the annual course training for the Endocrinology Speciality Certification Exam.

Research, publications, formal presentations

I have had the opportunity to write and publish a number of articles during the year including review articles, case reports, conference abstracts and educational pieces. I have co-authored a series of articles for publication in the journal 'Therapeutic advances in Endocrinology and Metabolism'. The series aims to provide a pragmatic approach to the management of Endocrinology emergencies and thus far I have published articles on Hypocalcaemia, Hypercalcaemia, Thyroid storm, and Hypoglycaemia. I have commenced further articles on Phaeochromocytoma and disorders of steroid function which are awaiting publication, and intend to complete the series over the next 12 - 24 months. In total, this work is planned to entail 10 – 15 papers.

I have submitted abstracts to each of the conferences I have attended over the past year and have displayed posters at most. In addition, I submitted a number of cases to the British endocrine society clinical update meeting in 2010 and was asked to present 4 of these at the meeting. I am in the process of completing a number of articles based on research I conducted with colleagues at Imperial College Healthcare NHS Trust, all of which I hope to publish before the end of 2011. Additionally, I have written 2 review articles, one on Multiple Endocrine Neoplasia Type 1 and one on gestational thyroid dysfunction that I will attempt to publish in the coming months. I have written a number of other articles which are outlined below (see appendix).

Along with one of the consultant Endocrinologists at Ealing Hospital, I have designed a study to explore a link between vitamin D status and outcomes in sepsis. I have been granted funding for this study and am currently in the process of gaining ethical approval. I hope to have results to publish in early 2012.

I have written articles for national pregnancy related charities regarding endocrine related issues. These have included discussions of the rationale behind glucose assessment in pregnancy and the implications of gestational diabetes, as well as a discussion regarding supplementation of Iodide, Vitamin D and Folic acid in pregnancy. I contributed a number of articles to the British Endocrine Society public website 'You and your hormones'; an online resource for patients to find further information about endocrine conditions

Other relevant information

I commence work at Wellington Hospital in June of 2011 in my position as an Endocrinology registrar. I aim to complete 6 or 12 further months of clinical training before embarking on a dedicated research period. I wish to develop my interest in neuroendocrine tumours, and am hopeful that my research period will allow me to study the enteric hormone system.

Appendix: Publications, poster presentations, oral presentations, other media, and ongoing research

Publications

- Christobal P, Carroll RW, Baynes KCR (2012) The assessment of hyperprolactinaemia in the context of concurrent antipsychotic medication. *Journal of psychiatric practice* (manuscript accepted for publication March 2012)

- Carroll RW, Johoratnam J, Todd JF (2011) The Short synacthen test (SST): Do we need to be testing at both 30 and 60 minutes? *Endocrine abstracts* **25** P35. **Additionally displayed as poster at the British Endocrine Society Annual Conference 2011**

- Carroll RW, Meeran K, Todd JF (2011) Multiple endocrine dysfunction in a patient on psychiatric medications. *Endocrine abstracts* **25** P90 **Additionally displayed as poster at the British Endocrine Society Annual Conference 2011**

- Carroll RW, Todd JF (2011) Endocrine neoplastic manifestations of neurofibromatosis type 1. *Endocrine abstracts* **25** P191 **Additionally displayed as poster at the British Endocrine Society Annual Conference 2011**

- Mukherjee E, Carroll RW and Matfin G (2011) Hypoglycaemia. *Therapeutic advances in endocrinology and metabolism*. 2(2), 81-93.

- Sotiropoulos G, Li J, Al-Nahhas A, Spalding D, Tedeschi M, Carroll RW, Bockisch A, Frilling A (2011) The impact of 68Gallium-DOTATOC PET/CT on the multimodal management of patients with neuroendocrine tumours. *Neuroendocrinology(Publication pending)* **Additionally displayed as a poster at the European Neuroendocrine Tumour Society (ENETS) annual conference, Lisbon 2011**

- Joharatnam J, Carroll RW, Galliford T, Downie B, Zissimopoulos A, Bassett JHD, Todd JF (2011) Metastatic gastrinoma co-secreting PTHrP and ACTH. *Neuroendocrinology(Publication pending)* **Additionally displayed as a poster at the European Neuroendocrine Tumour Society (ENETS) annual conference, Lisbon 2011**

- Joharatnam J, Carroll RW, Ghaffar A, Al-Nahhas A, Meeran K, Todd JF (2011) 68Gallium-DOTATATE PET/CT is a useful addition to 123MIBG scanning in metastatic paraganglioma. *Neuroendocrinology(Publication pending)* **Additionally displayed as a poster at the European Neuroendocrine Tumour Society (ENETS) annual conference, Lisbon 2011**

- Amin A, Carroll RW, Win Z, Palazzo FF, Meeran K, Martin NM, Hatfield E (2011) New imaging modalities in the diagnosis of phaeochromocytoma. *Neuroendocrinology(Publication pending)* **Additionally displayed as a poster at the European Neuroendocrine Tumour Society (ENETS) annual conference, Lisbon 2011**

- Carroll RW, Tan T, Todd JF, Al-Nahhas A, Bomanji J, Gaze MN, Meeran K, Goldstone AP (2011) 177Lutetium-DOTATATE therapy in the management of neuroendocrine tumours. *Neuroendocrinology(Publication pending)* **Additionally displayed as a poster at the European Neuroendocrine Tumour Society (ENETS) annual conference, Lisbon 2011**

- Carroll RW, Comninos A, Frilling A, Meeran K, Al-Nahhas A, Todd JF (2011) 68Gallium-DOTATATE PET/CT frequently changes patient management or staging when compared with 111Indium-Octreotide in the assessment of neuroendocrine tumours. *Neuroendocrinology(Publication pending)* **Additionally displayed as a poster at the European Neuroendocrine Tumour Society (ENETS) annual conference, Lisbon 2011**

- Carroll RW, Martin JL, Tan T, Goldstone AP, Spalding D, Al-Nahhas A, Todd JF, Meeran K, Frilling A (2011) Primary lymph node gastrinoma: A genuine entity? Two case reports and a review of the literature. *Neuroendocrinology(Publication pending)* **Additionally displayed as a poster at the European Neuroendocrine Tumour Society (ENETS) annual conference, Lisbon 2011**

- Carroll RW, Todd JF (2011) The use of guar gum in the medical management of hyperinsulinaemic hypoglycaemia. *Neuroendocrinology(Publication pending)* **Additionally displayed as a poster at the European Neuroendocrine Tumour Society (ENETS) annual conference, Lisbon 2011**

- Carroll RW, Ghaffar A, Meeran K, Todd JF (2011) Primary renal somatostatinoma with hepatic metastases. *Neuroendocrinology(Publication pending)* **Additionally displayed as a poster at the European Neuroendocrine Tumour Society (ENETS) annual conference, Lisbon 2011**

- Carroll RW and Matfin G (2010) Hypercalcaemia. *Therapeutic advances in endocrinology and metabolism*. 1:225-234

- Carroll RW and Matfin G (2010) Thyroid storm. *Therapeutic advances in endocrinology and metabolism*. 1:139-145

- Carroll RW and Matfin G (2010) Hypocalcaemia. *Therapeutic advances in endocrinology and metabolism*. 1:29-33

Oral Presentations

- An update on Multiple endocrine tumours in MEN1. **Charing Cross Hospital, 2011**
- Gastroenteropancreatic Neuroendocrine Tumours. **Charing cross Hospital, 2011**
- A full house? Multiple endocrine tumours in MEN1. **Hammersmith Hospital medical meeting 2011**
- Thionamide induced agranulocytosis – management options and difficulties. **Hammersmith Symposium 2010**
- Short Stature; Is the answer in the hands? **British Endocrine Society Clinical Update 2010**
- The importance of making a correct diagnosis of male hypogonadism. **British Endocrine Society Clinical Update 2010**
- A case of progressive pituitary dysfunction? **British Endocrine Society Clinical Update 2010**
- Hypopituitarism secondary to a pituitary macroadenoma. **British Endocrine Society Clinical Update 2010**
- Diabetic emergencies; DKA, HONK and Hypoglycaemia. Life is sweet. **Diabetes Nurses conference, London 2010**

Poster Presentations

- The Short Synacthen Test (SST): Should we be testing at both 30 and 60 minutes? **Accepted for presentation at the British Endocrine society conference, Birmingham 2011**
- Multiple endocrine dysfunction in the context of psychiatric medication. **Accepted for presentation at the British Endocrine society conference, Birmingham 2011**
- Endocrine neoplastic manifestations of neurofibromatosis type 1 (NF1): A case and discussion. **Accepted for presentation at the British Endocrine society conference, Birmingham 2011**
- The effects of coffee on glucose tolerance and insulin sensitivity in people with Type 2 Diabetes**. NZSSD 2011, Wellington**
- Rathke's cleft cyst in pregnancy: A case report. **13th Clinicopathological conference on pituitary disease, London 2011**
- Human chorionic gonadotrophin induced gestational thyrotoxicosis: 2 case reports and a discussion. **British Thyroid Association annual meeting, London 2010**

- Metastatic Somatostatinoma: A rare cause of diabetes requiring insulin therapy. **Hammersmith Endocrine symposium, London 2010**
- Hypogonadotrophic hypogonadism in the setting of secondary haemochromatosis. **Hammersmith Endocrine symposium, London 2010**
- Management of a patient with an intra-partum pituitary haemorrhage **Hammersmith Endocrine symposium, London 2010**Thionamide induced agranulocytosis in a patient with Graves' thyrotoxicosis. **Hammersmith Endocrine symposium, London 2010**
- Paraganglioma: Gallium-68 DOTOTATE PET CT scan superior to MIBG scanning in metastatic disease. **Hammersmith Endocrine symposium, London 2010**
- A case of metastatic neuroendocrine tumour illustrating that a conservative approach to the management of such tumours can be justified. **Hammersmith Endocrine symposium, London 2010**
- Non-functioning pituitary adenoma: an incidental finding or a stroke mimic? **Hammersmith Endocrine symposium, London 2010**

Other media

- Primary aldosteronism. You and your hormones. **British Endocrine Society public website**
- Nelson's syndrome. You and your hormones. **British Endocrine Society public website**
- Hyperaldosteronsim. You and your hormones. **British Endocrine Society public website**
- Hypocalcaemia. You and your hormones. **British Endocrine Society public website**
- Gestational diabetes. **National Childcare Trust (UK) newsletter September 2010**
- Vitamin supplementation in pregnancy. **National Childcare Trust (UK) newsletter Jan 2011**

Research/articles in progress

- Zollinger-Ellison syndrome with a normal fasting gastrin? **Submission to the 'Lancet' for consideration June 2011**
- Lesson of the week: Consider MEN1 in multiglandular parathyroid dysfunction. **Submission to the 'BMJ' for consideration June 2011**
- Endocrine and metabolic emergencies: Phaeochromocytoma and Paraganglioma. **Due for publication July 2011**
- Vitamin D and the outcome in sepsis. **Awaiting ethical approval, 2011**
- The use of Gallium-68 DOTATATE PET CT in the assessment of Insulinoma. **Journal submission pending**
- Review article: Gestational thyroid dysfunction. **Journal submission pending**
- Review article: An update on multiple endocrine neoplasia (MEN) type 1. **Journal submission pending**
- The role of the c-peptide suppression test in the assessment of insulinoma. **Journal submission pending**
- Cerebral salt wasting syndrome **Journal submission pending**
- 131-MIBG scintigraphy versus Gallium-68 DOTATATE PET CT in the assessment of phaeochromocytoma and Paraganglioma. **Aiming for journal submission 2011**
- The role of postural studies in the assessment of primary hyperaldostronism. **Aiming for journal submission 2011**