

## **Consultant Sabbatical Fellowship Report, Winter 2018**

### **Dr Nigel Burrows**

I would like to thank the BAD for funding my research sabbatical. The Consultant Sabbatical Fellowship Award facilitated a fulltime locum consultant to cover my absence for 2 months. I was able to extend the sabbatical by another month using other research monies.

After successfully obtaining grant funding, from Addenbrooke's Charitable Funds, I started the sabbatical in September 2018, to focus primarily on a research project that had been in the planning stages for some time but, had never progressed due to clashes with other NHS commitments.

Thus, freed from my clinical commitments, I was able to collaborate with two other departments to finalise the research protocol and seek ethical approval. This outcome was a project titled the 'AUTONOMY study' (Extra-Articular Manifestations of Hypermobile Ehlers-Danlos Syndrome). This is an observational study of extra-articular manifestations in the symptomatic hypermobile (including hypermobile Ehlers-Danlos syndrome) patient population with comparison to healthy individuals.

It is recognised that some patients with Ehlers-Danlos Syndromes (EDS) report reduced efficacy of local anaesthesia (LA). This was first tested in a small number of patients by a Danish group, in 1990 [1,2]. This work has never been repeated. However, a later survey in the UK identified that approximately 60% of joint hypermobility patients self report reduced effectiveness of LA [3]. I completed my MD on the molecular genetics of EDS in 1997. The phenomenon of LA insensitivity, in predominantly the hypermobile subtype of EDS, has been of interest to me since. In 2000 I was involved in a study of 6 EDS patients. This demonstrated that the lack of response to LA is not due to rapid dispersal of the drug in the skin [4]. The mechanism, and true frequency of this reported problem, remains unclear. There is some emerging evidence to suggest that small fibre pathology is a feature of several EDS subtypes and this may be relevant.

In addition to local anaesthetic insensitivity some hypermobile patients also report a number of other extra-articular manifestations including autonomic dysfunction with symptoms of orthostatic intolerance. Our aim is to test patients and controls to topical local anaesthetic insensitivity and to measure key cardiovascular and autonomic parameters. Skin biopsies will be obtained, where possible, for intraepidermal nerve fibre measurements.

In order to characterise these manifestations, and to determine whether there is any link between them, and local anaesthetic insensitivity, I am collaborating with Professor Ian Wilkinson and his colleagues in the Division of Experimental Medicine & Immunotherapeutics (EMIT), Department of Medicine and Dr Mike Lee, University Lecturer & Honorary Consultant in Pain Medicine, Cambridge University Hospitals NHS Foundation Trust/University of Cambridge.

After completion of the protocol and ethical approval, I helped test and refine the methodology in control subjects [see Figure]. I also created a database of potential participants so that a PhD student, assigned to this study, under the supervision of the EMIT division, could start to recruit patients.

As the research was being undertaken at Addenbrooke's Hospital I was able to ensure continuity of care of my more complex medical patients. I continued with some of my specialist clinical activities (genodermatosis clinic). This meant that patient waiting times for these patients were not breached.

During this time I also continued to co-lead the genetic/dermatology MDT and jointly set up a new paediatric rheumatology/dermatology MDT.

A highlight of the sabbatical was the opportunity, in October 2018, to go to the ALERT Hospital in Addis Ababa, Ethiopia, to give a series of lectures to the dermatology residents over a week. It was rewarding to be able to give time to support less resourced dermatology services through the teaching in Addis Ababa. I was also able to attend the International Symposium on the Ehlers-Danlos Syndromes in Ghent and submit a poster on Cutaneous-related Common Data Elements in EDS.

One of the most satisfying aspects of the sabbatical has been my involvement in different fields of work. This would not have been possible without the flexibility afforded to me through the sabbatical. The tangible and intangible benefits have been invaluable and I would highly recommend other colleagues who, like me, have been in a consultant post for many years to consider a sabbatical.

## REFERENCES

1. Arendt-Nielsen L, Kaalund S, Bjerring P and Høgsaa B. Insufficient effect of local analgesics in Ehlers Danlos type III patients (connective tissue disorder). *Acta Anaesthesiol Scand*. 1990;34:358-61.
2. Arendt-Nielsen L, Kaalund S, Høgsaa B, Bjerring P and Grevy C. The Response to Local Anaesthetics (EMLA-cream) as a Clinical Test to Diagnose between Hypermobility and Ehlers Danlos Type III Syndrome. *Scand J Rheumatol*. 1991;20:190-95.
3. Hakim AJ, Grahame R, Norris P and Hopper C. Local anaesthetic failure in joint hypermobility syndrome. *J R Soc Med*. 2005;98:84-5.
4. Oliver DW, Balan KK, Burrows NP and Hall PN. Dispersal of radioisotope labelled solution following deep dermal injection in Ehlers-Danlos syndrome. *Br J Plast Surg*. 2000;53:308-12.

## FIGURE

The author undergoing LA testing with the application of EMLA cream, under occlusion, to the left and right anterior thighs.

