2016 UK CROSS-LINKING CONSORTIUM MEETING

Over 40 people, including 20 of our UK Cross-linking Consortium members, attended the 2016 UK-CXL meeting in Birmingham, which was held as a satellite to the Royal College of Ophthalmologist Annual Congress.

The meeting was introduced by Dr Sally Hayes, a research fellow from Cardiff University, who highlighted the growth of the Consortium in recent years. From its establishment in 2013 with a steering committee of just 8 it now has a membership of over 40 ophthalmologists, optometrists and vision scientists all dedicated to the development of a code of best practice for corneal cross-linking.

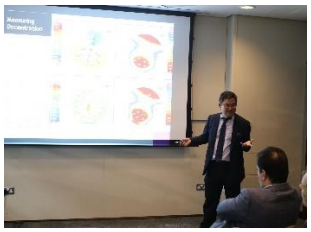
The first speaker, Mr Samer Hamada, a consultant ophthalmic surgeon at Queen Victoria Hospital, presented a review of epithelium-off cross-linking. He described how on the basis of numerous scientific and clinical studies, epithelium-off cross-linking was deemed to be a safe and effective treatment for halting keratoconus progression and gained NICE approval in 2013. However, Samer also drew the audience's attention to the 2015 Cochrane report, which using the strictest criteria and only accepting data from randomised clinical trials, concluded that the although the treatment presented an 80-90% relative risk reduction in progression over 12 months, adverse effects were not uncommon and there remained uncertainty as to the size of the effect.

Mr David O'Brart, a consultant at St Thomas's Hospital and Professor at King's College London, followed on with a review of epithelium-on cross-linking and highlighted the vast number of treatment variations in existence. He focused his attention on the St Thomas'/Cardiff protocol, a modified iontophoresis technique which he has developed to enhance the permeation of riboflavin across the intact epithelium. The technique differs from that of the Sooft Italia iontophoresis protocol in that it uses a higher concentration of riboflavin, includes a soak time and a longer duration of iontophoresis. Alongside data from his scientific investigations, which demonstrate enhanced stromal riboflavin uptake compared to other trans-epithelial protocols, he also showed early results from his ongoing randomised controlled study. He showed that at 12 months follow-up the effectiveness of the modified iontophoresis treatment was comparable to that of epithelium-off cross-linking, however, he was careful to warn of the risks of over interpreting interim results. Nevertheless, the modified iontophoresis protocol may prove to be an effective technique to prevent the progression of keratoconus and avoid the postoperative pain associated with epithelial debridement.

After being brought up to date on the current literature relating to cross-linking, the meeting progressed to talk of a new paediatric cross-linking trial, named KERALINK, which is a 3 centre randomised controlled trial involving Moorfields Eye Hospital, Sheffield Teaching Hospital and the

University of Liverpool. The aim of the trial is to assess the efficacy and safety of cross-linking in children and young people with progressive keratoconus in one or both eyes. Recruitment for the trial is expected to start on 1st June 2016 and further details of inclusion criteria can be found at: http://www.nets.nihr.ac.uk/projects/eme/142318.

Publicity of the KERALINK trial was followed by a lively debate that was instigated by Mr Mayank Nanavaty (ophthalmic consultant at Brighton and Sussex University Hospital) asking the audience to participate in defining keratoconus progression. What became evident during the discussion was the variability in people's definition of the term progression and the limited repeatability of topography measurements with increasing disease severity.



Mr Lyndon Tu, ophthalmic surgeon at Abergele Hospital, went on to describe the inter-relationship between three keratoconus cone parameters: pachymetry, steepness and decentration. During his presentation he provided a compelling case for considering cone decentration as an additional parameter with which to monitor keratoconus progression.

The results of the Royal College of Ophthalmology and Bowman's Club cross-linking survey were presented by Mr Stephen Kaye, a consultant ophthalmologist from St Pauls Eye Unit at the Royal Liverpool University Hospital. The survey, to which 91 ophthalmologists responded, showed that cross-linking is currently offered at 26 centres. Of the 47 centres that don't offer cross-linking, 20 have confirmed that they plan to do so in the future.

Mr Dan Gore, a recently appointed ophthalmic consultant at Moorfield's Eye Hospital, then picked up on earlier presentations identifying the growing number of cross-linking treatment variations available and in doing so made the case for the development of a national keratoconus database. He argued that 'randomised controlled trials cannot reflect, let alone keep up to date with real world practice' and that a national e-registry of keratoconus data, with in-built temporal trend analysis and revalidation ready outputs, would be more efficient for clinicians and improve patient care. His presentation was met with enthusiasm and led to an extended discussion about the way in which the potential of the e-registry could be maximised. The general consensus was that a survey should be sent to all Consortium members to identify which treatment protocols were currently in use, after which the Consortium would collectively recommend a limited number of treatments for inclusion in the e-registry. Ms Stephanie Campbell, an optometrist at Bristol Eye Hospital, made the point that there is a need to not only standardise the cross-linking treatment but also the way in which the treatment outcomes are measured. The development of the keratoconus e-registry is being led by Mr Dan Gore with funding from a Medical Research Council grant awarded to Professor Keith Meek from Cardiff University. The e-registry, which will be housed within Open Eyes (an open source electronic medical record for eye care), is anticipated to undergo its primary stage of testing at Moorfields over the summer and will later be rolled out nationwide.

Those attending the meeting found it very worthwhile and there was clearly an appetite amongst the audience for the Consortium to take more of a lead in promoting excellence in cross-linking (clinical and research) in the UK. We look forward to seeing the Consortium go from strength to strength over the coming years.

A few photos from the day