Interviews

Christopher Edwards and Karen Walker-Bone spoke to the EMJ about their ongoing passion for rheumatology, the driving forces behind their work, and the effects of COVID-19 on their field in the last year.

Featuring: Christopher Edwards and Karen Walker-Bone.

Christopher Edwards

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Q1 What do you most enjoy about being a rheumatologist?

I think rheumatology is a great speciality because it's a mixture of all of the medical specialities, and the diseases we look after can affect many different organ systems in many different parts of the body. Some of those are acute and shortlived, some of those are chronic and long-term. You get to understand patients and people over a longer period of time and the reason I became a rheumatologist was [because of] multi-system inflammatory diseases like lupus; they involve different organ systems and sometimes they are complicated, they need judgment, and I found that attractive.

Q2 What skills or attitudes did you have when starting your career, and how do you think they have helped or hindered you as you progressed in the field?

Rheumatology requires all these different skills to pull together information from lots of different places. I think good rheumatologists often have the ability to take information from blood results, from imaging, listening to the patients most importantly and from examining the patient and weighing that altogether. One of the things that I'm really interested in is how you know when you have crossed the threshold that allows you to make a decision; often what a rheumatologist needs to be able to do is weigh up the risk and

the benefit in a complex situation. Maybe this is true for many physicians, but you often need to weigh up situations where the evidence isn't all there, so you try to make a decision with incomplete information to do the best for the person in front of you. That's a challenge, but I think it can be very interesting and rewarding as well and I suppose that's something that never lets up.

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Q3

Why are the environmental causes of autoimmune rheumatic disease and new therapies for rheumatoid arthritis and lupus a particular interest of yours?

When you have complex diseases, particularly immune and inflammatory diseases, trying to decide what the underlying causes are is really interesting. We know what we are is a mixture of our genes: what we inherit passed down from generations of our ancestors. And of course, the genetics of our immune system is heavily influenced by the infections that were around our ancestors as they were passing through the last few 100,000 years. We needed to have very nasty immune systems to protect us from infection and we have really needed that over the last year with COVID-19. Of course, that immune system gets it wrong sometimes and the environment can 'help' (that's probably the wrong word) to get it wrong. There are some things in the environment that stimulate the immune system to make the immune system more likely to make a mistake and to say 'that joint looks foreign' or 'that bit of tissue doesn't look like it belongs here'. The immune system then attacks. Some of the classic environmental factors include smoking, certain sorts of infection, sunlight exposure for lupus. There are things that happen to us in the environment and other things that are inherent within us and it's that combination that gives the risk of developing one of these illnesses such as lupus.

Q4

Looking back at your career thus far, what has been your proudest achievement?

I think probably some of the biggest achievements have been over the last year for me and maybe that's because it's so recent. I have a few roles: I'm a consultant rheumatologist, but I am also

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an associate director of a National Institutes for Health Research (NIHR) clinical research facility. These are the environments where translational medicine studies are performed. At the start of the pandemic in 2020, and at high speed, many clinical research facilities across the UK, including ours in Southampton, were repurposed to primarily do COVID-19 studies. If I think about proud moments, then standing in the big gymnasium at the University of Southampton in April time last year I remember seeing some of the first Phase I patients going into the Oxford/AstraZeneca vaccine study and hoping it would be effective. I was just impressed by all the brave volunteers and all the dedicated research staff and seeing what they had been able to achieve in such a short time.

It didn't matter that I was a rheumatologist or that one of the nurses usually did respiratory studies, everyone was working flexibly towards a common goal. I think that was the proudest thing. That was amazing to see.

Q5 Over the 20 years you have been practising as a rheumatologist, how have you seen the field change, specifically with regard to advancements in the technology and therapies used? What do you think are the key advantages and disadvantages of this?

Some of the key things are the obvious headline ones, such as the developments in new therapies. I was appointed as a consultant about 20 years ago and that was about the time biological therapies became available to treat rheumatoid arthritis. I was really lucky to be at the Kennedy Institute in London [now University of Oxford, UK] when some of those early studies were being done. These treatments have transformed the lives of many patients and you really see that in very simple things; if you had taken a photo of the waiting room when I was a trainee or a student at King's College London, UK, you would have seen many patients with rheumatoid with damaged and deformed joints using wheelchairs. Therapists spent time making them special knives and forks to use so they could eat for themselves. It's a terrible disease. Now, if you went and took a photo of the clinic in Southampton, which will be the same around the country and around the world, people no longer experience damage like that. For the majority, new therapies have made a massive difference, but it's also more than that. It's the ability to do fantastic research studies, to answer questions about how we should approach the strategy of treatment, treat early, treat to target, keep changing medicines if they don't work, and encouragement of a restlessness to keep altering and trying to improve things if it doesn't work for a patient. The drug developments have also gone hand-inhand with massive advances in technology, such as in molecular biology, which has improved our ability to phenotype a patient more accurately.

Q6 Are there any innovations on the horizon in the field of rheumatic surgery that you believe to be a major breakthrough?

There are certainly more new therapies. We have moved from a situation where we've had biological therapies, large molecules that have to be injected, and we've gone to a situation

where with some of the smaller molecules being developed like the JAK inhibitors, we can give people a tablet to do a similar sort of job.

Then there's stratified and personalised medicine, where we are trying to pick the correct approach for an individual rather than assuming 'one size fits all'. It's trying to give someone a bespoke treatment as opposed to something that's just off the shelf for everybody.

I'm also interested in the effect of chronic inflammation on the brain and how illnesses that cause chronic inflammation have effects on people's mood, on depression and anxiety, and on their cognitive function as well. How quickly and how well people can think is affected and so that link between systemic inflammation and other diseases is fascinating. The brain is like the deep oceans: there are still lots of things we don't understand about it. I think that is one to watch for the in the future.

Q7 One of your current projects includes understanding the treatment of rheumatoid arthritis in the UK. What have been the greatest challenges faced by the NHS and rheumatologists during the COVID-19 pandemic?

I am going to say three things; maybe there are lots more but there are three major things. One is about repurposing what we do and I've mentioned already that in an emergency like this you have to use people's skills to do many different jobs. Many rheumatologists and many rheumatology nurses have had to spend time on COVID-19-related work. It's what we do, and I think most people have been happy to use their medical skill to try to help by working in that environment. But, that was a challenge.

Then there's the challenge of having a group of patients whose immune systems don't work normally who then go on immunosuppressive drugs and initially not understanding how high their risk was of getting bad COVID-19, being hospitalised or dying. How much did they need to shield? Should we continue their immunosuppressive therapies? It turns out a year later that many of the therapies we use don't really increase the risk. Some of them have been used to treat COVID-19, like dexamethasone or the IL-6 inhibitor tocilizumab. With current knowledge we're a bit less worried now and the increased risk of a poor outcome with COVID-19 for patients with rheumatic diseases is more to do with people being older or having other comorbidities.

Then the last thing, and probably the most difficult thing, is that when all of the drama of the last year settles down people will realise that for the last year many patients with disease haven't been diagnosed or haven't received timely care. There are enormous waiting lists building up in hospitals. The challenge now is how people manage that and catch up over the next probably 2 or 3 years. That's a real challenge for people.

Q8 Your contributions to continuing medical education is represented in your role on the European Alliance of Associations for Rheumatology (EULAR) Education Committee. Where can we expect to see the focus of the Education Committee lie in the coming years?

I'm the Chair-Elect of the EULAR education committee; so, from June 2021, I'll be the Chair of the EULAR education committee.

Some of the focus in the last year has been on the challenge of COVID-19 and how it delayed research studies and interrupted lots of educational events, which would normally have been face-to-face events but now are virtual. We have learnt about how you can get the best out of virtual meetings. There needs to be shorter talks and longer for discussion so we can really hear what experts think. If someone is sitting at a computer screen, it can be very hard to sit through a long lecture or a whole meeting. I think some meetings will remain virtual or hybrid and for certain formats it can work very well. Another change is that the EULAR online educational courses are going through a process of being updated to a more modern format. I think people will enjoy this and I would encourage everyone to take a look. We are also working on standards needed to train rheumatologists across Europe. EULAR is committed to providing high-quality educational opportunities that are relevant to rheumatologists across the world. We are always looking for new ideas.