Inside

Page 1:
Research in IgA nephropathy

Page 2-4:
Our Research team

Page 6:
The First UK IgA Nephropathy Patient Information Day

Research in IgA nephropathy

Leicester is the leading UK centre studying IgA nephropathy (IgAN)

One of the functions of the 2 kidneys in the body is to filter out waste products from the blood and release them from the body in urine. IgAN is diagnosed when a patient has a kidney biopsy and a protein called immunoglobulin A (IgA) is found in the tiny sieves in the kidney, these sieves are called glomeruli.

IgA is a protein which is normally found in the blood, where it helps the body fight infection. In health, IgA is not present in the kidney. We believe IgA nephropathy is caused by the formation in the blood of complexes containing IgA. These complexes are formed by the “sticking together” of a number of proteins and we believe a specific form of IgA starts this process.

This specific type of IgA is not commonly found in the blood. Once these complexes are formed they are prone to depositing in the very fine sieves of the kidney (glomeruli), where, in susceptible people, they trigger inflammation and scarring of the glomeruli (glomerulonephritis) and the rest of the kidney – resulting in progressive kidney damage. In some people this damage is so severe that it prevents the kidney from functioning and kidney failure develops. At this point the patient needs dialysis or a kidney transplant.

Our research focuses on understanding a number of key areas in this process.

contact

Dr Jonathan Barratt,
The John Walls Renal Unit,
Leicester General Hospital,
LE5 4PW

e: jb81@le.ac.uk
Our Research team

Professor John Feehally
I became interested in IgA nephropathy when I was a young doctor training in nephrology research, and I published my first research paper on IgA nephropathy in 1984. There has been a research group studying IgA nephropathy in Leicester ever since I became a consultant nephrologist here in 1988. I became Professor of Renal Medicine at the University of Leicester in 1999.

As well as laboratory research on IgA nephropathy (now headed by Dr Jonathan Barratt) I have also been involved in national and international IgA nephropathy research collaborations including the International IgA Nephropathy Network which I chaired from 2000-13. These collaborations have produced new insights into the genetics of IgA nephropathy, and also a new international classification of the kidney biopsy appearances of IgA nephropathy, which helps to improve our prediction of prognosis.

I have lectured on IgA nephropathy around the world including all the major nephrology congresses.

I retire from clinical practice in 2015, but I am remaining active in my work related to IgA nephropathy.

Dr Jonathan Barratt
I have worked in Leicester for the past 18 years having moved down from Manchester in 1996 where I went to medical school. I joined Professor John Feehally’s research team and between 1996 and 2000 undertook a PhD looking at how IgA once deposited in the kidney interacts with cells within the glomerulus. Following on from my PhD I combined research in IgA nephropathy with finishing my clinical training and in 2003 I took up a post that allowed me to combine being a Consultant Nephrologist and a University-based researcher. I currently work half my time on the clinical service seeing patients with a variety of different types of kidney disease, and half my time leading the IgA nephropathy research group and running clinical trials in IgA nephropathy and other types of kidney disease. I have a number of collaborations with IgA nephropathy researchers from around the world and am treasurer for the International IgA Nephropathy Network and recently helped organise the 1st Oxford Conference on IgA nephropathy.

Dr Chee Kay Cheung
I qualified in medicine in 2003 from the University of Leeds, and am a Specialist Registrar in Nephrology, in the fourth year of specialty training. I moved down from Leeds to undertake research in IgA nephropathy, and started my PhD in 2012 supervised by Dr Jonathan Barratt, Dr Karen Molyneux and Prof. Nigel Brunskill, looking at the mechanisms behind IgA nephropathy and progressive kidney disease. My research is primarily laboratory based and encompasses isolating IgA from patients with IgA nephropathy and looking at its effects on various kidney cell types. I also have on call duties at the Renal Unit at the Leicester General Hospital, and assist Dr Barratt with clinical trials in IgA nephropathy.

Dr Karen Molyneux
I lead the lab side of the research group. Having a scientist and a medical doctor lead the group helps extend the breadth of knowledge and experience we can apply to the research projects. I graduated from Liverpool University with a degree in Biochemistry and worked in industry for 3 years before studying for my PhD with the Genetics department of Leicester University. I have worked in research posts at the Royal Children’s Hospital, Melbourne, Australia and Royal Veterinary College, London. I joined the IgA nephropathy group in 2001 after having a career break to bring up my children. I am involved with all the lab research projects and supervise the students who come through the lab studying for a Bsc, Msc, intercalated Bsc or PhD. I have close links with the IgAN Patient Support group and edit the Leicester Kidney Research newsletter.
Dr Dina Nilasari
I started my career as a medical doctor and trainee nephrologist in Wahidin Sudirohusodo Hospital, Hasanuddin University Hospital, Makassar, Indonesia. My clinical and research interest in glomerulonephritis, especially IgA nephropathy, developed during my ERA-EDTA fellowship at the Hammersmith hospital, London. I am hugely committed to teaching and training. I am about to start studying for a PhD with the IgA nephropathy research group. My PhD will help me with my future career as a lecturer and nephrologist. I am hopeful that my work here will enable me to establish collaborative research projects between Hasanuddin University, Indonesia and the IgA nephropathy research group at the University of Leicester in the future.

Dr Izabella Pawluczyk
After graduating from Birmingham University with a degree in Biochemistry I worked for 2 years in industry. I then spent 4 years in the Cancer Research Campaign Laboratories at Nottingham University. There I was involved in developing ricin A-chain-conjugated antibodies for use as ‘magic bullets’ in targeting colorectal cancer. After a 3 year break to have a family, I joined the Renal Group based at the Leicester General Hospital where I studied specialised cells called mesangial cells and macrophages, investigating their role in the kidney scarring process and completed my PhD. I have since investigated the role of different kidney cells called podocytes and their role in the development of proteinuria – a loss of protein in the urine. I was particularly interested in the role played by certain cell surface sugars in this process. My current project within the IgA group is investigating how very short pieces of RNA (a close relation of DNA) can influence the development of IgA nephropathy.

Mrs Tricia Higgins
My name is Tricia Higgins and I joined the Renal Research Group just over 10 years ago bringing my expertise from a laboratory background in industry, along with organisational skills, dealing with chemicals and health and safety. I help all the members of the Renal Group by sourcing any items they require for their research, such as antibodies or equipment and then do the COSHH or risk assessments, enabling the goods to be brought into the University. I also work with the IgA group alongside the scientists and students researching IgA Nephropathy. My husband and 2 of my children have scientific backgrounds and we all find research exciting so I have their full backing and interest and I hope this will continue with my grandchildren.

David Wimbury
David Wimbury is a graduate technician who is working with us temporarily until he starts a postgraduate position. He graduated from the University of the West of England during July 2014. He is analysing serum samples from a large group of IgAN patients and their families to determine which part of the human genome is linked to the production of the unusual IgA molecules found in the serum of many IgAN patients.
Dr William Dallywater

During medical school at Nottingham, I undertook a Bachelor of Medical Sciences degree, where I had the opportunity to complete a laboratory project in immunology. This time in research motivated me to consider a career as a clinical academic. In order to help realise this aim, I gained a position on the academic foundation programme in Leicester, which allows me 2 days a week to do research alongside my work as a junior doctor. My research in Dr Barratt’s group focusses on the expression of receptors for IgA in the glomerulus. I’m hoping to become an academic histopathologist in future.

See Cheng Yeo

I am currently an Associate Consultant with the Department of Renal Medicine in Tan Tock Seng Hospital (TTSH), Singapore TTSH. My specialty interests are in the pathogenesis and treatment of glomerular diseases. I received a Health Manpower Development Plan scholarship in 2013 to investigate the three dimensional molecular structure of dimeric IgA in IgA nephropathy at Leicester University. I am also actively involved in clinical trials in kidney disease.

Dr Suceena Alexander

I carried out my medical training at the Christian Medical College (CMC), Vellore, India. Recently, I have been awarded the “Early Career Fellowship” by the Wellcome/ DBT India Alliance for research on IgA nephropathy among Indians, in order to better understand demographic differences and the pathophysiology in our population. This fellowship involves collaboration with Dr. John Feehally and Dr. Jonathan Barratt’s research team in Leicester, and groups at Imperial College, London, Leiden University, Netherlands, and C-CAMP, Bangalore, India.

Undergraduate and Postgraduate Students

Each year we host students working towards a Bsc in Biological Sciences, an Msc in Chronic Disease and Immunity, or an Intercalated Medical Bsc in the laboratory. The projects the students work on augment our main IgA research themes. This years batch of students, Jasraj Singh Bhachu, Eman Alkoot and Helena Emery are investigating if the level of IgA1 or immune complexes in blood from IgAN patients is inherited from their parents and what part of the glomeruli does the IgA1 bind to which it gets stuck in the glomeruli.

The Renal Research Nurse Team

Based in the Leicester Renal Unit we deliver a whole range of clinical research trials for patients with kidney disease. We currently deliver over 25 different clinical trials of which three are of new treatments for IgA nephropathy:

- **NEFIGAN**: A Study to Evaluate the Efficacy and Safety of Nefecon® in IgA nephropathy patients at risk of developing end-stage renal disease
- **SIGN**: A Clinical Study to Assess the Safety and Efficacy of Fostamatinib in the Treatment of IgA Nephropathy.
- **BRIGHT-SC**: A Study to Evaluate the Efficacy and Safety of Blisibimod Administration in Subjects with IgA Nephropathy.

In addition to running clinical trials we also work with Jonathan and Karen helping to collect samples from patients with IgA nephropathy for study in the laboratory.
In 2014 the Leicester IgA nephropathy research team organised the first UK IgA nephropathy Patient Information Day held at the National Space Centre in Leicester, co-sponsored by the Kidney Patients Association and Kidney Research UK.

The overwhelming feedback from this day was that patients and their relatives were committed to supporting research into this disease both through raising awareness with funding organisations and also by getting involved in our research studies by donating blood and kidney tissue. Indeed, following this event we have been regularly contacted by patients from across the UK offering to come up to Leicester to get involved in our research programme.

As a consequence of the information day some of the patients have set up a support group. We are arranging with the group for them to visit our laboratories and for us to tell them about our research projects.