University of Birmingham

Dr Matthew Morgan MB ChB, MRCP, PhD

Clinical Senior Lecturer in Renal Medicine

School of Immunity and Infection

Contact details

Telephone +44 (0)121 371 3223 (tel:+44 121 371 3223)

Email m.d.morgan@bham.ac.uk (mailto:m.d.morgan@bham.ac.uk)

Centre for Translational Inflammation Research
University of Birmingham Research Laboratories
Queen Elizabeth Hospital Birmingham
Mindelsohn Way
Edgbaston
Birmingham, B15 2WB

About

Dr Morgan is a Clinical Senior Lecturer in Renal Medicine with an interest in the pathogenesis and treatment of inflammatory renal disease including anti-neutrophil cytoplasm antibody (ANCA) associated vasculitis. He is a member of the European Vasculitis Study Group (EUVAS - **http://www.vasculitis.org (http://www.vasculitis.org)**).

His main interests in ANCA associated vasculitis are in the role of T cells in the pathogenesis of the disease and in new treatments for vasculitis that may reduce disease and treatment associated morbidity and mortality.
Matthew has published a significant number of original research papers in this field as well as book chapters and review articles.

A keen educator, he is also actively involved in teaching on the medicine and dentistry undergraduate courses and on the local and regional post-graduate medicine training courses.

In clinical practice Dr Morgan works as an Honorary Consultant Nephrologist at University Hospitals Birmingham NHS Foundation Trust.

With Prof. Lorraine Harper he runs the Vasculitis Clinic at UHB NHS Foundation Trust. This is a multidisciplinary clinic seeing patients with mostly ANCA associated vasculitis (Wegener's granulomatosis/granulomatosis with polyangiitis, microscopic polyangiitis, Churg-Strauss Syndrome/eosinophilic granulomatosis with polyangiitis) as well as other primary vasculitides. This tertiary referral clinic sees patients from the West Midlands region as well as further afield within the UK.

In addition Dr Morgan sees patients with chronic kidney disease, primary glomerulonephritides, diabetic nephropathy and other inflammatory and autoimmune diseases within the Renal Outpatients and at the Queen Elizabeth Hospital Birmingham and the Birmingham Treatment Centre at City Hospital Birmingham.

Qualifications

- Certificate of Completion of Specialist Training (Renal Medicine) 2009
- PhD in Immunology (Birmingham) 2007
- MRCP (London) 1998
- MB ChB (Birmingham) 1995

Biography

Matthew qualified in Medicine from the University of Birmingham in 1995. He completed his general basic training and higher professional training in various hospitals in the West Midlands region. He was awarded a CCT in Renal Medicine in 2009.

He completed a PhD in Immunology at the University of Birmingham between 2003 and 2006 investigating the role of cytokines in ANCA associated vasculitis. This led to several research papers describing the role of IL-18 in renal inflammation and the lack of effect of anti-TNF antibodies for patients with ANCA associated vasculitis.

Since completing his PhD he has further developed an interest in the role of T cells in vasculitis. He is particularly interested in the CMV driven expansion of T cell subsets in patients with vasculitis (mainly CD28- T helper subsets) and the way this impacts on the immune system and leads to increased risk of infection and mortality in patients. Also of interest is the control of T cell responses to the auto-antigens myeloperoxidase and proteinase 3 and the effector mechanisms of the cytokines produced by autoreactive T cells.

Matthew is one of the consultants running the Birmingham Vasculitis Clinic at University Hospitals Birmingham. This clinic has around 300 patients with ANCA associated vasculitis and other forms of primary vasculitis under follow up. This clinic functions both as a multidisciplinary centre of excellence in the management of the acute and chronic problems associated with vasculitis and as a cohort of patients with chronic inflammatory disease on immunosuppression. This invaluable resource has facilitated patient participation in the EUVAS clinical trials to improve treatment for ANCA vasculitis. It has also permitted the development of clinical and translational studies investigating the chronic consequences of inflammation and immunosuppression in patients, particularly the effects on cardiovascular disease, immunodeficiency and infection.

As a clinical investigator he has been a co-investigator in several European Vasculitis Study Group (EUVAS) clinical trials investigating more effective and safer treatments for vasculitis. He has also developed collaborations both within the University of Birmingham and elsewhere to further investigate the pathogenesis of vasculitis and improvements in its treatment.

Teaching

Teaching Programmes

MBChB (/undergraduate/courses/med/medicine.aspx)

BDS (/undergraduate/courses/med/dental-surgery.aspx)

Postgraduate supervision

Matthew is interested in supervising doctoral research students in the following areas:

- The role of T cells and cytokines in autoimmune renal inflammation.
- The role of T cells in the pathogenesis of ANCA associated vasculitis.
- New pharmacological approaches to immune modulation in auto-immune inflammatory disease.

If you are interesting in studying any of these subject areas please contact Matthew on the contact deatils above, or for any general doctoral research enquiries, please email: **dr@contacts.bham.ac.uk (mailto:dr@contacts.bham.ac.uk)** or call +44 (0)121 414 5005.

For a full list of available Doctoral Research opportunities, please visit our **Doctoral Research programme listings (http://www.bham.findaphd.com/?es=y&apl=y&aplt=&show)** .

Research

RESEARCH THEMES

Anti-neutrophil cytoplasm antibodies, vasculitis, cytokines, T cells

RESEARCH ACTIVITY

Dr Morgan believes that much of the best research develops from productive collaborative relationships and is always keen to hear from potential new collaborators interested in working together.

Through the Vasculitis Clinic run in the NIHR/Wellcome Trust Birmingham Clinical Research Facility Matthew has access to a large well defined cohort of patients with primary systemic vasculitis. Patients attending this clinic are usually keen to participate in research projects and clinical trials that improve our understanding of their disease and lead to better treatments.

The Immunomodulatory effects of cytomegalovirus

In collaboration with Prof. Paul Moss' group he has recently completed an investigation into the immune modifying effects of CMV in vasculitis patients. This has demonstrated that CMV drives the expansion of CD28- CD4+ T helper cell populations in ANCA vasculitis leading to a reduction in naive cells and an increase in the risk of infection and mortality. This group is now addressing the question of whether this risk factor can be modified pharmacologically.

Cardiovascular risk in patients with ANCA vasculitis

With Professor Lorraine Harper he has been the first to demonstrate that patients with ANCA associated vasculitis have an increased risk of cardiovascular disease (CVD) compared to a matched cohort of patients with chronic kidney disease (a well recognised risk factor for cardiovascular disease). Several conventional risk factor contribute to the risk of CVD although do not account for the increased risk beyond that seen in chronic kidney disease patients. New projects are planned to further identify novel risk factors for CVD in vasculitis patients as well therapeutic strategies to ameliorate the risk.

T cells in ANCA vasculitis

Following on from his work demonstrating a functional and numerical defect in regulatory T cells in ANCA vasculitis as well as the persistence of activated T cells and increased serum cytokine concentrations in patients in remission he is currently investigating the role of Th17 cells in vasculitis and the effector mechanisms of Th17 cells in renal inflammation.

Other activities

Member of the NIHR/Wellcome Trust Birmingham Clinical Research Facility Scientific Advisory Committee.

Publications

Harper L, Morgan MD, Walsh M, Hoglund P, Westman K, Flossmann O, Tesar V, Vanhille P, de Groot K, Luqmani R, Flores-Suarez LF, Watts R, Pusey CD, Bruchfeld A, Rasmussen N, Blockmans D, Savage COS, Jayne D on behalf of EUVAS investigators. Pulse versus daily oral cyclophosphamide for induction of remission in ANCA-associated Vasculitis- Long term Follow up. Annals Rheum Dis 2012 Jun;71(6):955-60.

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Morgan MD, Pachnio A, Begum J, Roberts D, Rasmussen N, Neil DAH, Bajema I, Savage COS, Moss PA, Harper L. CD4+CD28- T-cell expansion in Wegener's granulomatosis is driven by latent CMV and is associated with an increased risk of infection and mortality. Arthritis Rheum 2011;63:2127-37.

Smith HJ, Hanvesakul R, Bentall A, Shabir S, Morgan MD, Briggs D, Cockwell P, Borrows R, Larche M, Ball S. T lymphocyte responses to non-polymorphic HLA derived peptides are associated with chronic renal allograft dysfunction. Transplantation. 2011;91:279-86

Morgan MD, Drayson MT, Savage COS, Harper L. Addition of Infliximab to standard therapy for Anti-Neutrophil Cytoplasm Antibody associated vasculitis. Nephron Clin Pract 2010;117:89-97.

Jones RB, Cohen Tevaert JW, Hauser T, Luqmani R, Morgan MD, Peh CA, Savage CO, Segelmark M, Tesar V, van Passen P, Walsh D, Walsh M, Westmann K, Jayne DRW on behalf of the European Vasculitis Study Group. Randomised trial of rituximab versus cyclophosphamide in ANCA associated renal vasculitis 'RITUXVAS'. New Eng J Med 2010: 363; 211-220

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Morgan MD, Turnbull J, Selamet U, Kaur-Hayer M, Nightingale P, Ferro C, Harper L. Increased incidence of cardiovascular events in patients with ANCA-associated vasculitis: matched pair cohort study. Arthritis Rheum 2009; 60: 3493-3500

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