Midland Rheumatology Society
Autumn Meeting 2017
Friday 17 November 2017
Birmingham Botanical Gardens
www.birminghambotanicalgardens.org.uk

08.45 Coffee and Registration

09.30 Welcome and Introduction

09.45 The Traumatic Side of Hand Surgery
Mrs Jill Webb, Consultant in Hand and Plastic surgery, QE Hospital

10.30 Clinical Papers and Oral Presentations
1. Management of Fibromyalgia in SLE Audit
   D Geh, C Gordon
2. Rheumatology Nurses Knowledge in the Ever-Changing Rheumatology –
   A Regional Survey Among East Midlands Rheumatology Specialist Nurses
   T Dorman, M Attwal, J Sabu, A Moorthy
3. Stability of Initial Sub-Type Classification and Persistence of Inflammatory
   Disease in Patients with Juvenile Idiopathic Arthritis in Adult Rheumatology Care
   M Jasim, N Erb
4. If a Patient is Positive for Anti-Scl-70 does it mean they have Scleroderma?
   E Palmer, S Tahir, P Jobanputra

11.30 Coffee Break

12.00 Clinical Case: Dr Nehal Narayan and Dr Emma Derrett-Smith

12.45 Lunch and Poster Viewing
14.00 Early Arthritis: Can we Prevent it?
Professor Andy Cope, Kings College London

14.50 Clinical Papers and Oral Presentations
5. To review the management of patients with vascular Behcets Disease at the Birmingham Behcets Syndrome Centre for excellence
   P Chandratre, T Adizie, D Carruthers, D Mitton, et al.
6. Impact Of The Clinical Commissioning Policy For Sildenafil And Bosentan In Patients With Systemic Sclerosis
   A Kapadia, P Courtney, P Lanyon
7. Is Anca Associated Vasculitis More Common in Areas with More Polluted Air?
   H Mahmood-Rao, P Lanyon, R Watts, F Pearce
8. Audit of the Clinical Efficacy and Safety of Etanercept Biosimilar (Benepali) to its Reference Product (Enbrel) In Patients with Inflammatory Arthritis: Experience from a District General Hospital in the United Kingdom
   J Ma, S Petford, L Jones, K Douglas, H John

15.50 Tea/Coffee

16.10 Early Arthritis: Can we Predict it (and do ‘Patients’ Want us to)?
Professor Karim Raza, The University of Birmingham

17.00 AGM

17.45 Close

18.00 Dinner at The High Field, 22 Highfield Road, Edgbaston, B15 3DP
https://www.highfieldedgbaston.co.uk/

This Meeting is Approved by Royal College of Physicians, London
(6 CPD points applied for)

The following Industry sponsors have provided funding for an exhibition stand/space at this educational meeting and have had no control over the agenda, speaker choice or content of the meeting. In accordance with the ABPI code of practice, the funding obtained is solely for the Midland Rheumatology Society Meeting educational agenda and is not a contribution to the costs aligned to recreational activities and evening dinner: Abbvie, Bristol-Myers Squibb, Celgene, Chugai, Janssen-Cilag, Lilly, Medac Pharma, Nordic Pharma, Novartis, Pfizer, Sandoz, Sanofi, UCB.
Clinical Papers
MANAGEMENT OF FIBROMYALGIA IN SLE AUDIT

Authors: Daniel Geh¹, Caroline Gordon¹,².

¹Department of Rheumatology, Sandwell & West Birmingham Hospitals NHS Trust
²Rheumatology Research Group -Inflammation and Ageing, College of Medical & Dental Sciences, University of Birmingham

Introduction: Fibromyalgia is a functional syndrome characterised by chronic pain, fatigue and poor sleep. It has a prevalence of 2% in the general population. Some studies show the prevalence of fibromyalgia in systemic lupus erythematosus (SLE) to be 30%. The presence of fibromyalgia in SLE presents a significant clinical challenge. European League Against Rheumatism (EULAR) recommendations have been published on the best management of fibromyalgia. They recommend both non-pharmacological therapies (exercise therapy) and pharmacological therapies (amitriptyline, pregabalin, duloxetine and tramadol) in its management. They also strongly advise against the use of strong opioids. We planned to audit the management of fibromyalgia in our SLE cohort.

Audit standards:
1) ≥ 90% patients on a EULAR recommended pharmacological therapy
2) ≥ 90% patients given exercise advise or graded exercise programme referral
3) < 5% patients on a strong opioid

Methods: Patients were selected on the basis of SLE clinic attendance over a 2-month period. Recent clinic letters were used identify patients with a diagnosis of SLE and fibromyalgia. Previous letters back to 2012 were reviewed to determine which therapies had been offered to the patient.

Results: We captured a total patient population of 309 patients of whom 250 had a diagnosis of SLE and were being followed up. Of this SLE population 48 (19.2%) had a diagnosis of fibromyalgia. 90% (n= 43) of these patients had been offered at least one EULAR recommended pharmacological therapy. Of the individual pharmacological therapies amitriptyline and pregabalin (75% and 42% respectively) were the most commonly offered. Only 75% (n= 36) were documented in letters as having been offered exercise advice or been referred for a graded exercise programme. 17% (n=8) of patients were currently on a strong opioid although this was not initiated in our clinic.

Discussion: This audit has highlighted the high prevalence of fibromyalgia in the SLE cohort. It confirms that on the whole the correct pharmacological therapies are being offered to patients but highlights that not enough patients are definitely having exercise therapy, but the reasons for this are not clear from this audit. This audit also flags the high proportion of patients that have been started on strong opioid therapy, an inappropriate management option with potentially dangerous side effects.
Introduction
Rheumatology as a specialty moving rapidly due to the advent of novel therapeutics agents. Disease management concepts are also changing with treat to target approach and early escalation of therapies. Role of specialist nurses should not be under estimated in the tight control and achieving treat to target goals. Expectation of Specialist Nurse role has been changed over the years. NHS pressure in service delivery compromised teaching and training opportunities for Specialists Nurses which may results in knowledge gap. We attempted to explore the current knowledge and skills among our specialist nurses

Aim
1. To explore the knowledge perception of different disease management
2. To identify difference in two disease management RA and Spondyloarthropathy(SpA).
3. To evaluate the confidence level in assessing different Rheumatic diseases.

Methodology
This is a Questionnaire based prospective study among east midlands Rheumatology Specialist Nurses. Initial questionnaire was piloted and improved 17 questionnaires were distributed among the specialist nurses via email and in person. The questions were designed to gauge the nurses level of confidence in assessing different rheumatology conditions and also their confidence in making treatment decisions for different conditions.

Results and Discussion
26 out of 40 nurses in East Midlands responded with response rate of 65% .77% Reponses are from nurses working in University hospitals and 23% working from DGH. The level of experience in current role is variable from 2 to20 Year and clinical session performed by nurses varies from 2-8 per week. The nurses are mostly supervised by consultant and some do independent clinic. The awareness of delay in diagnosis of Spa is about 80% with average reported delay as 6years. Confidence in assessing RA is very good however not confident in assessing SLE. Confidence level in counselling biologic therapy varies with different diseases with SLE been very low. SpA assessment with extra articular management is low and less confidence in advising therapy in Pregnancy. Interesting note the awareness concept of Non-Radiographic Spa and MRI protocols in Spa Confidence is exists. Variable level of confidence in the in assessment of various diseases. Confidence in assessing Fibromyalgia in a patient with Rheumatic disease is at a low level.

Conclusion
Very good level of confidence in RA and PSA assessment and management noted however low levels of confidence in assessment of SLE and SpA. More education and training is needed particularly focused on assessment. This is first study among Rheumatology Specialist Nurses with limitations.

Reference
STABILITY OF INITIAL SUB-TYPE CLASSIFICATION AND PERSISTENCE OF INFLAMMATORY DISEASE IN PATIENTS WITH JUVENILE IDIOPATHIC ARTHRITIS IN ADULT RHEUMATOLOGY CARE

Dr Muhamad Jasim (Specialist Registrar in Rheumatology),
Dr Nicola Erb (Consultant Rheumatologist)
Department of Rheumatology, Dudley Group NHS Foundation Trust

Introduction
Juvenile idiopathic arthritis (JIA) is a chronic inflammatory joint condition that starts before the age of 16. Prevalence is estimated to be between 2 to 20 per 100,000 children. JIA is classified into 6 subtypes Oligoarticular (persistent or extended), Polyarticular (seropositive or negative), Systemic onset, Psoriatic, Enthesitis related or undifferentiated. Each of the sub-types have a varied natural history with some subtypes more frequently associated with persistence into adulthood. However, there is limited data on the stability of initial subtype classification after transfer to adult rheumatology services and immunosuppressant usage in adult patients with JIA.

Method
A retrospective notes review of patients attending the young adult rheumatology clinic (YAC) at the Dudley group hospitals was carried out. YAC manages patients aged 16 to 25 transferred from paediatric services or who have been referred directly by their GP. The diagnosis and treatment were assessed at first and subsequent appointments.

Results
42 young adult patients have been reviewed in the YAC since 2012. 11 patients had a non-inflammatory condition. The remaining 31 patients had a diagnosis of an inflammatory disease at presentation. 23 of the 31 patients with inflammatory disease had an initial diagnosis of JIA. Of these, 16(70%) of patients had been transferred from paediatric services.

Among the cohort of 23 JIA patients, 12 (52%) had polyarticular subtype, 6 (26%) oligoarticular subtype, 3 (13%) enthesitis related arthritis, 1 (4%) psoriatic arthritis and 1 (4%) unclassified JIA. 3 (13%) patients were rheumatoid factor positive – all had Polyarticular sub-type. 7 of the 23 patients were on disease modifying medication (methotrexate) at first presentation to the YAC. 8 (34%) patients were on biologic therapy for their JIA - 6 on Etanercept, 1 on Adalimumab and 1 on Abatacept.

During follow up, 2 patients had their subtype of JIA changed. The first patient from polyarticular JIA to psoriatic arthritis. This patient was rheumatoid factor negative and continued their Etanercept pre and post transition. The other patient’s diagnosis changed from enthesitis related JIA to psoriatic arthritis requiring a change in biologic therapy.

Other notable changes over the follow ups included less use of NSAIDS, wider use of DMARDs other than methotrexate and a more varied use of biologic agents.

Discussion
The majority of patient with a diagnosis of JIA at a time of entry into the YAC will have persistent disease and stability of their sub-type classification. Most patients require continued follow up. 20 of the 23 JIA patients have continue to have follow up in the YAC the remaining have not been discharged but reflect a key challenge encountered throughout with this group related to poor compliance with medication and frequent poor attendance at clinic appointments.
IF A PATIENT IS POSITIVE FOR ANTI-SCL-70 DOES IT MEAN THEY HAVE SCLERODERMA?

Emily Palmer¹, Sanna Tahir¹ and Dr Paresh Jobanputra DM, FRCP Edin²
¹Medical Student at the University of Birmingham
²Rheumatology Consultant at the Queen Elizabeth Hospital, Birmingham

Aim: To determine the diagnostic utility of anti-Scl-70 auto-antibodies in routine care

Methods: All anti-ENA tests requested from all hospital departments in Queen Elizabeth Hospital between January 2013 and Dec 2014 were identified. Anti-Scl-70 positive patients were selected and data was abstracted from their electronic patient records. Randomly selected ENA-ve/Scl-70-ve and ENA+ve/Scl-70-ve patients served as controls (two controls in each group for each Scl-70+ve patient). We used the diagnoses made by clinicians rather than applying published diagnostic criteria. Electronic records were reviewed in July 2017. Sensitivity, specificity, positive and negative likelihood ratios were calculated using standard 2x2 tables.

Results: A total of 4009 samples from 3581 patients originating in our hospital were tested for ENA during the study period. 2965 (82.8%) were ENA negative and 616 (17.2%) were positive by Quanta Lite ENA 6 ELISA. Of the 616 ENA+ve patients 29 patients were Scl-70+ve (Group 1). Controls were randomly selected and 58 ENA+ve/Scl-70-ve (Group 2) and 58 ENA-ve/Scl-70-ve (Group 3) patients were included. The median follow for these 145 patients, dated from index test, was 41.2 months (3.4 years). The frequency of renal crisis and digital ulcers amongst patients who were anti-Scl70 positive was 1 and 1, respectively compared to 1 patient in the scl-70 negative ENA positive group.

<table>
<thead>
<tr>
<th>Primary clinical diagnosis</th>
<th>Scl-70 +ve Group 1</th>
<th>ENA+ve / Scl-70 -ve Group 2</th>
<th>ENA -ve / Scl-70 –ve Group 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diffuse Scleroderma¹</td>
<td>3 (10.3%)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Limited Scleroderma²</td>
<td>2 (6.9%)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Isolated Raynaud's</td>
<td>0</td>
<td>1 (1.7%)</td>
<td>2 (3.4%)</td>
</tr>
<tr>
<td>Inflammatory arthritis</td>
<td>4 (13.8%)</td>
<td>4 (6.9%)</td>
<td>11 (19.0%)</td>
</tr>
<tr>
<td>Overlap CTD³</td>
<td>5 (17.2%)</td>
<td>13 (22.4%)</td>
<td>1 (1.7%)</td>
</tr>
<tr>
<td>SLE</td>
<td>4 (13.8%)</td>
<td>10 (17.2%)</td>
<td>1 (1.7%)</td>
</tr>
<tr>
<td>Discoid LE</td>
<td>1 (3.4%)</td>
<td>3 (5.2%)</td>
<td>0</td>
</tr>
<tr>
<td>Sjögren's Syndrome alone</td>
<td>2 (6.9%)</td>
<td>10 (17.2%)</td>
<td>2 (3.4%)</td>
</tr>
<tr>
<td>Other⁴</td>
<td>8 (27.6%)</td>
<td>17 (29.3%)</td>
<td>41 (70.7%)</td>
</tr>
<tr>
<td>Total</td>
<td>29 (100%)</td>
<td>58 (100%)</td>
<td>58 (100%)</td>
</tr>
</tbody>
</table>

¹ One patient with RA and 2 with ILD.
² One patient with RA and both had ILD.
³ Patients in whom clinicians use undifferentiated CTD or multiple diagnoses of connective tissue diseases including Sjögren’s and SLE but without mention of scleroderma.
⁴ Includes patients with liver, renal and neurological disease and a variety of non-rheumatic medical disorders.

The sensitivity of anti-Scl-70 for diffuse systemic sclerosis and limited scleroderma combined was 100% (CI 47.8-100%), specificity was 83.1% (75.9-88.9%), positive predictive value (PPV) of 17.2% (12.6-23.1%) and negative predictive value (NPV) of 100%. All forms of scleroderma combined with Raynaud’s gave a sensitivity of 45% (23.1-68.5%), specificity of 84.3% (76.7-90.1%), PPV of 31% (19.3-45.8%) and NPV of 90.7% (86.7-93.6%).

Conclusion: Most patients with anti-Scl-70 do not have systemic scleroderma or limited scleroderma, allowing for the fact that auto-antibodies may precede the development of disease by many years. None of the anti-Scl-70 negative patients had scleroderma spectrum disorders in this cohort, thus a negative test appears to have greater utility than a positive test.
Objectives: To review the management of patients with vascular Behcets Disease at the Birmingham Behcets Syndrome Centre for excellence.

Methods: This was a retrospective analysis of the electronic patient records of six patients with significant vascular manifestations of Behcets disease at our centre. The review focuses on the use of immunosuppression and the evidence base behind their use.

Results: A total of six patients were identified as having vascular disease typical of Behcets syndrome. All patients had extra-vascular clinical features to fulfill the ISG 1990 criteria for Behcets. The first patient is a 31 year old pregnant lady with DVT and Pulmonary embolus during previous pregnancy and superficial thrombophlebitis on treatment dose low molecular weight heparin (LMWH). Although the local obstetric team suggested full anticoagulation, the haematologist at the Centre suggested prophylactic LMWH and low dose prednisolone. Five further cases had mixed arterial aneurysmal and venous thrombotic disease, each requiring endovascular or surgical graft interposition and having steroids as the cornerstone of treatment. The second patient is a 35 year old lady with popliteal aneurysm, iliofemoral DVT, saccular aneurysm of innominate artery and aortic and coronary artery aneurysm. She underwent extensive vascular and surgical procedures including Endovascular stent via femoral artery followed by pseudo aneurysm which needed emergency graft insertion, several angioplasty procedures to stenotic lesions in femoral and popliteal arteries. The onset of a significant aortic arch aneurysm despite successive treatment with anti TNF therapy, cyclophosphamide and rituximab was complicated by coronary artery aneurysm rupture during aortic arch replacement with an ‘elephant trunk graft’. Hypotension during surgery led to popliteal artery stent occlusion and limb ischaemia requiring above knee amputation. She received Tocilizumab and prednisolone but polychondritis has relapsed (MAGIC syndrome). Case three was an 18 year old male with infra renal aortic aneurysm and Internal jugular vein thrombosis, treated with tocilizumab (previously azathioprine and cyclophosphamide). Case four was a 28 year old male with iliofemoral DVT, femoral pseudo aneurysm and pulmonary emboli, treated with azathioprine and cyclophosphamide. Case five was a 51 year old female with DVT and AAA, treated with tacrolimus. The last case was a 32 year old male with femoral DVT and femoral artery aneurysm which was repaired with a surgical graft which unfortunately had an anastomotic leak. He was treated with azathioprine and cyclophosphamide.

Conclusion: In reported studies the prevalence of vascular involvement in Behcets varies from 12.8 to 16.8%. Behcets is the only vasculitis to affect vessels of all sizes. The association between thrombotic manifestations in the venous system and arterial or pulmonary vascular lesions is important. Intuitively one might think that anticoagulation would be crucial but many studies have failed to demonstrate any added value from anticoagulation compared to immunomodulatory treatment even in the presence of thrombophilic factors. Evidence base for treatment of vascular Behcets remains weak, relying mainly on case reports, observational studies and expert opinion. The mainstay of treatment is steroid, azathioprine, cyclophosphamide and anti TNF alpha inhibitor in refractory cases. We have anecdotal experience of tocilizumab as well. Finally, endovascular approach is preferred to surgical graft interposition due to lower post-operative complication rates.
IMPACT OF THE CLINICAL COMMISSIONING POLICY FOR SILDENAFIL AND BOSENTAN IN PATIENTS WITH SYSTEMIC SCLEROSIS

Aneesa Kapadia, Philip Courtney and Peter Lanyon

Introduction: Digital ulceration (DU) is a common complication of systemic sclerosis (SSc) and causes impaired hand function leading to hospital admissions, when complicated by infection and subsequent gangrene needing amputation. About half of the patients with SSc report a history of DU’s and 10% have a current DU. Treatment of DU’s has always been multifaceted to include early recognition and use of oral vasodilators such as calcium channel blockers, ACE inhibitors, losartan and/or fluoxetine. Intravenous iloprost given as a five day course, although unlicensed, is evidence based and is often used to treat DU’s. This treatment however requires day case admissions, which increases the cost of treatment. In January 2015 NHS England has published a clinical commissioning policy for sildenafil and boventan in patients with systemic sclerosis. This policy recommends use of bosentan only if, combination therapy with iloprost and sildenafil fails.

Aims: To assess the impact of the clinical commissioning policy on our practice, and iloprost usage in our department at the Queens Medical Centre Campus at Nottingham University Hospitals, NHS Trust.

Methods: We audited electronic medical records of patients with systemic sclerosis from April 2014 to April 2017.

Results: We identified 36 patients with systemic sclerosis on treatment for digital ulceration with iloprost, of which 29 were female and 7 were male. Of these patients 16 were classified as localised cutaneous systemic sclerosis, 15 as diffuse cutaneous systemic sclerosis and 5 were undifferentiated. 28 patients were started on sildenafil post January 2015. Of the remaining 8, 2 had died, 1 had moved away and 5 were not started on it. The remaining five were not started on it due to factors such as patient choice and not requiring further therapy. The use of iloprost declined each year with 21 patients needing it in 2014-15, 18 in 2015-16 and 9 in 2016-17. None of our patients required bosentan for active DU’s during this audit period.

Conclusion: These trends strongly suggest that the introduction of sildenafil in our cohort of patient has led to a decrease in the use of iloprost. A possible caveat is that we have had milder winters in the last three years and the subsequent decrease in the need for iloprost. However, we can still conclude that the introduction of the commissioning policy has resulted in significant cost savings to the health economy and shows that the clinical commissioning policy has had an impact on iloprost use in patient with systemic sclerosis in our department.
IS ANCA ASSOCIATED VASCULITIS MORE COMMON IN AREAS WITH MORE POLLUTED AIR?

Hamzah Mahmood-Rao¹, Peter Lanyon², Richard Watts³, Fiona Pearce⁴
¹Royal Derby Hospitals NHS Trust, ²Nottingham University hospitals NHS Trust, ³Ipswich Hospital, ⁴University of Nottingham

Introduction: Air pollution has been linked to adverse health outcomes, including respiratory and cardiac disease. Some previous studies have suggested that ANCA-associated vasculitis (AAV) and other autoimmune diseases incidence may be associated with air pollutants, particularly particulates. The aim of this study is to understand the association between increased levels of air pollution and the incidence of ANCA associated vasculitis.

Methods: We included previously identified complete incidence cohorts of people with ANCA-associated vasculitis from Nottingham/Derby[1], and Norfolk[2], and compared the air pollution indices for the “lower layer super output area” where each case lived with those in the whole geographical area where those studies took place. Air pollution indices of particulates (PM10), nitrogen dioxide, sulphur dioxide and a combined air quality index were obtained from the Office for National Statistics (ONS) outdoors living environment indicators. Pollution data for all of England was initially categorised into deciles. For each pollution index, we compared the the decile for each case to the distribution of the deciles in the whole geographical area of each study using logistic regression. We analysed the Nottingham/Derby and Norfolk datasets separately.

Results: There were 107 cases of AAV included from Nottingham/Derby, and 86 cases included from Norfolk. In Nottingham/Derby cases lived in areas with lower levels of air pollution compared to the whole Nottingham/Derby study area: the odds ratios (OR) were less than 1 for all indices of air pollution (see table below), and this was statistically significant in the majority of indices (combined air pollution p=0.009, particulates (PM10) p=0.06, nitrogen dioxide p=0.009 and sulphur dioxide p=0.004). In Norfolk cases lived in areas with similar levels of air pollution compared to the whole Norfolk study area. The ORs were around 1 for all indices of air pollution (see table below), and none of these were statistically significant.

Conclusions: Overall the results showed no evidence of an association between increased levels of pollution and increased incidence of ANCA associated vasculitis.

Table: Odds ratios for 1 decile increase in pollution indices in cases compared to the whole study areas

<table>
<thead>
<tr>
<th>Pollution Index</th>
<th>Odds Ratio</th>
<th>P Value</th>
<th>95% CI</th>
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<tbody>
<tr>
<td>Notts/Derby</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Particulates (PM10)</td>
<td>0.850</td>
<td>0.055</td>
<td>0.720-1.003</td>
</tr>
<tr>
<td>Sulphur Dioxide</td>
<td>0.836</td>
<td>0.004</td>
<td>0.740-0.945</td>
</tr>
<tr>
<td>Nitrogen Dioxide</td>
<td>0.848</td>
<td>0.009</td>
<td>0.750-0.959</td>
</tr>
<tr>
<td>Norwich</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Particulates (PM10)</td>
<td>0.991</td>
<td>0.940</td>
<td>0.783-1.253</td>
</tr>
<tr>
<td>Sulphur Dioxide</td>
<td>1.01</td>
<td>0.868</td>
<td>0.856-1.200</td>
</tr>
<tr>
<td>Nitrogen Dioxide</td>
<td>1.0241</td>
<td>0.739</td>
<td>0.890-1.178</td>
</tr>
</tbody>
</table>


AUDIT OF THE CLINICAL EFFICACY AND SAFETY OF ETANERCEPT BIOSIMILAR (BENEPALI) TO ITS REFERENCE PRODUCT (ENBREL) IN PATIENTS WITH INFLAMMATORY ARTHRITIS: EXPERIENCE FROM A DISTRICT GENERAL HOSPITAL IN THE UNITED KINGDOM

Dr. Jianfei Ma¹, Mrs Sharon Petford¹, Mrs Lisa Jones¹, Dr. Karen Douglas¹, Dr. Holly John¹
¹Department of Rheumatology, Dudley Group of Hospitals NHS Foundation Trust, Dudley, United Kingdom

Introduction
Etanercept has been widely used in clinical practice for many years. Biologics are associated with a considerable economic burden on the health care system. The expiry of patent protection has led to the development of biosimilar drugs, which may lead to treatment cost reduction. Benepali contains the active substance etanercept and is the first biosimilar of etanercept approved by the European Medicine Agency. Benepali was launched in the UK 02/2016 for use in all adult indications for which reference etanercept (Enbrel) is approved, namely rheumatoid arthritis (RA), axial spondyloarthritis (AS), psoriatic arthritis (PsA) and plaque psoriasis. At the Dudley Group of Hospitals the large cohort of Enbrel patients were switched to Benepali in September 2016, having negotiated with the local Clinical Commissioning Group to share the cost savings. This audit aimed to compare the clinical efficacy and safety profile of Benepali (post switch) with Enbrel (pre switch).

Methods
Inclusion criteria: All patients who have been established on Enbrel for at least 12 months (ie. no new starters). Exclusion criteria: patients who have been on Enbrel for less than 12 months, those who are trying to conceive, are pregnant or are breast feeding women, JIA patients and patients on 25mg of Enbrel. The first 50 patients switched were sampled and these patients were followed up for 6 months. The date of prescription sent out is the date of switch. A proforma collected demographic information, disease activity scores 6 months pre and 6 months post switch, and recorded any adverse events post switch.

Results
Of the 194 patients on Enbrel in the Dudley area, 160 (83%) were successfully switched at the time of audit. Of the first 50 patients who switched, 32 (64%) patients had RA, 13 (30%) patients had AS, and 3 (6%) patients had PsA. The mean age of this patient cohort was 60 years (range 29-83 years) with equal gender distribution. Mean years on Enbrel were 6 years (range 1-13 years). In the RA cohort, the mean DAS28 score change post switch was +0.1. In the AS cohort, with mean BASDAI score change post switch was -0.6. The PsA cohort was small (n=3). Two patients’ symptoms were unchanged, whilst 1 patients’ tender and swollen joint count decreased. At 6 months post switch, 84% patients continued Benepali; reasons for discontinuing included side effects (n= 4), inefficacy (n=3) and developing cancer (n=1).

Conclusions
Following switching to Benepali, no clinically significant change in disease activity scores has been observed and no significant adverse events were recorded during the audit period. Switching from Enbrel to Benepali has resulted in a potential yearly saving of £660,000, from which the rheumatology department has secured funding to employ an additional clinical nurse specialist and secretary. Our audit found Benepali to be as safe and effective as Enbrel and has demonstrated a positive experience with biosimilar switching. This is relevant given the expiry of other biologic drugs’ patent protections and further biosimilar drugs becoming available.
Posters
Efficacy and Safety of Baricitinib Versus Placebo and Adalimumab in Patients with Moderately-to-Severely Active Rheumatoid Arthritis and Inadequate Response to Methotrexate (MTX-IR): Summary Results from the 52-Week Phase 3 RA-Beam Study

Peter C Taylor1, Marek Krogulec2, Anna Dudek3, Jean Djudler4, Edit Drescher5, Regina Cseuz6, Rasa Kausiene7, Daina Andersone8, Dalia Unikiene9, Juan Sanchez Burston10, Ricardo Blanco Alonso11, Zdeněk Dvořák12, Andrei Ghizdasvuc13, Illdiko Jtö14, Esbjörn Larsson15, Natalia Bello16, Jane Barry17, Frederick Durand18, Thorsten Holzkämper19, Susan Otawa20, Stephanie de Bono17, Edward C Keystone21, Andrea Rubbert-Roth22, Bernard Combe23, Inmaculada De La Torre16

1Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences, Kennedy Institute of Rheumatology, University of Oxford, Oxford, UK; 2Rheumatology Clinic, MAK-MED, Nadarzyn, Poland; 3Centrum Medyczne AMED, Warsaw, Poland; 4Hôpital Cantonal, Fribourg, Switzerland; 5Csołnok Ferenc Hospital, Veszprém, Hungary; 6Revita Clinic, Budapest, Hungary; 7VSI Respuluiäne Siauliu Ligonine, Siauliai, Lithuania; 8Pauls Stradins Clinical University Hospital, Riga, Latvia; 9Dr. Kildos Klinika, Kaunas, Lithuania; 10Division of Rheumatology, Hospital Universitario Marqués de Valdecilla, IDIVAL, Santander, Cantabria, Spain; 11Arthromed, s.r.o., Pardubice, Czech Republic; 12Eli Lilly Romania S.R.L., Bucharest, Romania; 13Eli Lilly Hungária, Budapest, Hungary; 14Eli Lilly Sweden AB, Solna, Sweden; 15Eli Lilly and Company Ltd, Basingstoke, UK; 16Eli Lilly France, Neuilly-sur-Seine, France; 17Eli Lilly Deutschland GmbH, Bad Homburg, Germany; 18Eli Lilly Canada, Toronto, Canada; 19The Rebecca MacDonald Centre, Mount Sinai Hospital, University of Toronto, Toronto, Ontario, Canada; 20Klinik I für Innere Medizin, Uniklinik Köln, Deutschland; 21CHRU Montpellier, Montpellier, France.

Background: Baricitinib, an oral JAK1/JAK2 inhibitor, has shown promising results in patients with active rheumatoid arthritis (RA). We present efficacy and safety results from the phase 3 RA-Beam study in patients with active RA and inadequate response (IR) to methotrexate (MTX).

Methods: Patients with moderate-to-severely active RA and MTX-IR were randomised 3:3:2 to placebo, baricitinib 4mg QD or adalimumab 40mg biweekly. All patients continued stable background MTX therapy. Non-responders were rescued from week 16. At week 24, patients receiving placebo switched to baricitinib 4mg QD. The study compared baricitinib, placebo and adalimumab using multiple endpoints, including non-inferiority and superiority testing; primary endpoint was baricitinib versus placebo ACR20 response at week 12.

Results: Of 1305 randomised patients, 83%, 88% and 87% completed week 52 in the placebo, baricitinib and adalimumab group, respectively; rescue rates were 27%, 9% and 15%. ACR20 response at week 12 was higher for baricitinib versus placebo (p<.001). At weeks 12 and 24, significant improvements were seen for baricitinib versus placebo in ACR20/50/70 and DAS28, CDAI and SDAI low disease activity and remission rates, many by week one. Baricitinib was statistically superior to adalimumab in ACR20 responses and in DAS28-CRP at week 12; statistically higher ACR20 responses for baricitinib vs adalimumab were also seen at weeks 24 and 52. Change in mTSS at weeks 24 and 52 was significantly lower for baricitinib versus placebo. At week 24, more baricitinib patients had improved physical function, and reduced fatigue and pain versus placebo and adalimumab. During weeks 0–24, more treatment-emergent AEs occurred with baricitinib and adalimumab versus placebo (71%, 67%, 60%); serious AE rates were 5%, 2% and 4%, respectively. By week 52, treatment-emergent AE rates for baricitinib versus adalimumab were 79% versus 77% and serious AE rates were 8% versus 4%; serious infection rates were similar across groups; three major cardiovascular events (2 baricitinib, 1 adalimumab), three
In patients with moderate-to-severe RA and MTX-IR receiving background MTX, addition of baricitinib was associated with significant clinical improvements versus placebo and adalimumab, with an acceptable safety profile.
BARICITINIB, METHOTREXATE, OR BARICITINIB PLUS METHOTREXATE IN PATIENTS WITH MODERATELY-TO-SEVERELY ACTIVE RHEUMATOID ARTHRITIS WHO HAD RECEIVED LIMITED OR NO TREATMENT WITH DMARDs: EFFICACY AND SAFETY RESULTS FROM THE 52-WEEK PHASE 3 RA-BEGIN STUDY

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Background: Baricitinib, an oral JAK1/JAK2 inhibitor, improves disease activity with an acceptable safety profile in patients with active rheumatoid arthritis (RA). We report efficacy and safety data for baricitinib as monotherapy or in combination with methotrexate (MTX), compared with MTX, in patients with moderately-to-severely active RA and limited or no prior treatment with DMARDs.

Methods: Patients (N=584) with moderately-to-severely active RA who were DMARD-naïve (other than ≤3 doses of MTX) were randomised 4:3:4 to MTX (titrated to 20mg/week), baricitinib 4mg QD or baricitinib 4mg QD plus MTX for 52 weeks. Primary endpoint was non-inferiority of baricitinib monotherapy to MTX for ACR20 at week 24.

Results: ACR20 response at week 24 was higher with baricitinib 4mg monotherapy versus MTX (77% vs 62%, p≤.01). Baricitinib plus MTX did not have increased benefit versus baricitinib monotherapy but was significantly superior to MTX for most outcomes, often from week one. Similar improvements were seen for ACR50/70 and DAS28. Clinical remission (DAS28<2.6, SDAI≤3.3, CDAI≤2.8) occurred in significantly higher proportions of patients receiving baricitinib monotherapy or baricitinib plus MTX versus MTX. The proportion of patients with no radiographic disease progression (ΔmTSS≤0.5) was 88% (p≤.01 vs MTX) for baricitinib plus MTX, 84% with baricitinib monotherapy (not significant vs MTX) and 78% with MTX. Compared with MTX, significant improvements were seen with baricitinib monotherapy and baricitinib plus MTX in physical function and pain, and in all components of the WPAI-RA at week 24; fatigue was significantly improved with baricitinib monotherapy. Efficacy was sustained at week 52. Rates of treatment-emergent AEs, including infections, and serious AEs were similar across groups. Laboratory changes (including liver abnormalities, lymphopenia), non-serious infections and AEs leading to interruption were generally less frequent with baricitinib monotherapy versus MTX or baricitinib plus MTX.
Conclusion: In DMARD-naïve patients with moderately-to-severely active RA, baricitinib monotherapy and baricitinib plus MTX produced significant, early and sustained improvements in disease activity and patient-reported outcomes, and higher rates of remission compared with MTX. Compared with MTX, radiographic progression was reduced with baricitinib; the difference was statistically significant with baricitinib plus MTX. No new safety/tolerability issues were identified with baricitinib.
AUDIT OF EARLY INFLAMMATORY ARTHRITIS CLINIC AND IMPACT ON CARE OF ADULT PATIENTS WITH RHEUMATOID ARTHRITIS AGAINST NICE QUALITY STANDARDS (QS33)

Emily Palmer, Dr Caroline Cardy

Background: Data from the National Clinical Audit for Rheumatoid and Early Inflammatory Arthritis (2014/15) identified Worcestershire Acute Hospitals NHS Trust as an outlier with respect to waiting times. An Early Inflammatory Arthritis (EIA) clinic was established in 2016 with the aim of reducing wait times and improving access to steroid and DMARD therapy.

Aims: To audit the new EIA clinic and assess its impact on the quality of care and wait times for adult patients with Rheumatoid Arthritis (RA) against NICE Quality Standard 33. To compare this data with that from the National Clinical Audit for Rheumatoid and Early Inflammatory Arthritis.

Methods: All patients scheduled to attend the newly-established EIA clinic at Worcestershire Royal Hospital over a 6-month period from 16/06/2016 to 08/12/2016 were identified. Data regarding referral dates, triage and outcomes were collected from electronic patient records.

Results: One hundred and seventy patients were identified. The median wait time for patients with suspected synovitis to be seen in the EIA clinic was 28 days (IQR=21). This compared to 56 days (IQR=35) before the establishment of the EIA clinic (Trust level data, National Clinical Audit for Rheumatoid and Early Inflammatory Arthritis 1st Annual Report). Twenty nice per cent of patients (n=48) were seen within three weeks of referral following introduction of the EIA clinic, compared to 14% (n=22) before the EIA clinic (NICE Quality Standard 2). The proportion of patients commencing steroids within 6 weeks of being referred increased from 85% (n=67) to 94% (n=16), and the percentage of patients commencing DMARDs within 6 weeks of referral increased from 34% (n=27) to 55% (n=16) (NICE Quality Standard 3).

Conclusion: There has been a clear improvement in the care of adult patients with RA at Worcestershire Acute Hospitals NHS Trust following the introduction of an EIA clinic. Wait times for initial assessment have halved and over 50% of patients now receive DMARDs within the recommended 6 weeks of referral. There are still improvements to be made in order for patients with suspected persistent synovitis to be seen within the 3-week standard. This could most easily be achieved by refining the referral process to utilise an electronic referral system.
LONG-TERM HYDROXYCHLOROQUINE USE: ARE LUPUS PATIENTS UNDERMONITORED?: A UNIVERSITY TEACHING HOSPITAL EXPERIENCE

Mrs M McCartney, Dr S Shaffu, Dr K Sunmboye

Hydroxychloroquine is an integral part of maintenance therapy in lupus patients. Recent UK guidelines recommend that patients on hydroxychloroquine need to have regular monitoring. The risk of retinal toxicity becomes significant after a cumulative dose of 1 gram or after 7 years of drug use. Monitoring with use of spectral domain optical coherence tomography (OCT) is required after 5 years of use from recent guidelines.

The University hospitals of Leicester which serves 1 million population has a diverse group of caucasian and black with minority ethnic (BME) groups. There are 293 patients with lupus on the rheumatology database of the tertiary hospital. 194 (66%) of them are on hydroxychloroquine. We performed an audit of patients that have regular eye monitoring whilst on hydroxychloroquine. Letters were sent out to the patients with lupus on hydroxychloroquine. 106 responses were obtained with a response rate of 55%. 96 (91%) were female and the remainder were male. The average age of the respondents was 49 years. The average duration of hydroxychloroquine use was 79 months. 53% of the respondents had been on Hydroxychloroquine for more than 5 years. 42% of all respondents were made of patients in the BME group. Of the 106 responders, only 86% (91) were aware that eye checks were required. Majority of the patients (60%) who were not aware of the need for regular eye monitoring were in the BME group. 71% of patients who had not had regular eye monitoring had other co-morbidities other than lupus. 1 in 5 of patients who did not have regular eye monitoring had other DMARDs alongside hydroxychloroquine. 20% of this patient cohort were not compliant with regular eye monitoring after use of hydroxychloroquine after 5 years or more.

Ethnicity, disease factors, use of other DMARDs and duration of hydroxychloroquine use may play a role in determining patient compliance with regular eye monitoring. We recommended that more should be done to continually educate patients about the need to have yearly eye checks.

References
GRANULOMATOSIS WITH POLYANGIITIS INITIALLY PRESENTING WITH PERICARDIAL EFFUSION AND IMPELLING CARDIAC TAMPONADE – A CASE REPORT

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Hereford County Hospital, Herefordshire. 2017

Introduction: Granulomatosis with Polyangiitis (GPA) causes inflammation of small and medium sized blood vessels. GPA may cause cardiac complications. We present a case diagnosed following an emergency admission with collapse secondary to a pericardial effusion.

Case presentation: A 62 year old Caucasian man was admitted as an emergency after collapse at home, during which he was peri-arrest. He had 2 month history of dyspnoea and pleuritic chest pain, associated with significant weight loss, myalgia, and fevers. Over the previous 6 months he had noticed nasal congestion, crusting and bleeding, tinnitus and hearing loss in his left ear. His past medical history included prostate cancer and a lumbar spine fusion.

Blood tests revealed a WCC 15.2 x10^9/L (4-11 x10^9/L), neutrophils 13.1 x10^9/L (2-7.5 x10^9/L), CRP 202 mg/L (0-5mg/L), troponin 17.6 ng/l (0-17ng/L) negative anti-nuclear antibodies, positive c-ANCA (titre >1:640), anti-PR3 >100 u/mL (0-5u/mL) and Rheumatoid Factor 41 IU/ml (0-13 IU/ml). Urine ACR 20mg/mmol (0-2.5 mg/mmol), PCR 42mg/mol.

Computed tomography (CT) thorax showed bi-basal pulmonary consolidation associated with pleural effusions and pericardial effusion. An echocardiogram revealed a large pericardial effusion of 4.5cm with evidence of impending tamponade.

By pericardiocentesis, 550ml of fluid was drained. Analysis of the pericardial fluid revealed inflammatory cells, no organisms, and no malignant cells. His angiogram showed normal coronary vessels. Naso-endoscopy noted healing granuloma in the right nostril, and active granuloma in the left nostril. Histology showed ulceration only, but the patient had been on steroids for a week prior to biopsy. He was diagnosed with Granulomatosis with Polyangiitis (GPA). Prednisolone was increased from 30 to 60mg once daily, and he was given intravenous cyclophosphamide as per the CYCLOPS regime. His symptoms improved with regression of CRP to <1.

Discussion: GPA commonly affects the upper and lower respiratory tract, and the kidneys. However, it may affect any organ in the body. In systemic inflammatory diseases, it is not uncommon for the cardiac system to be involved. Involvement of the cardiac system may include the pericardium, myocardium, endocardium and great vessels. Acute pericarditis with mild pericardial effusion is common, and hemodynamically significant pericardial effusion has been reported in a few cases. Early recognition and treatment is extremely important. Heart involvement carries a poor prognosis and causes 50% of the deaths of these patients. It is often insidious and underestimated as a significant proportion of patients with cardiac involvement is asymptomatic. Treatment with pericardiocentesis, prednisone and immunsuppressive therapy particularly cyclophosphamide is beneficial and results in an improvement of the pericardial symptoms and subsequent therapy may prevent progression of cardiac disease.

Conclusion: This case presents a patient with classic features of GPA in the preceding months before admission. This combined with the positive immunology (positive cANCA and raised PR3), granulomas visualised on nasal endoscopy and pericardial effusion indicates the diagnosis of GPA. Cardiac tamponade is a very rare but life threatening presentation of this systemic vasculitis.
References
7. European Vasculitis Study Group (EUVAS) AVERT project (BIOMED-2: BMH4 - CT97-2328); CLINICAL TRIAL PROTOCOL - CYCLOPS Randomised trial of daily oral versus pulse Cyclophosphamide as therapy for ANCA-associated Systemic Vasculitis; https://www.vasculitis.nl/media/documents/cyclops.pdf.
SUCCESSFUL DIAGNOSIS AND MANAGEMENT OF PROGRESSIVE DYSPHAGIA IN A PATIENT WITH LONGSTANDING ANKYLOSING SPONDYLITIS: A CASE STUDY

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Mr K Saeed (Consultant spinal surgeon)
Dr Nick Barkham (Consultant Rheumatologist, Supervising Author)

The Royal Wolverhampton NHS Trust

A 59 year old gentleman with longstanding Ankylosing Spondylitis developed progressive dysphagia over 2 years to solids. He also complained of a gagging sensation, on extension of the neck when looking up. He had developed numbness and paraesthesia in the upper limb, more pronounced on the left side. Past medical history revealed difficulties in intubation.

This presenting symptom was on a background of HLA-B27 positive Ankylosing spondylitis, diagnosed 11 years previously. He had positive features of inflammatory back symptoms for 30 years however. Past medical history also included; Crohn’s disease, Osteoporosis and Iritis. Treated with Etodolac for Ankylosing Spondylitis and Azathioprine for Crohn’s disease.

On examination spinal mobility was restricted with a Bath Ankylosing Spondylitis Metrology Index of 5/10. Chest expansion was 4cm, tragus to wall distance of 18.5cm, lumbar side flexion of 11cm, Schober test lumbar flexion of 2.5cm and hip abduction of 108cm. Cervical spine rotation was restricted to 50 degrees bilaterally.

Inflammatory markers and bone profile were normal. Initial investigations included anterior Rhinoscopy which showed both nostrils to be patent and clear. Flexible nasoendoscopy showed normal post nasal space though the hydropharynx had a large posterior indentation. Barium swallow showed flow of contrast laterally to extrinsic compression of the oesophagus. Barium swallow was not suggestive of a cricopharyngeal spasm or muscular incoordination. CT scan confirmed C3/4 severe syndesmophyte formation. MRI showed extensive spinal disease with syndesmophytosis.

Referral made to ENT surgeons who monitored the patient over 2 years; initially managing with conservative measures. As symptoms progressed surgical options were discussed with the spinal team, namely to remove the offending syndesmophyte with cage and plating to protect the spinal cord. Patient underwent successful surgery; C3/4 Anterior Cervical Discectomy, Brantigan Cage fusion and skyline anterior plating and removal of anterior syndesmophytes in August 2017, with a positive recovery from his Dysphagia symptoms.

This case highlights the importance of considering both intra-luminal and extra-luminal causes of dysphagia with appropriate investigations. This case to our knowledge is the first reported case of successful surgical treatment of syndesmophyte in Ankylosing Spondylitis causing dysphagia, in the world literature.
Barium

CT scan showing syndesmophyte formation

X ray post procedure showing removed syndesmophyte and caging
Abstract:

The Worcester Acute Hospitals NHS Trust Rheumatology department runs outpatient clinics across Worcestershire for patients with all types of rheumatic diseases between 9-5pm Monday to Friday with the addition of a helpline available Monday-Friday 8.30am – 3.30pm. There is a drive now to enhance all Rheumatology services to a 7-day working week with care closer to home.

The aim of this project is to see whether patients would prefer a 7-day service, to observe if the department should run services at other locations and what their priorities regarding appointments are to inform future service design and development. Questionnaires were handed out for 2 months during all rheumatology outpatient clinics in the trust asking questions about their ideal appointment.

210 patients were included in the study where 62% were female with a mean age between 56-75 years. Most patients would prefer a Thursday appointment and 27.1% would agree to a weekend appointment. Most patients preferred a 9am-1pm appointment with 14.1% wishing for 7-9am and 12.2% for 5-8pm appointment. Most patients would prefer to be seen every 6 months with 67.6% of patients getting their appointment in the location they preferred.

The need for a 7-day service was not demonstrated as there was a very low patient wish for weekend appointments. This study suggests that there is a well matched service at present as 2/3 of patients were seen at their first choice location. Patients’ desire for Primary care physician led Rheumatology services was not demonstrated. Additional services at POWCH would be of value to patients and this study provides data to commence an evaluation of the impact of opening services there.
Background - Giant cell arteritis (GCA) is one of the commonest vasculitides. Incidence in the UK is 2.2/10,000 patient-years, mainly affecting those >50 years. As one of the commonest causes of acute blindness, giant cell arteritis must be treated as a medical emergency. We have a local referral pathway and we evaluated our service for 2016.

Methods – We analysed our referrals over 1 year depending on the source of referral, days taken to be seen in our service and then for TAB, length of biopsy. BSR adherence for aspirin, bone protection were not looked at.

Results- There were 69 referrals. Seasonal variation was noted between January to September when there were 42 referrals, while between October to December there were 27 referrals. Time from referral to specialist Rheumatology opinion was 1.22 days for working week days. Time from Rheumatology review to temporal artery biopsy by vascular surgeons was 3.59 days. We had 31 temporal artery biopsies. Vascular Surgeons did 14 and ophthalmologist did 17 biopsies. We did not notice correlation between length of biopsy specimen and biopsy positivity.

Conclusion- It is crucial to have a GCA pathway that works locally. Regional pathway for Northamptonshire is underway. It would be useful to discuss experience from other centres to improve the management of this challenging condition to prevent blindness and unnecessary steroid treatment.
HYPERMOBILITY JOINT SYNDROMES AND AXIAL SPONDYLOARTHROPATHY. A REAL CHALLENGE – REVIEW FROM LEICESTER SPONDYLOARTHROPATHY CLINIC

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Background: Hypermobility joint syndromes and Spondyloarthropathy (SpA) display opposing signs. However, they often present with a common symptom of lower back pain (LBP). Whilst hypermobility joint syndromes are characterised by increased joint mobility in the peripheral and axial skeleton, SpA manifest with stiffness and loss of mobility. Their simultaneous occurrence therefore, may lead to a conflicting collection of clinical symptoms and signs, leading to diagnostic delay and uncertainty.

Aim: We aimed to identify and review cases of concomitant SpA and hypermobility joint syndromes in the Leicester SpA services, in order to better assess and manage this group of important patients.

Methods: We performed a case note review of all patients presenting to Leicester Spondyloarthropathy clinic for patients presenting with concomitant hypermobility. Their imaging was re-reviewed by a specialist musculoskeletal radiologist. Three cases were identified and are summarised in Table 1.

<table>
<thead>
<tr>
<th>Case</th>
<th>Age</th>
<th>M/F</th>
<th>PC</th>
<th>HLAB27</th>
<th>Extra-articular features</th>
<th>FH</th>
<th>JHS</th>
<th>Radiology</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>32</td>
<td>F</td>
<td>10 year history LBP</td>
<td>Positive</td>
<td>Nil</td>
<td>Nil</td>
<td>7/9, back pain &gt;3 months</td>
<td>MRI: bilateral sacroiliitis</td>
</tr>
<tr>
<td>2</td>
<td>20</td>
<td>F</td>
<td>Bilateral hip and lower back pain</td>
<td>Positive</td>
<td>Nil</td>
<td>Father: iritis</td>
<td>6/9</td>
<td>MRI: bilateral sacroiliitis</td>
</tr>
<tr>
<td>3</td>
<td>43</td>
<td>F</td>
<td>LBP</td>
<td>Negative</td>
<td>Plantar fasciitis, lateral epicondylitis</td>
<td>Mother: iritis</td>
<td>MRI: Left sacroiliitis</td>
<td></td>
</tr>
</tbody>
</table>

Table 1. Summary of cases of patients with features of BJHS and spondyloarthropathy

Conclusions: The coexistence of BJHS and AS is rare, but important to recognise. A major concern if these conditions coexist is that spondyloarthropathy is missed, as the typical reduced spinal range of movement may be lacking in patients with hypermobility joint syndromes and preserved flexibility. In addition, patients with BJHS can present with chronic back pain secondary to spondylolisthesis, spondyloolithiasis or paraspinal ligamentous laxity. It is important for health professionals to consider spondyloarthropathy in any patient with BJHS presenting with inflammatory back pain despite preserved spinal movements.
AUDIT OF REMISSION RATES WITH LONG TERM TOCILIZUMAB USE IN PATIENTS WITH RHEUMATOID ARTHRITIS

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Background: Tocilizumab is a first-in-class biologic drug for RA with a different mechanism of action (MAO) targeting IL-6 receptors. Clinical trial data suggests that similar rates of remission are seen in patients treated with or without methotrexate and in patients treated with either the IV or the SC route. There is however a paucity of real world data to examine the effect that these factors plus switching from IV to SC route might have on remission rates.

Methods: We performed a retrospective analysis of all RA patients continuing Tocilizumab from August 2011 to August 2017 at the Rheumatology Unit (New Cross and Cannock Chase hospital). Patient’s demographic characteristics, duration of Tocilizumab use, route of administration, RA duration, concurrent use of DMARDS, serology status, DAS 28 score at the onset and recent available DAS28 score, remission status (defined as DAS 28 less than 2.6) were noted.

Results: Data was available on 112 patients of whom 94 were female (84%) 18 male (16%) with mean age 60 (range 25-83) years, mean RA duration 11.8(range 2-37) years, mean duration of Tocilizumab use 33.4(range 1-74) months.

34 (30.3%) patients were seronegative and 78 (69.6%) were seropositive with at least one or both antibodies (Rheumatoid factor and Anti CCP) positive. Out of 112, 65 received iv (58%), 14 received sc (12.5%) and 33 (29.4%) started with iv but switched to sc. Mean DAS before start of Tocilizumab was 6.5 (range 4.5-8.7) and the recent available mean DAS 2.79 (range 0.5-8.1). Remission was achieved in 73 patients (65.1%) while 36 failed to achieve it (32.1%). The status was not known in 3 patients.

Methotrexate was used in 54 patients (48.2%) concurrently and the mean dose used was 13.5 (range 5-25) mg per week. In 49 patients (43.7%) no concurrent DMARD was used. Remission was achieved in 37 patients (69.9%) with concurrent Methotrexate use while 30 (62.5%) patients noted to have remission when none of concurrent DMARD was used.

In patients with iv use, 36 (66.6%) were noted to attain remission and 16 failed to achieve it. In patients with sc use, 10 patients were noted to attain remission while 3 failed to achieve it. In patients who were switched from IV to sc route, 24 patients (72.7%) were noted to attain remission while 8 failed to achieve it.

Conclusion: Good number of patients who continued Tocilizumab noted to attain remission. Route of administration of Tocilizumab have little impact on achieving remission. Concomitant use of methotrexate in patients with RA who continued Tocilizumab doesn’t seem to give additional benefit in terms of remission achieved.
Introduction: Macrophage Activation Syndrome (MAS) is a severe life threatening complication of several chronic rheumatic diseases such as juvenile idiopathic arthritis (JIA), adult onset Still's disease, and systemic lupus erythematosus (SLE). The incidence of MAS is unknown due to the wide spectrum of clinical presentations and many cases may remain undiagnosed. It’s commoner in JIA where 23-40% of cases are undiagnosed.

Case Description: 34 year old lady with a long history of SLE who has been stable on Hydroxychloroquine (HCQ) and Azathioprine (AZA). Admitted with a 10 days history of fatigue, sore throat, and fever. She was initially managed as upper respiratory tract infection with oral antibiotics by GP before admission to hospital. Examination was unremarkable apart from temperature spikes. Her bloods showed raised inflammatory markers with a CRP= 76, deranged LFTs with albumin=26 Bilirubin=185 ALP=321 ALT=480 INR=1.1 Triglyceride=2.7 mmol/l (high), raised ferritin= 13123, raised LDH=1464, low white cell count (wcc)= 3.6 and platelets=112 Clauss Fibrinogen=1.42 (low). Autoimmune vasculitic and virology screening were all negative as well as blood cultures. Patient was reviewed by rheumatology and haematology teams and she fulfilled ACR/Eular Classification Criteria for MAS. Her bone marrow results showed haemophagocytic picture and significant upregulation of NK cells and CD2/CD86 positive lymphocytes which were also consistent with MAS. Patient responded well to high dose oral prednisolone and her bloods including liver functions were normalising. She was also considered for Cyclosporine should she need a maintenance therapy.

Discussion: This is an uncommon case of MAS in association with SLE. Due to the wide spectrum of clinical presentation the diagnosis could be quite challenging. Early involvement of specialist teams such as haematologists and rheumatologists is mandatory for effective and timely diagnosis and management. Haemophagocytosis in bone marrow is the hallmark of diagnosis. The mainstay of treatment is early high dose steroids after excluding infections. Steroids sparing DMARDs such as Cyclosporine may be considered for refractory cases. Delays in early treatment may carry high mortality rate of up to 40%.

Learning Points:
1. Macrophage Activation Syndrome may be associated with some rheumatic conditions.
2. Diagnosis may be challenging and the hallmark of diagnosis is haemophagocytosis in bone marrow.
3. If untreated MAS carries a high mortality rate and the mainstay of treatment is high dose steroids.
FLARE OF AXIAL SPONDYLOARTHROPATHY AFTER VEDOLIZUMAB - CAUSE OR EFFECT?

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Case Report
A 21 year old Afro-Caribbean male with a complex 11 year history of Crohn’s Disease (CD) presented with low back pain. In the preceding years he developed perianal disease, extra-intestinal manifestations (episcleritis) and enteropathic arthritis due to poor compliance to treatment and disease severity resulting in multiple hospital admissions for IV corticosteroids. Despite failing several treatments including thiopurines, Methotrexate, Infliximab and Adalimumab he eventually commenced Vedolizumab with excellent clinical response. Four months later he presented with low back pain, reduced mobility and early morning stiffness lasting three hours. There were no luminal symptoms. He had raised inflammatory markers (CRP 156). Infection was considered and a MRI spine/pelvis showed left sacroiliitis, bilateral hip effusions and chronic arthropathy consistent with axial spondyloarthropathy. Pulsed IV Methylprednisolone followed by oral Prednisolone was administered with a dramatic improvement in symptoms and inflammatory markers (CRP15). He was discharged with outpatient follow up to consider additional immunosuppressive therapy.

Discussion
Spondyloarthritides (SpA) in inflammatory bowel disease (IBD) is a known extra-intestinal manifestation. Axial involvement is the most common type of SpA seen among patients with IBD, ankylosing spondylitis and sacroiliitis being the prevalent ones. The prevalence of sacroiliitis in IBD is not clear but recent studies based on radiological findings report about 17% of MRI scans showing features of sacroiliitis among patients with IBD1. Vedolizumab is a gut selective humanised monoclonal antibody targeting α4β7 integrin. Clinical studies have demonstrated positive benefit-risk profile of Vedolizumab in adults with moderate-severe IBD2,3. It was thought that Vedolizumab might be useful in spondyloarthritides (SpA) as α4β7 expression has been found within inflamed joints, but the effects appear to be quite gut specific4,5.

Vedolizumab’s mechanism of action differs from TNF alpha inhibitors enabling it to be used in cases of anti-TNF alpha failure or non-response, or even as a first-line biologic2. There are case reports of exacerbations of arthritis and sacroiliitis in patients receiving Vedolizumab for IBD5. It is unclear whether this is induced by the drug or if there is unmasking of arthritis/sacroiliitis due to the gut specific nature of Vedolizumab. Two groups reporting case series have questioned this as a possibility4,5. We suggest that it more likely to be an unmasking of SpA after withdrawal of anti-TNF alpha therapy rather than a SpA induced by Vedolizumab. This was noted in the pivotal Gemini study where arthralgia was one of the most common adverse events affecting patients who received Vedolizumab. However, there was no significant difference of the incidences of arthralgia in comparison to the placebo group (9.0–9.1% in Gemini II, 13.5–13.1% in Gemini II)2,4. This could suggest that Vedolizumab itself is unlikely to cause arthralgia but rather seems to have no benefits on IBD-associated arthralgia with exacerbation of joint symptoms.

This was noted in a similar situation with chronic asthma patients when Montelukast was introduced. Cases of Churg-Strauss Syndrome seemed to increase several months after introduction of leukotriene receptor antagonists. This led to the reasonable assumption that there was a causal link. Upon further inspection the cases usually involved the withdrawal of long-term
corticosteroids for asthma, thereby unmasking the underlying eosinophilic disorder, and previous studies had underestimated the true incidence of Churg-Strauss Syndrome6.

**Conclusion**
Our case report highlights the transformation Vedolizumab made to a patient with Crohn’s disease, previously resistant to anti-TNF alpha, but leading to what we suggest to be an un-masking of sacroiliitis.

**References:**
4. Varkas G et al. An induction or flare of arthritis and/or sacroiliitis by vedolizumab in inflammatory bowel disease: a case series.
THE USE OF MUSCULOSKELETAL ULTRASOUND IN NEW OUTPATIENT MANAGEMENT: EXPERIENCE FROM A SINGLE CENTRE

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Objectives:
To analyse the use and value of musculoskeletal ultrasound (MSKUS) in the Rheumatology New Patient clinic at Russells Hall Hospital (RHH).

Introduction:
The use of MSKUS in rheumatology has rapidly evolved over the past decade, becoming a valuable tool in the diagnosis and follow up of musculoskeletal diseases. Increasingly more people are being referred for MSKUS in rheumatology, and scans previously carried out and interpreted solely by radiologists, are now conducted by rheumatologists themselves. In 2005, 93% of rheumatologists stated they used ultrasound imaging with up to 33% performing it themselves. At RHH, 2 rheumatology consultants are trained in the use of ultrasound imaging for rheumatological conditions. This study aims to see how ultrasound is being used for new patients at RHH and assess its impact.

Method:
This retrospective study looked into the rates and reasons for MSKUS referrals of all new outpatients seen in the rheumatology department of Russells Hall Hospital in January 2017. The pre- and post- scan diagnoses and the eventual outcomes were also recorded. We also captured other related parameters including the waiting time and the joint areas scanned. The data was collected from clinic letters and ultrasound scan reports.

Results:
Of the 142 new rheumatology outpatients reviewed in January 2017, 17 (11.9%) were referred for MSKUS and 15 ultrasound scan reports were available at the time this study was conducted. Hands and wrists were the most frequently scanned joint areas (12/15), while the rest involved peripheral joints of the feet.

The most common reason for new patient MSKUS referral was to investigate for the presence of subclinical synovitis (12/15); 3/15 were to clarify a differential diagnosis. The most common pre-scan diagnosis was non-specific arthralgia or inflammatory arthritis (n=6), followed by osteoarthritis (n=5). The most common post-scan diagnoses were both normal (n=6) and osteoarthritis (n=6). Nine of the initial impressions were altered post-scan with the use of MSKUS, five of which were deemed “normal”. 7/15 patients were discharged either immediately after the MSKUS or on their next clinic appointment. One patient was diagnosed on the ultrasound as having rheumatoid arthritis and was referred directly to the Early Rheumatoid Arthritis Clinic.

The median waiting time was 67 days (range 0-78 days). All the scans were carried out in-house by the two rheumatology consultants with the load equally distributed among them.

Conclusion:
Ultrasound is a valuable tool for diagnosis of rheumatic conditions. Identifying new onset inflammatory arthritis allows such patients to be fast-tracked to an early arthritis service; conversely, excluding inflammatory arthritis can allow some patients to be discharged. Previously such patients may have been followed up for months, had trials of medications or further investigations before being eventually discharged; MSKUS may reduce these costs and inefficiencies.
Defining our ultrasound referral rate is helpful for future service planning and help in tackling the challenge of reducing waiting times. Given that most scans were for small joints of the hands and wrists, training rheumatologists to scan a limited range of joints may meet demand and expedite training.
AUDIT OF METHOTREXATE SPLIT DOSE REGIME FOR REDUCING GASTROINTESTINAL SIDE EFFECTS IN RHEUMATOID ARTHRITIS PATIENTS

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Background
Methotrexate is a very commonly used drug in the treatment of inflammatory arthritis and a first line drug for treating rheumatoid arthritis. It is generally prescribed as a low dose (10-25mg) weekly regime as a monotherapy or in combination with other disease modifying agents. Gastrointestinal toxicity is the commonest side effect which results in switching the tablet form to injectable form. At Warwick hospital we commonly use split dose regime (twice a week dose) for GI side effects. This audit was conducted mainly to analyse whether split dose regime alleviates the GI side effects in newly diagnosed rheumatoid arthritis patients.

Methodology
New patients from June 2014 to May 2017 were identified via therapy assessment monitor system which were then scrutinised for diagnosis & management.

Results
Number of new patients identified was 1580. Among them 270 were diagnosed as rheumatoid arthritis. Twenty four patients were subjected to methotrexate twice a week regime (split dose). Among them 15 patients were seropositive (62.5%) and 9 (37.5%) patients were seronegative. Split dosing was helpful in improving GI side effects in 19 patients (79%). In seropositive patients it was helpful in 12 patients (80%). In seronegative patients it was helpful in 6 patients (67%).

Conclusion
- Nearly 80% of the rheumatoid arthritis patients benefitted with split dose regime
- Seropositive patients were more likely to benefit with twice a week dose
- Reduced the need for switching to injectable methotrexate
DON'T THINK OUTSIDE THE BOX! GET RID OF THE BOX: A CASE OF POLYANGITIS WITH GRANULOMATOSIS PRESENTING AS A PERICARDIAL EFFUSION

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Introduction: Granulomatosis with polyangitis (GPA) is a systemic vasculitis that affects the small vessels with granulomata. It carries a high mortality and morbidity if left untreated. (1) It typically affects the upper and lower respiratory tracts but more important is the renal involvement. (2) The annual incidence of GPA in the UK during 1988–2010 was 11.3/million with equal sex distribution. (3) We report an unusual case of GPA which presented with pleuro-pericardial involvement.

Case report: A 50-year old male Caucasian male, ex-smoker with background of adult onset asthma presented to the accident and emergency department with sudden onset chest pain and palpitation. He was found to have atrial fibrillation with fast ventricular response (Picture 1). Prior to his admission, he had a one-week history of flu like symptoms, muscle aches, night sweats, loss of appetite and cough with two episodes of nose bleed. On examination, he was drowsy, pyrexial with temperature of 38.4 C and oxygen saturation was 92% on air. HR was 150 per minute and blood pressure was 98/60. Chest examination revealed dullness on percussion on left Lower base. The JVP was not raised; heart sounds were normal with no added sounds. His inflammatory markers were raised with C-reactive protein of 285mg/l NR(0-5), erythrocyte sedimentation rate of 54 mm/l NR (1-12), white cell count (WCC) 30.0 x10E9/L NR (4.0-11.0), neutrophil 26.2 x10E9/L NR (2.0-7.5). Kidney and liver function were normal. The electrocardiogram (ECG) showed atrial fibrillation with fast ventricular response. The chest radiograph showed cardiomegaly with bilateral pleural effusion (figure 1). Echocardiogram showed moderate, global pericardial effusion. CT pulmonary angiogram (CTPA) demonstrated no evidence of pulmonary embolism.

He was started on broad-spectrum antibiotics intravenously, although blood, sputum and urine culture had subsequently had no growth. In spite of antibiotic therapy, his clinical situation deteriorated. Repeat echocardiogram confirmed a large pericardial effusion with tamponade requiring an urgent pericardiocentesis: 600 ml of purulent fluid was aspirated and sample was sent for analysis demonstrating protein of 55g/l, numerous polymorphs and lymphocytes. No bacterial growth was present (Including TB culture). Human immunodeficiency virus, Hepatitis A, B and C with autoimmune profile were all negative. A week later, he developed a purpuric rash on his lower limbs and around his elbows. Repeat echocardiogram showed fluid re-accumulation. The antineutrophil cytoplasmic antibodies (ANCA) results were received: C-ANCA was strongly positive with PR3 of greater than 94 IU/ml NR (0-2) with normal myeloperoxidase. Urine analysis showed haemo-proteinuria and kidney function remained normal. Subsequent renal biopsy revealed active vasculitis lesions without crescent. A Diagnosis of GPA was made with renal involvement. He was treated with 40 mg of oral prednisolone daily in addition to cyclophosphamide. His symptoms dramatically improved with remarkable improvement of his CRP and ESR within a week. Six weeks later, follow up echocardiogram showed trivial non–significant pericardial effusion. He is currently under regular follow by rheumatology and renal team.

Discussion
This gentleman presented acutely with vasculitic illness causing constitutional symptoms, pericardial and pleural effusion and was later found to have renal involvement. Subsequent serology confirmed the diagnosis of GPA. Delay in the diagnosis can occur due to very nonspecific symptoms and signs on initial presentation and despite the short delay in reaching the final diagnosis, our patient responded well to steroid treatment and cyclophosphamide. Cardiac involvement is very rare in GPA and to the best of our knowledge; we have not found any case report of pericardial effusion in GPA, highlighting this rare but important complication of GPA.
Renal involvement is considered as poor prognostic feature in these group of patients and associated with future relapses (4).

**Learning points**
1. Cardiac involvement is rare but it can happen as apart of systemic involvement.
2. Patients presented with unexplained pericardial and pleural effusion should be specifically tested for vasculitis.
3. Evaluating renal function in GPA patients is important because early detection and treatment of renal involvement can significantly improve renal outcome.

**Figure 1:** chest radiograph showing cardiomegaly with bilateral pleural effusion

![Chest Radiograph](image)

**Picture 1** electrocardiogram showing atrial fibrillation with fast ventricular response

**References:**
Background
Inflammatory arthritides are a group of autoimmune disorders characterized by inflammation of the joints and often other tissue. These include among others, rheumatoid arthritis (RA) and psoriatic arthritis (PsA). They follow a chronic and often remitting and relapsing course. Early recognition, appropriate treatment with immunosuppressive medication form the mainstay of current guidelines for management of inflammatory arthritis. This aims to prevent destructive and irreversible joint deformities and improve patient care and quality of life. To enable early referral and rapid initiation of therapy, University Hospitals of Leicester has established a local pathway for management of early inflammatory arthritis.

Objectives
1. To evaluate the EIA clinic referral pathway.
2. To assess adherence to NICE guidelines on management of RA 2009.
3. To compare results with HQIP national audit (2015).

Method
Retrospective data from two 2-month blocks at beginning and end of 2016 collected from EIA clinic database which was modified to capture additional information. All clinic letters were reviewed and all appointments captured. Piloted and redesigned proforma was used to collect data which was analysed using Microsoft Excel.

Results
Seventy five patients were seen in the EIA clinic (n=75) out of which 59 were diagnosed with Inflammatory arthritis. 51 were RA and 8 were diagnosed PsA. Of these, 40 were female and 19 were male. Mean age was 56.5 years (19-80). We achieved Best Practice tariff criterion for target to be seen within 3 weeks of referral in 61% cases (national audit figure was 37%) and target to be started on DMARD within 6 weeks of referral in 66% cases (national audit figure was 68%). 42 patients started DMARDS at their first appointment, 7 had delayed start of DMARDS (>90 days) and 7 others did not receive any DMARDs at all. Methotrexate was the preferred first DMARD (33 patients) followed by hydroxychloroquine (16 patients) and sulfasalazine (3 patients). 6 patients started >1 DMARD at 1st appointment and none received triple therapy.

Conclusions
Good compliance with target for referral time to 1st appointment and target for referral interval to DMARD initiation. Methotrexate most common first DMARD but there was less frequent use of combination DMARDs. 7/59 patients very long delay to DMARD initiation. Majority had regular follow-ups at 2-3 month intervals but there was poor documentation of disease activity scores. There was also lack of other clinical outcome measures e.g. HAQ. This pathway clearly enhances the management of early inflammatory arthritis in our unit, and the audit highlights the areas which still require work.
Case Summary
A 73 year old gentleman presented to the Emergency Department with declining mobility and was noted to have severely deformed hands. He reported having both rheumatoid arthritis (RA) and past gout but was not under the current care of a rheumatologist, and not taking treatment for either condition. There was no suggestion of infection and his medical history was of alcohol excess. Mr B described symptoms of episodic polyarthritis going back to his 20s, along with progressive problems with hand deformity and loss of function over the last few years. On examination, there was erythema and synovitis of metatarsophalangeal joints bilaterally. Hand examination demonstrated marked bilateral ulnar deviation of the metacarpophalangeal (MCP) joints, as well as numerous small tophaceous deposits on his fingers (see Figure W in attached images). Blood tests revealed C-reactive protein (CRP) of 61 mg/L, uric acid 597 micromol/L and negative rheumatoid serology. The impression was of tophaceous gout with active synovitis in his feet and colchicine 500 micrograms twice daily commenced, with clinical improvement and reduction in CRP level to 8 mg/L within a week. Subsequent hand and foot radiographs displayed changes of RA (osteopaenia in MCP/MTP joints and resorption of the ulnar styloid process bilaterally, but also consistent with gout (juxta-articular erosions with sclerotic edges). Ultrasound demonstrated erosions, tophus deposition at the left first MTP joint, and a ‘double-contour’ sign (see Figures X & Y in attached images).

Mr B’s records were interrogated further and it became clear that Mr B’s polyarthropathy had become manifest long before his current presentation. His first recorded contact was in 2003 (aged 59) with an orthopaedic surgeon. While being reviewed for knee stiffness, he described a long history of “flare-ups” of suspected gout, and bilateral symmetrical ulnar deviation was identified at MCP joints. Serum urate was requested but not performed; no radiographs were obtained at this time. In 2010 (aged 66 years) Mr B was reviewed by rheumatology for widespread inflammatory polyarthritis while an inpatient. Plain radiographs of hands and feet were reported as consistent with RA and Sulfasalazine and Hydroxychloroquine commenced. Unfortunately Mr B failed to keep a series of appointments and continued to take alcohol. During a later inpatient admission, however, a swollen knee joint was aspirated and urate crystals demonstrated, confirming acute gouty arthritis. Currently he has no signs of rheumatoid synovitis and will be treated as gout with outpatient review.

Discussion
At several points in Mr B’s journey, clinicians have opted bona fide for a single diagnosis of his arthropathy. In 2003, the prior history of gout probably led the surgeon to ascribe his joint deformity to crystal arthropathy (anchoring or premature closure bias). In 2010, the rheumatologist applied the representativeness heuristic, observing typical rheumatoid-like clinical features and concluding RA alone was responsible. In 2017, this rheumatology trainee fell victim to the same bias in reverse, looking past typical deformities and seeing only tophaceous gout! These examples represent instances of Type 1 thinking: instinctive pattern recognition bypassing the more lengthy process of systematic medical assessment. Type 2 thinking is characterised by analytical reasoning, a reflective and methodical approach which overrides biases introduced by Type 1 thought.
Take Home Messages

1) Differentiating seronegative rheumatoid from crystal arthritis is vital as the treatment paradigms for these subtypes of inflammatory arthritis are distinct. Ultrasound of peripheral can help to identify typical features, which may facilitate early detection and treatment.

2) An analytical ‘Type 2’ approach to patient assessment, allows clinicians to challenge the established diagnosis and management of a rheumatic condition in the light of new findings.

(N.B. Patient Consent obtained to present this report).

Selected References


Images to accompany MRS Abstract 1

Title: Polyarticular gout or rheumatoid arthritis – a search for the smoking gun.

FIGURE W
CLINICAL PHOTOGRAPHS (2017)

FIGURE X
PLAIN RADIOGRAPHS (2017)
FIGURE Z
PLAIN RADIOGRAPHS (2009)
CROWNED DENS SYNDROME – PSEUDO-RHEUMATOID OF THE ODONTOID PEG PRESENTING AS ACUTE INFECTIVE DISCITIS

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Case Summary
A 76 year old lady presented to the Emergency Department with fever, rigors and acute occipital headache radiating to her left ear, with associated neck stiffness. She denied trauma to the head or neck. Initial blood tests revealed CRP 51, WCC 19.5 and coagulase negative Staphylococcus was isolated from 1 of 2 blood culture bottles. Intravenous flucloxacillin was commenced for suspected cervical spondylodiscitis, and she was transferred to an Orthopaedic ward. On day 2 of her admission urinalysis showed white cells and blood, although culture was negative. Chest X-ray was normal, and there were no other sources of infection. An MRI was performed on day 4 of her inpatient stay and showed high STIR signal in the bone of the odontoid peg, and adjacent anterior arch of C1 (see fig A). There was no evidence of fluid collection but some mild soft tissue thickening and oedema, reported as in keeping with rheumatoid arthritis (RA). The transverse ligament was intact with no spinal instability. Rheumatology review and RA serology were requested: rheumatoid factor was found to be 28 U/mL, and cyclic citrullinated peptide antibodies were negative.

On assessment by the rheumatology team, the lady described a history of longstanding degenerative arthritis of multiple joints, cervical spondylosis and bilateral knee replacements. She had experienced acute flares of neck pain with stiffness in the past but overall her history was not suggestive of RA. The patient made an excellent clinical response to antibiotics. Considering the positive blood culture, it was felt that septic arthritis of the atlantoaxial articulation was still a likely diagnosis, although a lack of oedema and effusion on MRI were atypical, even allowing for partial treatment at the time of the scan, hence the patient remained on antibiotics. After reviewing a subsequent cervical MRI on day 8 of her admission, it was concluded that a coincident (probably urinary tract) infection was the cause of her systemic symptoms and this had potentially triggered a flare of local inflammatory arthropathy. With radiographic chondrocalcinosis and severe osteoarthritis elsewhere (see fig B), and in the absence of clinical or laboratory evidence of RA, the diagnosis of atlantoaxial calcium pyrophosphate arthropathy (crowned dens syndrome) was made and topical non-steroidal gel commenced. Symptoms resolved within days, inflammatory markers improved (C-RP 23 from 51), antibiotics were stopped and she was discharged. She remains well but continues to experience occasional flares of neck pain, using topical non-steroidal gel as required.

Discussion
Spinal involvement is well described in RA and the spondyloarthritides, but is probably more common than previously reported amongst patients with calcium pyrophosphate dihydrate (CPPD) arthropathy. Crowned dens syndrome (CDS) can often be identified as periodontoid calcification on plain radiography of the cervical spine (see fig.C). Erosions are sometimes seen, as well as incidental calcification on CT scans performed to exclude fracture. Early recognition of this syndrome can prevent prolonged inpatient intravenous antibiotic therapy.

Take Home Messages
1) CPPD deposition of the odontoid peg (crowned dens syndrome) presents with atraumatic cervical pain and stiffness, and can be misdiagnosed as fracture, infection and tumour.
2) Plain film appearances can suggest CDS, although further imaging is usually required to exclude important differential diagnoses. Chondrocalcinosis at distant sites can be helpful.
3) Early recognition of the clinical features of crowned dens syndrome can prevent over-investigation and over-treatment for suspected bacterial / viral CNS or spinal infections.
4) Treatment of crowned dens syndrome is usually with non-steroidal anti-inflammatories unless contraindicated, and our experience suggests that topical therapy can be effective.

(N.B. Patient Consent obtained to present this report).

Selected references


Title: Crowned Dens Syndrome – Pseudo-rheumatoid of the odontoid peg presenting as acute infective discitis

Figure A. Plain lateral radiograph of the cervical spine demonstrating atlantoaxial subluxation

Figure B. Sagittal T2 STIR sequence of the cervical spine demonstrating bone marrow edema of the odontoid peg and atlantoaxial articulation

Figure C. Plain radiograph of the hand and wrist demonstrating osteoarthritis and chondrocalcinosis of the trapeziometacarpal joint on the left side
Mild musculoskeletal symptoms are commonly seen with statin use but only a small number of patients will experience significant muscle damage and it is even more rare for an autoimmune myopathy to develop. In these cases autoantibodies against 3-hydroxy-3-methylglutaryl coenzyme A (HMG-CoA) reductase can be identified.1 In addition to stopping the statin these patients typically require immunosuppressive therapy. We present two cases of statin-associated HMG-CoA antibody positive myopathy who have both responded well to immunosuppression.

Case 1
54-year old man with a background of type 2 diabetes and hypertension who presented to the rheumatology clinic with a two-month history of myalgia and muscle weakness. Total Creatine Kinase (CK) was 12400 u/L (normal range 40-320 u/L), inflammatory markers normal and HMG-CoA antibodies positive. He had been taking Simvastatin for six years and this was stopped as soon as the CK result was known. MRI scan showed oedema in the proximal aspect of both rectus femoris muscles and muscle biopsy was consistent with necrotising myopathy. He was started on Prednisolone and then given intravenous immunoglobulins and a course of Cyclophosphamide with a good clinical and biochemical response. Plans are now in place to commence him on Azathioprine.

Case 2
68-year old lady with a background of rheumatic mitral valve disease, atrial fibrillation and seizures who was initially seen as an inpatient referral. She had a one month history of predominantly proximal muscle weakness, myalgia and fatigue with an initial CK of 15927 u/L. Atorvastatin (which she had been on for 7 years) was stopped on admission. MRI of the lower left leg showed muscle oedema in keeping with myositis. A subsequent biopsy showed necrotising myopathy without inflammation and with no inclusion bodies and HMG-CoA antibodies were positive. She was started on Prednisolone and despite an initial improvement she continued to have symptoms even at a dose of 30mg/day. She was therefore given a course of Cyclophosphamide and subsequently started on Methotrexate.

It is thought that statins may trigger an autoimmune response against HMG-CoA reductase by upregulating expression and that even after stopping statins high levels of HMG-CoA reductase in regenerating muscle may perpetuate the immune response2. These cases both responded well to immunosuppression as seen in other reported cases1. HMG-CoA antibodies are not a standard part of the myositis screen and should be specifically requested in any patients with a significantly raised CK and a history of statin use to aid treatment decisions.

References