

## ABSTRACTS OF SOCIETIES

### Royal Medico-Chirurgical Society of Glasgow

Meeting held on 5th March 2009

#### Effect of Blood Pressure on Intra-Operative Complications During Phacoemulsification Surgery

PK Agarwal, M Mathew, M Virdi

Lanarkshire Acute Hospital Trust

**Background:** In the absence of guidelines, the practice of deferring phacoemulsification procedure in the immediate pre-operative period in known hypertensive patients and non hypertensive patients with raised blood pressure to allow poorly controlled arterial pressure to be treated, is based on the perception of increased peri-operative risk with no evidence to support this approach. The significance of blood pressure recordings in the pre and peri-operative setting on the surgical complications during phacoemulsification procedure was evaluated. **Methods:** Patients were classified as hypertensive based on the British Hypertension Society Guidelines. Blood pressure recordings during pre-operative assessment, admission, in the holding area prior to giving local anaesthesia, and one hour postoperatively were recorded in 734 patients undergoing phacoemulsification procedure. Any peri-operative or intraoperative complications during the procedure were noted. **Results:** There was no significant difference in the intra-operative complications between the hypertensive and non-hypertensive patients. Peri-operative increase in blood pressure noted in the holding area did not increase the risk of surgical complications during phacoemulsification procedure. **Conclusions:** Both pre-operative and peri-operative blood pressures do not appear to alter the risk of intra-operative complications during routine phacoemulsification procedure under local anaesthesia. We recommend that local anaesthesia and phacoemulsification surgery should not be cancelled on the grounds of peri-operative isolated systolic hypertension, Grade 2 systemic hypertension or in patients with Grade 3 systemic hypertension. Caution should be exercised in patients who are not known hypertensive with admission arterial pressures of Grade 3 systemic hypertension with or without target organ damage such as ischaemia, arrhythmias, cardiac failure and renal failure. These cases should be deferred until tight control of arterial pressure and cardiac protection is achieved.

#### Home Administration Of Subcutaneous Methotrexate For Paediatric Patients With Crohn's Disease Is Possible And Cost Effective

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**Background:** Methotrexate is increasingly used as a third line immunosuppression agent in children with Crohn's disease (CD). Methotrexate is traditionally administered in the hospital setting. We set up a nurse-led education programme to teach children/their parents to administer subcutaneous Methotrexate in the community. **Methods:** All patients given Methotrexate over a 16 month period. Patient demographics including previous treatments were collected. A competency based teaching package was implemented by the IBD nurse. Distances and travel times together with costings were calculated. **Results:** Thirty-two patients (19 male; 13 female) with a median treatment age of 11.96 years (IQR 10.67-13.92) were studied. 30/32 (17 children, 13 parents) were independently administering

Methotrexate. The median return journey distance to hospital was 23 miles (IQR 14.4 - 42.4) taking a median time of 52 minutes (IQR 41.0-73.5) for each injection. The total patient travel saving was £10,537 (average £730 per patient) and nursing time saving was £12,808 with home administration (total saving £23,345). **Conclusions:** This is the first paediatric study to demonstrate subcutaneous Methotrexate injections can be successfully given in the majority (94%) of patients with CD independently in the community. This results in significant time and money savings for patients and health professionals alike.

#### Pilot Trial of Remote Adjudication for Modified Rankin Scale Assessment in Clinical Stroke Trials

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<sup>1</sup>Stobhill Hospital, Glasgow

<sup>2</sup>Western Infirmary, Glasgow

**Background:** The modified Rankin Scale (mRS) is the most prevalent functional outcome measure in stroke trials. Poor reliability may limit the utility of standard mRS. Remote assessment of endpoints by adjudication committee is commonplace in contemporary trials and has potential to improve data quality. We hypothesised that remote assessment of mRS would be feasible and would demonstrate acceptable clinimetric properties. **Methods:** Consenting stroke survivors had mRS performed by a trained researcher, this assessment was video recorded for later review. At three months after initial mRS, an experienced panel of five assessors graded the video interviews assigning individual scores. This process was repeated after a further three-month delay. The group then discussed each case with final grading based on consensus. Inter-observer and intra-observer variability of remote assessment of video mRS was quantified using attribute agreement analysis. Validity was described by comparing group mRS score to other outcomes or variables known to predict final outcome (standard mRS; NIHSS; outcome status; "home-time"; stroke classification). **Results:** Of 102 consenting patients, video recordings suitable for group review were obtained in 99. Inter-observer variability of individual video mRS assessors was moderate ( $k=0.67$ ); intra-observer variability was moderate also ( $k=0.64$ ); variability for standard "face-to-face" assessment ( $k=0.57$ ). There was significant agreement between consensus group mRS and standard mRS; admission NIHSS and measures of discharge status (all  $p<0.001$ ). **Conclusions:** Remote assessment of mRS by adjudication panel is feasible and has acceptable reliability and validity. Further studies using video based methodologies are warranted.

#### Rehabilitation for Older Adults with Head Injury

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Dept of Medicine for the Elderly, Stobhill Hospital, Glasgow.

**Background:** Head injuries, even minor, may be associated with significant mortality and poor functional outcomes (*Susman et al, J Trauma 2002*). Older patients require more intensive rehabilitation than younger patients to achieve similar outcomes (*Mosenthal et al, J Trauma 2004*), and falls may be expected to be a more common mechanism of head injury than in younger people. We studied a series of older patients with minor head injury to assess injury mechanism and whether appropriate rehabilitation was provided. **Methods:** Case note review of 40 patients aged >65 years admitted with a diagnosis of minor head injury. **Results:** Mean age was 78 yrs (SD 6.8), 53% (n=21) were male. A fall caused the head injury in 80%. Alcohol intoxication contributed in 40% of patients with head injury attributable to a fall. Only 43% of patients received rehabilitation input as an inpatient and only 18% were offered access to outpatient rehabilitation. None were referred to falls services. **Conclusions:** As expected, falls were the commonest cause of head injury in this group. The majority of patients were not offered input from rehabilitation services or appropriate multidisciplinary falls

assessment, indicating a significant unmet need in this patient population. A pilot system in which all older patients with a head injury are identified and reviewed by a geriatrician to assess need for rehabilitation and/or referral to falls services is being developed.

### Dynamic Cerebral Autoregulation is Impaired after Acute Ischaemic Stroke but not TIA

F. Brodie

Specialist Registrar in Geriatrics/General Medicine, Glasgow

**Background:** Dynamic cerebral autoregulation (dCA) is the process by which cerebral blood flow is maintained despite fluctuations in blood pressure (BP). It has previously been shown that dCA is impaired acutely following ischaemic stroke. The aim of this study was to assess whether dCA was similarly affected by transient ischaemic attack (TIA). **Methods:** Patients with acute minor ischaemic stroke or TIA were recruited from consecutive admissions, while healthy volunteers from staff and friends were recruited into a control group. Cerebral blood flow velocity in the middle cerebral arteries was measured using transcranial Doppler ultrasound, with simultaneous non-invasive recording of beat-to-beat BP and heart rate. Following transfer function analysis the impulse response was derived, from which the autoregulatory index (ARI) was calculated. **Results:** Nineteen minor stroke and 17 TIA patients completed the protocol a median of 36 hours from symptom onset. A total of 22 controls balanced for age, gender and BP with the patients also completed the protocol. ARI was significantly lower in the affected hemisphere in minor stroke patients compared to controls ( $4.0 \pm 2.7$  vs  $5.6 \pm 1.1$ ,  $p < 0.01$ ). The TIA group showed no significant difference in ARI compared to control. **Conclusions:** The reduction in ARI observed acutely after minor stroke is in keeping with previous studies. This may raise concerns regarding early introduction of BP lowering therapies following ischaemic stroke in a situation where cerebral blood flow may be dependent upon systemic BP. No significant difference in dCA was found following TIA compared to controls.

### Trainees' Knowledge of Non-Invasive Ventilation in Acute Respiratory Failure

H Bayes, C O'Dowd

Department of Respiratory Medicine, Southern General Hospital, Glasgow.

**Background:** Non-invasive ventilation (NIV) services have increased in UK hospitals, with junior doctors often involved in the 'out-of-hours' care of NIV patients. We assessed medical trainees' knowledge of NIV. **Methods:** We surveyed trainees at the end of a training year working within the medical unit in a city teaching hospital. Trainees were included from foundation years (FY) to registrar (SpR) grade. The NIV questionnaire was derived from the British Thoracic Society guidelines (2002)<sup>1</sup>, including NIV indications, clinical scenarios and operational practicalities. **Results:** Forty-nine trainees completed the questionnaire (response rate: 84%). 51% had previously worked within a respiratory unit. 80% cover a unit providing NIV out-of-hours. 49% (24) of trainees had commenced a patient on NIV, while 71% (35) had been involved in the care of an NIV patient out-of-hours. 49% of trainees had no NIV training. The most common NIV training source (in 33%) was senior demonstration. There was greater training experience in senior (specialist trainee (ST) 2–SpR) compared with junior doctors (FY1–ST2) (89% v 33%,  $p < 0.05$ ). Forty-five per cent and 18% of trainees correctly identified indications for and absolute contraindications to NIV, respectively; with no significant difference between junior and seniors trainees. Senior trainees identified more frequently the correct clinical triggers to commence NIV. Target ventilator settings and oxygen saturation values were correctly identified by 29–35% and 70% of trainees, respectively. **Conclusions:** Despite NIV being widely utilised in UK hospitals, medical trainees knowledge is lacking. Our study

highlights the importance of developing formal training and directly observed assessment of trainees in NIV.

For references, refer to [www.smj.org.uk](http://www.smj.org.uk)

### Hyperglycaemia: Effects on Expression of Genes Affecting Epithelial Differentiation and Vascularisation

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<sup>2</sup>Rowett Research Institute, Glasgow, United Kingdom

**Background:** Wound healing is impaired in patients with diabetes. It would seem sensible that good glycaemic control should improve wound healing. **Aims and Objectives:** To determine if there is any difference in gene expression in skin of patients with diabetes and determine whether there was any difference between good and poor glycaemic control. **Methods:** Skin biopsies of 2 cm<sup>2</sup> were obtained from the forearm of three groups of male volunteers (20–45yrs): five patients in each group: a) Healthy non-diabetics (control); b) Type 1 Diabetics with poor glycaemic control (HbA1c >9.5): poor control group; c) Type 1 Diabetics with good glycaemic control (HbA1c <7.5): good control group. Samples were frozen immediately in liquid nitrogen and transported on dry ice. RNA was isolated and analysed by Affymetrix micro-arrays. Three groups of genes were analysed:

1. Markers of epithelial differentiation - trichohyalin, keratin 25, keratin 27.
2. Markers of vascular endothelial smooth muscle cells - alpha actin, myosin heavy chain and tropomyosin
3. Markers of neuronal cells - Purkinje cell protein 4 and somatopodin.

**Results:** The genes of all three groups were expressed at a much higher level in healthy subjects as compared to those with diabetes with poor glycaemic control. With good glycaemic control the level of gene expression was similar to healthy controls. **Conclusions:** Poor glycaemic control possibly leads to poor wound healing as a result of alteration of expression of genes responsible for epithelial differentiation and vascular smooth muscle formation.

### Differential White Cell Count and Neutrophil - Lymphocyte Ratio may be Prognostic Indicators in Overall Survival in Colorectal Cancer - But it's Not the Whole Story.

KS Stevenson, L Magill, I Mackenzie, A Macdonald

Lanarkshire Colorectal Group, Monklands Hospital, Airdrie.

**Background:** Recent literature has identified a relationship between the systemic inflammatory response and poor outcome in colorectal cancer (CRC) surgery. The aim of this study was to examine the relationship between routine differential white cell count components and neutrophil to lymphocyte ratio NLR, with staging, mode of presentation and survival in patients with colorectal cancer. **Methods:** Patients diagnosed between 1st May 2003 and 1st May 2007 were identified from the prospectively maintained regional colorectal cancer database. The differential white cell count (WCC), platelet count, albumin and NLR were recorded from preoperative and admission blood tests. Multivariate survival analysis was performed using the Cox proportional hazard model. **Results:** 363 patients were identified. 184 underwent potentially curative resection, 89 had palliative surgery. 90 had no surgical procedure. Of the 184 who had potentially curative surgery, 164 cases were elective and 20 performed as an emergency. No significant difference was observed in NLR by tumour stage ( $p = 0.11$ ). However WCC ( $p = 0.006$ ), neutrophil count ( $p = 0.003$ ), lymphocyte ( $p = 0.002$ ) and NLR ( $p = 0.002$ ) were significantly elevated

in emergency versus elective presentation. On univariate survival analysis surprisingly, stage ( $p=0.167$ ) and mode of presentation ( $p=0.183$ ) were not independently associated with survival whilst WCC ( $p=0.000$ ), neutrophil count ( $p=0.011$ ), NLR ( $p=0.019$ ) and albumin level ( $p=0.008$ ) were significantly associated with overall survival in this population. On multivariate cancer specific survival analysis only platelet count ( $p = 0.046$ ) was significantly associated with survival. However of the 37 deaths during follow up the majority (29) were from other causes. **Conclusions:** Assessment of the differential WCC, albumin and NLR can be a simple and useful prognostic indicator which gives insight into the correlation between systemic inflammatory response and overall survival outcome for patients with colorectal cancer. Further investigation is required to assess whether the prognostic significance of NLR in overall survival is confirmed with longer follow up in cancer specific survival or whether this relates to other host or socioeconomic factors.

## ABSTRACTS OF SOCIETIES

### Scottish Society for Rheumatology

Glasgow Caledonian University,  
27th March 2009.

*Prizes for best presentation of abstract were awarded to Caroline Allan (Medical Student) and Fiona Pollock and Jacqueline Lebeida, Occupational Therapists.*

#### The Development of a Discrete Choice Experiment Questionnaire to Conduct a Cost Benefit Analysis of a New Integrated Foot Care Programme for Patients with Juvenile Idiopathic Arthritis.

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**Background:** Juvenile Idiopathic Arthritis (JIA), the commonest rheumatic disorder of childhood, places a considerable financial burden on the healthcare system.<sup>1</sup> Discrete choice experiments (DCEs) have become an increasingly popular method for valuing benefits in cost-benefit-analyses (CBA) but have not yet been applied in paediatric rheumatology. **Methods:** To describe how a DCE was developed using elicited healthcare preferences, for an embedded CBA in a randomised controlled trial of a new foot-care programme for patients with JIA. A qualitative approach, comprising of semi-structured interviews and focus groups, was adopted to explore preferences for foot care in JIA. Interview guides were informed by a literature review of health care preferences. Seven interviews and two focus groups. A data-driven inductive approach to coding and theme development was adopted to identify attributes.<sup>3</sup> Realistic levels mirroring concurrent trial interventions were defined by expert opinion and group consensus. A fractional factorial design was applied and tested using SPExptSoftware.<sup>4</sup> **Results:** Six key attributes were identified. These were: pain relief, improvement in mobility, waiting time for the first podiatry contact, activities of daily living, route to podiatry care, and footwear type. 'Cost' was included so WTP could be indirectly calculated. An orthogonal design consisting of 18 choice sets was created. **Conclusions:** Qualitative methods can be used effectively to develop attributes for a DCE, for use in CBAs of new therapies such as a new foot care programme. Preliminary testing indicates the DCE has face validity and is suitable for calculating WTP through logit regression analysis.

For references, refer to [www.smj.org.uk](http://www.smj.org.uk)

Sponsors, Arthritis Research Campaign, Glasgow Caledonian University.

### Scottish National Web Based Audit

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**Background:** The Scottish Society for Rheumatology has been awarded a project grant from NHS Quality Improvement Scotland to fund development of a web based audit tool over three years. A demonstration version of the tool will be available for viewing at the meeting.

#### Methods:

- To develop a national system of web based audit.
- To use this system to audit national guidelines.
- To allow individual units to compare their results against peers and the national average, and against their own results in previous audit cycles.
- To encourage multi disciplinary audit.
- To establish the culture of continuous short cycle audit within the society as a means of reviewing and improving performance and outcome.
- To establish a regular forum for the reporting of audit at society meetings as a means of highlighting agreed standards of care to the clinical community and promoting improvements in patient care.
- To develop methods of demonstrating that this audit activity results in improvements in patient care.
- To develop audit methodology that is robust and free from bias, and which will allow data to be fed back to contributing centres rapidly and accurately.

**Results:** Two audits per year will be introduced. Each audit will have a clinical lead and usually one other lead person. This team will be responsible for developing the audit data set in collaboration with the software designer. The data set will be piloted in the host unit before being rolled out nationally and the final data set will be approved by the clinical standards group of the Scottish Society for Rheumatology. All projects will be evaluated to assess the extent of participation (number of centres contributing data), accuracy of data collection and improvement in measured outcomes, and this will be reported to participants at least six monthly and to the Society at the spring and autumn meetings.

#### The topics planned are:

- o March 2009 – podiatry audit
- o Autumn 2009 – first phase of RA audit (CARA follow on)
- o Spring 2010 – DMARD monitoring audit based on BSR guidelines
- o Autumn 2010 – phase 2 of RA audit
- o Spring 2011 – Cyclophosphamide audit
- o Autumn 2011 – Phase 3 of RA audit

**Conclusions:** Units wishing to participate in the podiatry audit should contact [www.scottishrheumatology.org](http://www.scottishrheumatology.org)

Sponsors, NHS Quality Improvement Scotland

#### Knowledge of Anti-CCP Status Informs Management and is Cost-Effective

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**Background:** Anti-CCP antibodies are associated with disease persistence and joint damage. They have a greater sensitivity and specificity than rheumatoid factor (RF). At £3.80-£6.00 per test compared with £1.70 for RF, routine testing has cost implications. We

sought to see if testing was clinically relevant and cost-effective in our population. **Methods:** Demographic information, provisional diagnosis, management plan and RF status was recorded at the time of testing. Results were accompanied by a detailed questionnaire requesting information on diagnosis, acute phase response, radiology results, RF status and how CCP result influenced management. **Results:** 289 tests were performed - 76% female, median age 52.5 years (range 15-87), 91% had polyarticular symptoms. Only 60% had detectable synovitis. Provisional diagnosis was RA in only 2%, 59% thought to have an undifferentiated inflammatory arthritis. 25% were started on disease modifying therapy purely on clinical grounds. 231 anti-CCP results were available; 27% were positive, 67% female, median age 56 years. 58% had a positive RF. The clinician's pre-test diagnosis was most likely to be RA (50%) and availability of anti-CCP result changed this to 45%. Follow-up was arranged for 94% of the positive cohort, 42% of those who were anti-CCP negative were able to be discharged. 64% of responders felt that anti-CCP result had influenced their management. **Conclusions:** Knowledge of anti-CCP assisted with management. Although more expensive, by reducing the need for follow up, resource savings could offset the cost, making this a viable option in the management of early undifferentiated inflammatory arthritis.

Sponsors - Abbott Laboratories agreed to provide kits to a limited number of patients and the immunology laboratory services agreed to test for the presence of anti-CCP antibodies.

### Clinical Presentation of Biopsy Positive Giant Cell Arteritis in Fife and Audit of Initial Management

*CLM Allan, J Lyall, S Brannan, M Rahilly, JS McLaren*

**Background:** Giant cell arteritis (GCA) is the commonest form of primary systemic vasculitis. It is important that GCA is diagnosed early and treated promptly as it can lead to acute blindness. **Methods:** All patients diagnosed with biopsy positive GCA (bpGCA) over two years in Fife were identified from the Rheumatology database and Pathology records. Case notes were reviewed and the outcome of patients' management was assessed against BSR draft guidance. **Results:** 20 patients were diagnosed with bpGCA. Mean age 76 years. Patients presented most frequently to General Medicine (40%) and Ophthalmology (35%). Initial symptoms included new onset headache (80%), visual disturbance (70%), jaw claudication (70%), weight loss (75%) and PMR (55%). Examination revealed temporal artery (TA) abnormality in 73%. All had inflammatory markers measured. 62% had an ESR >50. 70% of TA biopsies met the minimum target length of 1cm. 65% of patients were biopsied within a week of initiating treatment. 60% of patients were commenced on steroid therapy within a week of presentation. 50% of patients were initially commenced on appropriate dose steroid therapy. Bone protection and gut protection were prescribed in 90% and 95% respectively. 30% of patients experienced side-effects from steroid therapy. **Conclusions:** This audit reveals areas for improvement in the initial management of GCA. 40% of patients were not commenced on steroid therapy within a week of presentation. 40% of patients were treated with a lower initial dose of steroids than recommended. The audit-cycle will be completed by re-auditing at an appropriate time point following distribution of Fife-wide GCA guidelines.

*For references, refer to [www.smj.org.uk](http://www.smj.org.uk)*

### Implementation of Lifestyle Management for Arthritis Programme (LMAP) in Lanarkshire

*F Pollock and J Lebida*

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**Background:** We are two Rheumatology Occupational Therapists (OTs), based at Wishaw General Hospital, Lanarkshire, Scotland. In January 2006 the Scottish Executive encouraged Allied Health

Professionals (AHP) in Scotland to apply for a Travel Scholarship. The award of the scholarship was to enable AHPs to investigate areas of good practice pertinent to their role and their clinical speciality. We submitted a proposal to the AHP Travel Scholarship Scheme. The title of our proposal was "Investigation of how Occupational Therapy programmes could impact on prevention of work disability with Rheumatology patients". Our proposal was accepted, and in May of that year we travelled to Canada for two weeks. **Methods:** Since our return from Canada we have implemented the Lifestyle Management for Arthritis Programme (LMAP) in Lanarkshire and also set up an OT Service in Occupational Health. LMAP was researched by Dr Alison Hammond, FCOT, PhD, M.Sc., B.Sc (Hons.), Dip.C.O.T. The programme is an educational behavioural programme. It provides patients with the opportunity to change their behaviour and learn new habits and strategies to help them manage their arthritis. The programme itself consists of two modules, both lasting for four weeks. The programme is multi-disciplinary led, although the OTs are involved in the co-ordination and planning of the programme. **Module One** emphasises joint protection and managing fatigue. It is very practical in nature and many activities are kitchen based. Group dynamics are important and peer feedback and discussion are some of the ways which allow change to occur. **Module Two** emphasises keeping fit, foot care, dealing with pain and stress. Exercise is encouraged and patients are taught Tai Chi and are provided with pedometers to encourage participation in a walking programme. We have also developed an Introductory Evening in Lanarkshire where patients along with their families and friends are invited to attend. All members of the team, including the Rheumatologist are present. At the end of the meeting we hope to have convinced all patients of the importance of attending the programme, and get them to sign up to Module One! **Results:** Currently we have successfully completed: three Introductory Meetings, four of Module One and two of Module Two. Some of our modules have been in the evening to allow people to attend who work or who have child care commitments. There has been a recent focus group with those patients who have "graduated" after completing both Modules. Feedback from this group, (and also provided to us during delivery of the programme) has been extremely positive. **Conclusions:** Currently the Lifestyle Management for Arthritis Programme is having positive benefits for the Lanarkshire population.

*For references refer to [www.smj.org.uk](http://www.smj.org.uk)*

### The Adverse Effects of Intra- Articular Steroid Joint Injections

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**Background:** Intra-articular steroid injections have come to be recognised as an important aspect in the treatment of Juvenile Idiopathic Arthritis. However, to our knowledge, no study has yet been done to determine any complications occurring seven days post injection. The aim of our audit is to assess the pain and any complications in the seven days following intra-articular steroid injections. **Methods:** All patients, aged 16 years of age and under, who underwent joint injections between 15th October 2008 and 28th January 2009 at the Royal Hospital for Sick Children, Yorkhill, were eligible for inclusion into the audit. Patient's parents were asked about their child's progress seven days post injections with the view to complications including pain, swelling, local reaction and mobility. Parents were telephoned and asked questions set out in the audit questionnaire. **Results:** During the allocated time, 183 joints were injected. Twenty-two patients out of 28 (79%) complained of pain in one or more injected joint of which 21 had to be administered a form of analgesic. Twenty-one (75%) out of the 28 patients had a local reaction in the form of swelling, bruising or redness. Five (18%) parents out of 28 claimed not to have observed any improvement in their child's mobility within seven days of treatment. **Conclusions:** Intra-articular steroid injections cause pain and local reactions, which require analgesic treatment, in the seven days immediately following injections.

*For references, refer to [www.smj.org.uk](http://www.smj.org.uk)*

## Management of Chronic Kidney Disease in Rheumatoid Arthritis Patients

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**Background:** The MATRIX study in 2008 found a high prevalence of chronic kidney disease in patients with rheumatoid arthritis.<sup>1</sup> This audit asks whether patients with rheumatoid arthritis are receiving ideal management of any chronic kidney disease as per the Scottish Intercollegiate Guideline Network recommendations<sup>2</sup> and the local Glasgow Clyde and Forth Valley CKD leaflet.<sup>3</sup> **Methods:** From October to December 2008 between Inverclyde Royal Hospital and Royal Alexandra Hospital, all patients seen by the Rheumatology team with a diagnosis of Rheumatoid Arthritis were analysed with the following parameters:

- Annual eGFR
- Annual urinalysis (protein:creatinine ratio if any proteinuria detected.)
- DMARDS/NSAIDS prescribed and any co-morbidities
- Maintain BP <130/<85 annually
- ACEi/ARB if protein:creatinine ratio >100 or diabetes mellitus present.
- Maintain haemoglobin 10-12 six monthly.
- Check Calcium/phosphate and alkaline phosphatase six monthly.
- Aspirin and lipid lowering agent in CKD 1-3 with cardiovascular risk >20%.

**Results:** 78 patients. Seven had stage three CKD. Only two of the seven were managed in accordance with guidelines for best practice:

- Four had no urinalysis
- One was not prescribed ACEi/ARB.
- Four did not have six monthly Ca/PO check
- One did not have aspirin or lipid lowering therapy prescribed

**Conclusions:** Make the guidelines for CKD management more visible in rheumatology outpatient department, e.g. a poster. Include in the diagnosis section of letter to GP the diagnosis of CKD and the stage. Include a post script with a web address for the up-to-date management guidelines.

For references, refer to [www.smj.org.uk](http://www.smj.org.uk)

## Peer-Assisted Learning by Medical Students Improves Musculoskeletal System Examination Skills

ME Perry, JM Burke, L Friel, M Field

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**Background:** There is a need to improve confidence and aptitude in musculoskeletal system (MSS) examination among medical students and clinicians. Peer-assisted learning (PAL) is a technique where trained students (trainers) assist their peers (trainees) with learning so that students learn from and with each other. Several of the principles underpinning PAL have been endorsed by the GMC. Having previously shown that MSS training can be enhanced when PAL is used as part of a voluntary extra curricular component, this study aimed to evaluate whether PAL can be effectively included in the integrated medical curriculum. **Methods:** Over two years, 50 final year students were trained in the Gait, Arms, Legs, Spine (GALS) system for MSS examination, whilst attending a routine clinical attachment. These students trained 159 trainees from their final year group in MSS examination using GALS. Participating students were evaluated with pre/post confidence questionnaires (100mm visual analogue scale) and

course experience questionnaires (CEQ) (5 point Likert scale). All students take an end of year OSCE which includes a clinical MSS station allowing results for trainers and trainees to be compared with those from 229 students trained in the standard curriculum. **Results:** Confidence questionnaires were completed by 30 trainers and 136 trainees. Significant differences were observed in all parts of GALS examination after training for trainers ( $p < 0.005$ ) and trainees ( $p < 0.005$ ). Results from CEQs from the trainers demonstrated benefits in all parameters investigated including teamwork, trainers performance, teaching skills. In the end of year OSCE 50/50 (100%) trainers, and 139/159 (87%) trainees passed the MSS OSCE station, in comparison to 192/229 (84%) from the standard curriculum. Trainers were more likely to pass the MSS station than trainees or students from the standard curriculum ( $p = 0.008$  and  $0.002$  respectively), but trainees were no more likely to pass than standard curriculum students ( $p = 0.33$ ). **Conclusions:** PAL has been successfully integrated into the mainstream medical curriculum as an adjunct to MSS learning.

## ABSTRACTS OF SOCIETIES

### Scottish Paediatric Society Summer Meeting

Royal Aberdeen Children's Hospital, Aberdeen, 22 May 2009.

#### Clinical Case Presentations

##### Renal Causes of Hypertension

A Pei Chen Sun, C Oxley

Royal Aberdeen Children's Hospital, Aberdeen

Genuine hypertension in childhood is rare. There are a number of factors that commonly affect the blood pressure of children in hospital. These are white coat effect, usage of incorrect cuff size and the failure of the child to co-operate. Blood pressure is often measured in hospital when the child is admitted during periods of illness. This in itself can affect blood pressure readings. As a result, it is quite common to record high blood pressure measurements when the child is initially assessed. Frequently, these are regarded as inaccurate readings and ignored.

In this presentation, I will be discussing the interesting presentations of three children with renal causes of hypertension and highlighting the importance of recognition. Renal hypertension is the most common cause accounting for two thirds of cases. Renovascular hypertension is less common accounting for approximately 5 – 10% of all hypertension in childhood. The first case is about a child who was found to have hypertension incidentally when he was admitted to the hospital after head injury. He was later found to have reflux nephropathy. In the second case, the adolescent was experimenting with grandmother's blood pressure machine while grandmother was an inpatient at Dr Gray's hospital. Her father, who is a General Practitioner, realised the child had hypertension. Subsequent investigations revealed a unilateral non-functioning kidney as the cause of the hypertension. The last case is a child with cutis marmorata congenita who presented in focal status epilepticus at five years of age. Renal artery stenosis was found to be the cause of her hypertension. Telangiectases and phlebectasia are well described in cutis marmorata congenita and we describe broader phenotype including arterial malformation with hypertension.

It is, therefore, important to repeat an abnormal measurement at a later time to ensure the reading is within an acceptable range for the child based on the child's sex, age and height centile. 98% of children with hypertension have a definitive cause and a diagnosis like renal artery stenosis may be amenable to curative treatment.

## Painful Past and Present

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Chronic idiopathic pain in children is uncommon, but causes excessive anxiety to the child and parents and poses difficulties in diagnosis and treatment. Chronic pain has an adverse impact on child and family.

At the age of 11 years a young girl presented with severe pain affecting the left hip and left loin. The pain was described as sharp, continuous and prevented her from bending her leg. She was unable to walk or sit down. There were no other associated symptoms and in particular there was no fever, swelling, redness or abdominal signs. Investigations including blood count, CRP, ESR, blood and urine culture, abdominal and left hip ultrasound, abdominal, spine and hip CT and MRI scanning were all within normal range. Treatment with paracetamol, ibuprofen and diclofenac were of limited help.

A provisional diagnosis of Complex Regional Pain Syndrome was made and she was treated with Gabapentin and simple analgesia. She was also managed by the pain team with gradual improvement over three months.

During the fourth month of her illness, she presented with acute severe pain affecting her left foot and shin. Pain was sharp, continuous and is associated with cold blue shiny skin of the left leg and foot. The skin was sensitive to touch and she was unable to move her foot or bear weight. Amitriptyline was added to her treatment and she was referred for physiotherapy and clinical psychology for further support and management. Previous history included admission to hospital with severe abdominal pain at the age of eight years following minor injury due to a road traffic accident and admission at age nine years with left chest pain that lasted for two weeks and was thought to be due to costo-chondritis.

**Discussion:** Complex Regional Pain Syndrome, is uncommon, but has typical presentation and early recognition may help in providing positive management plan that would reduce anxiety and the impact of the condition on child's health, education and behaviour and also on the family dynamics.

## Chiari – I “Benign but not so Benign”

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**Introduction** – Chiari I malformation is often asymptomatic and found incidentally on neuroimaging. This case highlights a rare and devastating complication of this abnormality. **Case History:** A previously well 13 year old girl presented to her local hospital with four days history of cough, cold, left ear pain and ear discharge. She had headache, neck stiffness, vomiting, high temperature and was confused on the day of presentation. She was thought to have meningitis and appropriate management was started. Two hours after admission she had an acute episode of tonic posturing, desaturation and apnoea. She was intubated and transferred to the regional PICU for ventilatory support. She required fluid boluses and nor-adrenaline to maintain systemic blood pressure. She had no previous neurological symptoms. She had made normal developmental progress and was progressing well at mainstream school. On examination she was making no respiratory effort and had no spontaneous movement. Her pupils were reactive, eye movements intact and she was able to respond to questions by blinking. Investigations revealed elevated inflammatory markers with CRP > 200 and peripheral white cell count >20 mainly neutrophils. Prothrombin time (PT) – 21 (raised). Blood and CSF PCRs negative for routine bacterial and viral pathology. Influenza A positive on nasal secretions. CT Brain showed herniation of cerebellar tonsils through foramen magnum. MRI Brain revealed bilateral cerebellar

infarcts, herniation of cerebellar tonsils through foramen magnum, consistent with coning and upper cervical cord and lower brain stem ischemia in the territory of PICA. In an attempt to prevent further cord ischaemia she had a posterior cranio-vertebral decompression to C3 and resection of infracted cerebellum and cerebellar tonsils. The pathology showed haemorrhagic infarction of the cerebellum. Currently, she remains ventilated via a tracheostomy, undergoing neurorehabilitation and receiving supportive care with a view to discharge home with a full-time care package. At four months from the injury she has not regained any movement or sensation below the neck. Neuropsychology assessment has demonstrated intact cognitive function. **Discussion:** She had an underlying Chiari – I malformation and that a coincidental acute otitic inflammatory process produced vascular changes and swelling within the posterior fossa and foraminal impaction which led to an increasingly severe ischemia, resulting in cerebellar infarction and infarction of lower medulla and upper end of cervical spinal cord. Though her initial clinical picture was suggestive of meningitis we never found any supporting evidence of this on CSF (obtained through a ventricular drain). The contribution of influenza A is uncertain but again this was not found in CSF or in the cerebellar tissue removed at time of surgery. Chiari – I is thought to be benign and if asymptomatic should not require treatment but very rarely it can lead to life threatening brainstem coning. Chiari - I is generally a benign condition but not so benign in this case.

## “Three – Lies Disease” – Seeing is Not Knowing

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**Presentation:** An 11 year old girl presented with four-week history of intermittent colicky abdominal pain, weight loss, urgency and frequent bloody mucus stools. Initial investigations revealed normal inflammatory markers and normal Upper GI endoscopy and colonoscopy, but revealed microcytic hypochromic anaemia. Symptoms were resistant to medical treatment with Mesalazine, steroids, and elemental diet. After eight weeks, a repeat colonoscopy revealed irregular ulcers in the distal colon, and the histology confirmed the diagnosis of solitary rectal ulcer syndrome. Received a course of Sucralfate without much improvement in the symptoms and was referred to physiotherapy for biofeedback. **Discussion:** Solitary rectal ulcer syndrome (SRUS) is a rare condition with incidence of one in 10000 in adults and much rarer in children. The condition was first described in 1830 but the histopathological features not until 1969. SRUS usually presents with a symptom complex of rectal bleeding, passage of mucus, straining on defecation, tenesmus, perineal and abdominal pain, sensation of incomplete defecation, constipation and rectal prolapse. The pathophysiology of SRUS is unclear, but it is likely to be secondary to ischemic changes in the rectum associated with paradoxical contraction of pelvic floor and external anal sphincter muscles and rectal prolapse. Ulceration is not universally present, polypoid lesions are also seen. The lesion or lesions are most often found on the anterior or anterolateral wall of the rectum, although they can also be located in the left colon. Lesions are multiple in 30 percent of cases, hence also known as "the disease of three lies". Diagnosis of SRUS is based on clinical features, findings on proctosigmoidoscopy and histology examinations. Evidence for management of SRUS is very limited. Bowel training with a high fibre diet, laxatives and Sucralfate enema has shown good results. The role of steroids is not completely established. Although conservative measures may be beneficial to treat constipation and dyssynergia of defecation dynamics, excision of rectal ulcer and surgery of overt rectal prolapse may be required in refractory cases. Gut directed biofeedback has proven to be effective behavioural therapy for management of SRUS. Usage of Botulinum toxin and Dynamic MRI proctography in management of SRUS is under review. Hence diagnosing an SRUS is not like knowing management options. **Conclusion:** SRUS is rare condition to be considered in children with bloody mucus stools and early referral for specialist opinion is recommended.

**"It's Like the Last Three Years Have Vanished!"**

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We present the case of a 13 year-old boy with acute, severe short-term and long-term memory loss, stroke like episodes and generalised seizures over the course of three different admissions in a one-month period. He subsequently developed focal status epilepticus, unilateral hippocampus changes which progressed to bilateral on MRI. Antibody testing revealed a diagnosis of Hashimoto's Encephalitis. He had three cycles of plasmapheresis after immunoglobulin infusions and remains on high dose steroids and has made an excellent recovery with memory function used as a guide to acute relapse of the disease. The objective of this presentation would be to highlight this rare form of encephalitis and review the evidence base for medical treatments used.

**Chronic Recurrent Multifocal Osteomyelitis – An Under Recognised but Treatable Condition**

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**Introduction:** Chronic Recurrent Multifocal Osteomyelitis (CRMO) is a painful, relapsing-remitting, inflammatory condition of bone in the paediatric population. Even though described as self-limiting and benign, 50% of patients experience either ongoing pain or functional limitation into adulthood. Once diagnosed, treatment aimed at suppressing inflammation is effective in the majority. **Objectives:** To illustrate the condition with a case report and to report the clinical features, diagnosis and treatment of CRMO over the past five years in the rheumatology service at RHSC Glasgow. **Population and Methods:** We present a nine year-old boy with sacro-iliac CRMO successfully treated with pamidronate. Following this index case we performed a retrospective case-note review of all children treated for CRMO by the rheumatology service at RHSC Glasgow over the past five years. Data extracted included age at first symptoms, age at diagnosis, sites affected, diagnostic features, baseline investigations, previous treatments, present treatment and clinical condition. **Results:** Seven patients including the index patient were identified (three female, four male). Mean age (range) at first symptom was 8.3 years (4-11), age at diagnosis was 10.0 (5-15), time to diagnosis was 19.4 months (5-60 months). Initial sites were unifocal in six patients (three tibial, one humeral, one calcaneal, one sacro-iliac) and multifocal in one. Nocturnal pain was a cardinal feature in all at presentation. Initial investigations included inflammatory markers in all patients, x-ray in five, MRI in three and ultrasound in two. Four underwent biopsy with pathology results showing chronic inflammatory changes with new bone formation but no evidence of malignancy or growth on cultures. All patients have subsequently undergone MRI demonstrating oedema with contrast enhancement, varying degrees of periosteal reaction and cortical thickening with lytic lesions in some. Disease has remained unifocal in one, affecting two sites in another, three sites in four patients, four sites in one and five sites in another. Seven lesions were hyperostotic in six patients. Hyperostotic sites include the tibia, humerus, mandible and clavicle. Other sites include seven pelvic/sacro-iliac lesions and one spinal. Four patients received prolonged antibiotic therapy to no avail. NSAIDs were used in six and continue to be required in four with ongoing active disease. Pamidronate was used for treatment in four patients. All showed a significant response although of variable duration. Three patients are currently in remission on no treatment. **Conclusions:** In keeping with the literature, cases in our series presented with painful bony lesions with nocturnal pain as a cardinal feature. Lesions varied in site and morphology, seven of 22 being hyperostotic. Clinical course was variable but generally relapsing-remitting and persistent. Response to treatment with NSAIDs was generally good. Response to pamidronate was significant although variable. No clear relation between disease pattern and response to treatments is apparent. This is an under recognised condition for which there are now effective therapies. An increased awareness should lead to earlier diagnosis enabling children to be offered effective treatment in a timely fashion.

**Scientific Presentations****Biological Therapy for Paediatric Inflammatory Bowel Disease: The Scottish Nationwide 'Real Life' Experience**A Jamison<sup>1</sup>, N Basheer<sup>2</sup>, ML Wilson<sup>2</sup>, G Mahdi<sup>3</sup>, D Goudie<sup>4</sup>, RK Russell<sup>1</sup>, DC Wilson<sup>2,5</sup><sup>1</sup>University of Glasgow<sup>2</sup>University of Edinburgh<sup>3</sup>Royal Aberdeen Children's Hospital<sup>4</sup>Raigmore Hospital, Inverness<sup>5</sup>Royal Hospital for Sick Children, Edinburgh

**Background and Aims** - Biologicals are increasingly used for paediatric IBD (PIBD) in the UK, yet the evidence base is limited and safety concerns are rising. Infliximab (IFX; Remicade, Schering-Plough), adalimumab (ADA; Humira, Abbott UK) and natalizumab (NAT; Antegren, Elan) have been used to varying degrees in the treatment of PIBD and so there is a need for safety data for each of these in the paediatric population. We aimed to evaluate the clinical pattern of usage, safety and effectiveness of biologicals (IFX, ADA and NAT) in the treatment of PIBD using a Scottish national framework, via the members of SPGHANG (Scottish Paediatric Gastroenterology, Hepatology and Nutrition Group). **Methods** - A retrospective audit collecting Scottish nationwide usage data for biological agents used to treat PIBD from 1/1/99 to 31/12/08. Inclusion criteria required patients to be < 18 years when commencing a biological agent in a Scottish PIBD centre, and to receive a minimum of four weeks follow-up. Details collected for each patient included prior therapy and surgery. Biological data collected included dosing schedule, dose escalation information and side effects. Response to biological therapy was measured at four or ten weeks (the standard times to assess response to induction dosing with ADA and IFX respectively), six months and twelve months. Subsequent need for maintenance therapy or an alternative biological was also collected. **Results** - 92 children (83 with Crohn's disease [CD], eight with ulcerative colitis [UC] and one with indeterminate colitis [IC]) had first biological treatment at median (IQR) age of 14.2 (12.3-15.7) years for medically refractory or acute severe disease. There were 41 females. The total follow-up from first biological was 174.2 patient years. Fifteen patients (16%, all CD) received multiple biologicals: two received NAT then IFX; twelve received IFX then ADA; one received etanercept (for arthritis prior to CD diagnosis) then ADA. Ninety children (81 CD) had infliximab, with a median (range) of four (1-25) infusions. At response assessment 43 had entered remission, 33 had responded and 14 had no response. Forty-one had maintenance therapy with median (range) 5 (1-19) doses. Eleven of 41 required escalation of therapy. There were no deaths, 34 adverse events with six requiring hospitalisation (SAE) and discontinuation; six had bacterial/fungal sepsis. Fifteen children (all CD) had adalimumab, with a median (range) of 20 (4-38) doses. At response assessment five had entered remission, six responded, and four had no response. All proceeded to maintenance therapy and six required escalation of therapy. None had reactions leading to discontinuation. There were two AE - 1 severe viral illness and one leukopenia/neutropenia, with no hospitalisations and no deaths. Twenty-two of the 92 children (24%) required surgery after first biological (19 CD; 2 UC; 1 IC). **Conclusions** - Biologicals are effective in refractory cases of PIBD although many require dose escalation. Secondary loss of response may occur even with dose escalation. Primary non-response to one biological does not contra-indicate the use of an alternative biological. In 174.2 patient-years follow-up of Scottish PIBD biological therapy a minority had significant adverse events.

## Managing Postnatal Weight Loss in Methadone-Exposed Infants

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**Objective:** Breast feeding is associated with reduced odds of requiring treatment for neonatal abstinence syndrome (NAS)<sup>1</sup>, but may require considerable specialist input. Knowledge of typical weight loss patterns in infants born to drug-misusing mothers would help to guide breast feeding support for this vulnerable group. We present data describing the weight loss profile of newborn infants of women prescribed substitute methadone during pregnancy. **Population:** 354 singleton, term, methadone-exposed infants born in a single maternity unit. **Methods:** Retrospective cohort study 1st January 2004 to 31st December 2006. Infants were weighed at birth and then daily until discharge. Data were extracted from case notes after discharge and stored anonymously on a spreadsheet prior to analysis using Minitab (version 15). Breast feeding was defined as breast feeding  $\geq$  72 hours. **Results:** The median maximum neonatal weight loss was 8.9%. The median prescribed maternal methadone dose at delivery was 46mg/day (range 5-150). At least 77% of women used additional illicit drugs. There was no association between infant weight loss and either maternal methadone dose or polydrug misuse. Considering only non-admitted infants not considered to require pharmacological treatment for NAS (n=165), median weight losses were 10.2% (breast fed) and 8.4% (formula fed) ( $p=0.003$ ). 23% of breast fed infants and 48% of formula fed infants exhibited weight loss in excess of the 95th centile for term newborns described by Macdonald et al.<sup>2</sup> The median weight loss nadir was on day five for both breast and formula fed infants. For the cohort as a whole, weight loss was greater amongst infants who did not receive pharmacological treatment for (NAS) (median 8.8% vs 7.7%,  $p=0.05$ ), but this became insignificant when breast feeding was taken into account. Median age at discharge from the postnatal ward was seven days for both breast and formula fed infants and only 3% had regained their birth weight by this stage. **Conclusions:** Infants exposed to methadone *in-utero* show exaggerated early weight loss and are slow to regain birth weight. Breast feeding is associated with increased weight loss but seems to be protective against development of significant NAS. Greater tolerance of neonatal weight loss may be required and feeding advice for breast feeding mothers should be tailored accordingly.

For references, see [www.smj.org.uk](http://www.smj.org.uk)

## Do We Believe Our Ears? Interpretation of Recorded Respiratory and Cardiac Sounds by Ten Experienced Paediatricians

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**Introduction:** Auscultation is an integral part of clinical examination but is rarely taught objectively. Perhaps as a consequence, the skill of auscultation has declined, with physicians increasingly reliant on technology. However, technology is not always available. Increasing trainee physician exposure to varying normal and abnormal sounds may improve their perception, or listening skill, thereby aiding recognition of normal or abnormal. **Objective:** The study aim was to develop a teaching aid to improve the trainee physician's auscultation skills by recording and validating recorded normal and abnormal cardiac and respiratory sounds for use as an educational tool. **Population and Methods:** Normal cardiac and respiratory sounds were recorded in healthy children. Abnormal cardiac sounds were recorded in attendees at a cardiac clinic where ECHO examination was completed. Abnormal respiratory sounds were recorded from in-patients with respiratory illnesses. Ten experienced paediatricians listened to all sounds "blind", and were asked to identify each sound from a list of pre-determined options. **Results:** Twenty-three sounds were recorded in children aged

between three months and 14 years. There were 12 cardiac and 11 respiratory sounds. Cardiac sounds were collected from four children with ventricular septal defect (VSD), three with pulmonary/aortic stenosis (PS/AS), one with a flow murmur, one with a murmur but no ECHO and three healthy controls. Respiratory sounds were recorded in three cases with wheeze, three "expiratory groan", two "large airway rattle" (LAR) and three healthy controls. The clinicians correctly heard a murmur on 75/90 occasions (sensitivity 83%) but heard a murmur in 21/30 occasions when no murmur was present (specificity 30%). Among cases with a murmur, a VSD was correctly diagnosed on 16/40 occasions (sensitivity 40%, specificity 73%), PS/AS in 9/30 occasions (sensitivity 30%, specificity 76%) and flow murmur on 6/10 occasions (sensitivity 60% specificity 87%). For respiratory sounds there was some agreement on when an abnormal sound was present (sensitivity 67%) and almost uniform agreement on normal sounds (specificity 99%). Among the abnormal respiratory sounds, wheeze was diagnosed on 28/30 occasions (sensitivity 93%, specificity 84%), expiratory groan in 10/30 (sensitivity 33%, specificity 100%) and LAR on 17/20 (sensitivity 85%, specificity 92%). **Conclusion:** There is considerable variation between paediatricians for interpretation of some auscultation sounds when these are listened to in isolation. This has implications for the development of an educational tool. A standardised library of recorded real-life auscultation sounds and standardisation of respiratory sounds may reduce the subjectivity of reported cardiac and respiratory sounds.

## Are non-*Pylori Helicobacter* Organisms Associated with Paediatric Ulcerative Colitis? A Retrospective Observational Study

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**Introduction:** Non-*pylori Helicobacter* organisms were first identified as potential inflammatory bowel disease (IBD) pathogens in an animal model of ulcerative colitis (UC). Recent animal studies have shown that infection with non-*pylori Helicobacter* organisms can reduce commensal bacteria and that an IgG immune response to commensal bacteria precedes the development of colitis after infection with *Helicobacter bilis*<sup>3</sup>. These observations together with the reduced bacterial diversity seen in human IBD suggest a role for non-*pylori Helicobacter* in disease initiation. **Aim:** To examine the prevalence of non-*pylori Helicobacter* organisms in paediatric ulcerative colitis and an appropriate paediatric control group. **Subjects and Methods:** Five years of paediatric colonoscopies in subjects with and without clinical or pathological suspicion of inflammation. Twenty-three UC patients were represented, 22 with rectal and one with a sigmoid biopsy. Seventeen (74%) were *de-novo* presentations. Fifteen control patients with a heterogeneous mix of clinical suspicions/diagnoses had macroscopically and microscopically normal colons, and all patients were free from antibiotics and systemic steroids in the three months prior to biopsy. 52% of the UC group and 60% of the control group were male with respective mean ages of 10.3 years (1.5-14.1) and 9.4 years (1.3-14.3). Slides from each patient were de-waxed with xylene and ethanol before being hybridised with one of two sets of fluorescent probes. The first set utilised *Helicobacter* genus probes which fluoresce with the presence of any *Helicobacter*. The second set utilised both an eubacterial probe which fluoresced with the presence of any bacteria (to exclude false negatives because of destruction of the mucosal layer during paraffin embedding) and a *Helicobacter pylori* specific probe to exclude false positives because of *H. pylori* being transited from the stomach. Each set was examined in triplicate and the slide identities were blinded prior to microscopy. Any positive was interpreted as significant for the purposes of analysis. Of 23 UC biopsies, 23 were eubacteria positive, 21 were H. genus positive and one was *H. pylori* positive. Therefore 20/23 (87%) were non-*pylori Helicobacter* positive. Of 15 control biopsies, 15 were eubacteria positive, 10 were H. genus

positive and four were *H. pylori* positive. Therefore 6/15 (40%) were non-*pylori Helicobacter* positive. Comparing the non-*pylori Helicobacter* positive results with Pearson's exact test reveals a highly significant *p* value of 0.004. **Summary:** The prevalence of non-*pylori Helicobacter* species in the distal colon of children with ulcerative colitis is significantly higher than in control cases selected for a macroscopically and microscopically normal colon. **Conclusion:** We have demonstrated an increased prevalence of non-*pylori Helicobacter* organisms in ulcerative colitis which in the context of previously published animal work suggests a possible role for these organisms in the initiation of human IBD.

### Coeliac Disease Screening in Paediatric Type I Diabetes: Help or Hindrance?

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**Background:** Type I diabetes mellitus (T1DM) and coeliac disease (CD) share a common genetic background and their association is well established. NICE guidelines recommend screening at T1DM diagnosis but this raises practical and ethical issues. There is little information on the optimal timing of screening, glycaemic control at follow-up, and the effect of a second diagnosis on families. **Aims:** To ascertain the prevalence of CD in paediatric T1DM patients and to describe the diagnostic process, clinical features, blood parameters, and impact on glycaemic control and quality of life. **Methods:** Paediatric T1DM patients diagnosed with CD in SE Scotland between 1995 and 2007 were identified. A retrospective search of case-notes was performed to obtain clinical information. Each family also received a postal questionnaire to determine their understanding of CD and opinions on the diagnosis, including positive and negative effects on daily living and quality of life. **Results:** Of 723 children (<15yrs) with T1DM, 30 had CD, an incidence of 4.1%. Two further patients moved to the region shortly after CD diagnosis and were included in the remaining analyses. Male to female ratio was 1.1:1. Median (IQR) age at T1DM diagnosis and time to CD diagnosis were 5.9 (4.1-9.7) years and 1.9 (0.4-2.5) years respectively. Median time between first positive test and endoscopy was 9.4 weeks (IQR 7.4-18.9); two patients declined confirmative endoscopy. From the case-note review 22 patients were symptomatic at diagnosis, mostly abdominal pain and/or change in stooling; only one patient was symptomatic at one year post-CD diagnosis. Twenty-nine commenced a gluten-free diet (GFD); adherence to the diet was generally good. In those with a CD diagnosis >1yr from T1DM diagnosis there were no significant differences in the mean change in HbA<sub>1c</sub> or total insulin at 1yr either on or off a GFD (*p*=0.548; *p*=0.754 respectively). Two had raised TSH (one confirmed hypothyroid); two others had reduced free T<sub>4</sub>. Two had low ferritin at CD diagnosis. All children had statistically significant increases in height/weight Z-score one year after CD diagnosis (*p*<0.0001). The questionnaire was returned by 15 of 32 families: 56% recognised that their child had been suffering suggestive CD symptoms for up to a year. All those with symptoms now felt symptom-free, but 3/15 reported worse control of their diabetes. **Conclusion:** Incidence of CD in T1DM in SE Scotland is 4.1%. 71% had symptoms at diagnosis suggestive of CD. Most children developed CD within 2.5 years of T1DM. There was no significant difference in diabetic control in those on or off GFD at 1 year. Practice has changed: testing now occurs at 6 month follow up (unless symptoms exist at T1DM diagnosis). Verbal and written information is always given prior to testing. Several asymptomatic patients decided to 'watch and wait' and remain on normal diet. Most returning the questionnaire felt that CD diagnosis made a positive impact on aspects of health but significant negative aspects existed. We suspect that more 'negative' issues exist for non-responders, as a dual diagnosis is difficult for many families to manage, despite support offered.

### Audit of Outcome for Extremely Preterm Infants Born in Glasgow 1/01/98 – 31/12/02.

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**Objective:** To evaluate the outcome for all infants born alive before 26 weeks gestation in Glasgow during the period 1/01/98 to 31/12/02. **Methodology:** Hospital birth record and case-note review. Factors potentially associated with survival were analysed univariately using chi-squared tests. Logistic regression analysis was then used to determine independent predictors of survival. All analyses were performed using Minitab (version 15) with a significance level of 5%. **Results:** 133 liveborn infants were identified. Three infants were born alive at <23 weeks gestation, none of whom survived beyond the first day and survival status for one infant born at 25 weeks gestation in hospital B could not be identified: these four infants were therefore excluded from subsequent analysis. There was no association between survival and either gender, mode of delivery, multiple delivery or most senior person present at delivery. Birth weight (*p*<0.001), antenatal steroid administration (*p*=0.04), and CRIB score (*p*=0.016) were associated with survival. In multivariate analysis only birth weight (*p*<0.001; OR 1.01; 95% CI 1.00, 1.01) and administration of antenatal steroids (*p*=0.058; OR 7.74; 95% CI 0.93, 64.15) were associated with increased survival. There were differences between the three maternity hospitals with regard to survival to discharge, which were not explained by differences in birth weights. **Conclusion:** Survival rates for extremely preterm infants born alive in Glasgow during the period 1/01/98 to 31/12/02 tended to be lower than national rates of survival 3 years previously, and varied between the three maternity units. Re-audit is planned to examine whether these figures have changed over the ensuing 10 years.

For references, see [www.smj.org.uk](http://www.smj.org.uk)