Poster Viewing I

Paediatric and Adolescent Rheumatology

83. REDUCING GP ATTENDANCE IN PATIENTS WITH FIBROMYALGIA

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Background: Patients with fibromyalgia are frequent users of health care provision in both primary and secondary health care settings. In 2004 a retrospective audit of 60 consecutive patients with fibromyalgia, identified a reduction in the utilisation of hospital based services following attendance at a consultant nurse led pain clinic. We wondered if this reduction in secondary health provision had led to an increase in primary care attendance. The aim of this audit was to identify whether the number of general practitioner appointments for symptoms relating to fibromyalgia, in this same cohort, had changed in the 12 month period before and after attendance at the nurse consultant led pain clinic.
Methods: The 60 patients were attending 23 GP practices within North Staffordshire. The GP practices were contacted and granted access for a clinical auditor to review patients' records to determine the number of attendances for fibromyalgia related symptoms. For each GP visit the main reason for attendance was noted and grouped into one of the following categories; musculoskeletal pain, mood and somatisation involving other organ systems including chest pain.
Results: The sample consisted of 57 women and 3 men, mean age of 41 years (range 29–71). Forty two patients were married and 22 were in employment. 49/60 (82%) patients' GP records was reviewed. 11/60 patients' records were not included due to having left the practice (4) or having no retrievable information from the records for the dates required (7).

Over the 2 year period of data collection, 49 patients had a total of 295 consultations with a GP. One hundred and ninety six (66%) consultations were in the 12 months prior to the date of the nurse led pain clinic and 99 (33%) occurred in the 12 months after clinic attendance.

38/49 (78%) patients reduced their visits to their GP for the 12 months following pain clinic attendance, 8 patients (6%) increased their visits and 3 (6%) patients' consultation habits remained unchanged.

The main areas where a reduction in consultation had occurred were pain, where 57.2% fewer attendances occurred, and mood with 56.5% fewer attendances recorded. Not surprisingly the impact of the pain clinic upon non musculoskeletal symptoms was less marked with a reduction of just 22%.
Conclusions: A designated community based service for patients with fibromyalgia can reduce the utilisation of both primary and secondary care services.
Disclosure: The authors have declared no conflicts of interest.

84. JUVENILE IDIOPATHIC ARTHRITIS: SYNOVIAL PREDICTORS OF OUTCOME

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Background: Juvenile idiopathic arthritis runs an unpredictable course. Children with oligoarticular disease may respond well to intra-articular steroids or have recurrent episodes of synovitis. Children with polyarticular disease may respond to Methotrexate or require steroids and/or biologics. Currently there are no reliable predictors of outcome in early disease, which leads to sub-optimal treatment.
Methods: We are currently undertaking a five-year prospective study of children with newly diagnosed and untreated JIA. All have knee involvement. At outset, we obtain synovial biopsies ($N = 5$) under ultrasound guidance. We then record detailed clinical, functional, radiological and laboratory data every 3/12 for two years. We are correlating outcomes at one and two years with synovial findings recorded at outset. Here we report on those children whom to date we have followed for one year.
Results: Of the first 30 children, 18 had oligoarticular disease. Their disease activity score fell from a mean of 3.54 to 1.12 at one year. Ten had a single episode of swelling of the index joint while eight had 2 or more episodes.

Twelve had polyarticular disease. All but two were improved at one year. The mean ESR fell from 44 to 13, and CRP from 33 to 5. Haemoglobin rose from a mean of 10.6 mg/dl to 12.5 mg/dl. The CHAQ improved in all but two.

We found significantly more synovial pathology in the poly compared with oligo patients, with mean vessel score 6.9 vs. 2.6 ($p < 0.05$) and mean B-cell score 1.7 vs. 1.0 ($p < 0.05$).

On average, the oligo and polyarticular groups shared a similar degree of synovial hyperplasia and a comparable macrophage distribution. The CD3+ cells (mean 1.7 (0.8–2.7)) were predominately CD4+ (mean 1.7 (0.7–2.6)) and distributed mainly within the sub-lining layer (SLL).

However, we observed significant differences between patients within clinical subgroups.
Conclusions: Almost 50% of oligoarticular patients had recurrent knee swelling, despite treatment. And while the majority of poly JIA responded to Methotrexate, a significant minority still required steroids or were already on biologics at one year. Infiltrates varied widely between patients; and we predict that synovial pathology, particularly vascularity and B-cell infiltrates, will correlate with a poor outcome and inadequate response to treatment.

We will therefore analyse whether synovial findings can predict outcome for each patient.
Disclosure: The authors have declared no conflicts of interest.

85. THE USE OF DIFFERENT ELISA KITS TO DETERMINE PREVALENCE OF ANTI-CYCLIC CITRULLINATED PEPTIDE (ANTI-CCP) ANTIBODIES IN CHILDREN WITH JUVENILE IDIOPATHIC ARTHRITIS (JIA)

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Background: There is controversy regarding the frequency of anti-CCP antibody positivity in JIA. Previous studies have shown variability of anti-CCP antibody prevalence according to JIA subtype, with Rheumatoid factor positive patients having a higher prevalence. It is generally accepted that routine testing of JIA patients for diagnostic or prognostic purposes holds little value. However, one study using a synthetic peptide as an antigen showed the prevalence of anti-CCP in JIA to be significantly greater (77% positivity reported in 51/66 JIA). The aim of this study is to assess anti-CCP positivity in children with JIA using the synthetic peptide and two commercial ELISA kits (CCP2, CCP3).
Methods: Serum samples were collected from JIA patients in a paediatric rheumatology out-patient setting ($n = 43$) and non-JIA juvenile controls ($n = 26$). IgG anti-CCP was measured using ELISA technique on a synthetic peptide (cfc-1-cyc Invitrogen), commercial anti-CCP2 (Axis-Shield) and CCP3 (Inova).
Results: The positivity rate using the synthetic peptide (14%) was comparable to the commercial kits (CCP2 16%) or (CCP3 12%). Combining all three assays resulted in an overall positivity of 23%. Only 2 samples tested positive in all three assays. Generally, polyarticular JIA patients showed a higher prevalence of anti-CCP. Using the CCP2 kit, 4 out of 16 polyarticular JIA patients (25%) and 1 out of 19 oligoarticular JIA patients (5%) tested positive. Using a combination of the assays, none of the 26 non-JIA controls tested positive.
Conclusions: Our study confirms the presence of Anti-CCP antibodies in JIA patients. Although the overall prevalence is low, it is slightly higher than reported in recent studies. In concordance with previous studies, polyarticular disease tends to yield the highest positivity rate among the JIA subtypes. The presence of positive controls may be due to patient selection.

We did not find an increase in the detection rate of anti-CCP with the synthetic peptide compared to the commercial kits. The finding of only two JIAs testing positive for anti-CCP in all three kits highlighted the variability between them.

Whether a JIA patient is anti-CCP antibody positive or not depends on the assay used. Therefore it seems that no single kit will detect all anti-CCP antibodies in JIA patients who are positive. The implication here is that in JIA there may be more antigenic diversity in the anti-CCP response compared to adult Rheumatoid Arthritis. This suggests that to increase the detection rate, either assay kits can be used in combination, or a more appropriate antigen developed.
Disclosure: The authors have declared no conflicts of interest.

86. SYNOVIAL FLUID T CELLS ARE RESISTANT TO rAd BASED SUPPRESSION OF PROLIFERATION

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Background: Juvenile Idiopathic Arthritis (JIA) is the most common rheumatic disease in children. There are various subtypes of JIA, with major differences in both severity and outcome. Both T cells and Dendritic Cells (DC) are key cell types contributing to the pathology of JIA. We have found CD4+CD25+ regulatory T cells (Treg) in the synovial fluid (SF) of children with JIA, and DC in a semi-mature state in SF. Using a method previously developed in our laboratory to generate tolerogenic dendritic cells from healthy PBMC, we have adapted it to generate tolerogenic dendritic cells from synovial cells of children with arthritis and we have investigated the ability of T cells from the joint to be suppressed.
Methods: Human monocyte derived DC grown from SF from children with JIA, were infected with replication deficient adenoviral (rAd) constructs (E1-E3-deleted) and then matured. CFSE- labelled T cells were cultured with either autologous DC (adenoviral infected or control) and stimulated with PHA, or were seeded with allogeneic DC. T cell proliferation was measured by CFSE dilution using flow cytometry.