with SF leucocyte counts. Although levels of ICAM-1 appeared to be higher in SF than in serum the difference was not significant.

Conclusion High concentrations of soluble ICAM-1 and E-selectin in JIA patients with polyarthritis are reported here for the first time. Bloom¹ and de Benedetti² found increased ICAM-1 and E-selectin levels only in systemic JIA. In our patients only 3 had systemic onset disease, none showed signs of vasculitis or infection. Our finding of correlation of both molecule levels with joint count supports the hypothesis of synovial EC origin of these molecules. It brings interesting insight in suspected disease pathogenesis in terms of endothelial activation, leucocyte migration and angiogenesis. ICAM-1 and E-selectin could be a marker of aggressive disease, but their predictive value needs to be further studied.

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OP0092 EFFECTS OF CALCITONIN AND CALCIUM TREATMENT ON BONE MINERAL DENSITY IN PATIENTS WITH JUVENILE CHRONIC ARTHRITIS

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Background Osteoporosis is one of the most important and common complications in children with Juvenile Chronic Arthritis (JCA). Osteoporosis in JCA has a multifactorial origin. Reduced or absent physical activity, decreased production of endogenous vitamin D, anaemia and drug treatment, especially steroid treatment are thought to be possible mechanisms of osteoporosis in children with JCA.

Objectives The aim of this study was to evaluate the effect of calcitonin and calcium treatment on bone mineral status in patients with JCA.

Methods According to EULAR criteria 16 patients (7 male, 9 female) with JCA (2 patients with systemic, 2 patients with oligoarticular and 12 patients with polyarticular type) and 13 age and sex similar healthy controls (8 male, 5 female) were included in the study. The mean age of the patients and control groups were $10,12 \pm 3,80$ and $10,2 \pm 3,26$ years respectively. Patients with JCA were randomly treated for 6 months with either 50 IU/day salmon calcitonin administered intranasal and 500 mg calcium per day per oral (Group 1) or 500 mg/day calcium only (Group 2) to determine their effect on bone status. Bone mineral density (BMD) of the lumbar spine at the L1-L4 level was measured by dual energy x-ray absorptiometry (Hologic QDR-4500 A). Disease activity was determined by clinical and laboratory evaluation (serum erythrocyte sedimentation rate and C reactive protein levels), and Juvenile Arthritis Functional Assessment Report (JAFAR). Data from BMD measurements were obtained at baseline and 6 months later.

Results The mean age and the duration of disease for groups 1&2 were $9,4 \pm 4,31$ years and $41,10 \pm 42,29$ months and $11,33 \pm 2,65$ years and $40,66 \pm 33,31$ months respectively. The mean baseline BMD results were 0.458 ± 0.157 gr/cm² in Group 1, 0.580 ± 0.137 gr/cm² in Group 2 and 0.599 ± 0.096

gr/cm² in control group. BMD values of the JCA group were significantly lower than the control group ($p = 0,038$). In both treatment groups (Group 1 and Group 2) there were an increase in BMD values ($p_1 = 0,05$ and $p_2 = 0,028$ respectively). As the increments were compared the difference in between was not statistically significant ($p > 0.05$).

Conclusion Our results suggest that children with JCA would benefit from calcium supplementation and calcitonin treatment. No adverse effects were observed in both treatment groups during the follow-up period.

OP0094 STEADY-STATE PLASMA CONCENTRATIONS OF ROFECOXIB IN CHILDREN WITH JUVENILE RHEUMATOID ARTHRITIS

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Background

Objectives To compare the steady-state AUC(0–24 h) of rofecoxib, dosed @ approx 0.32 mg/kg/day in children aged 2 to 17 years vs. adult historical controls who received one 25-mg tablet daily (mean weight of 77.7 kg, corresponding to ~0.32 mg/kg/day).

Methods Two trials were performed. In one, adolescent JRA patients (12 to 17 years) received 12.5 mg or 25 mg tablets to approximate 0.32 mg/kg/day. In another, JRA patients aged 2–11 years received rofecoxib 2.5 mg/ml suspension to approx. 0.32 mg/kg/day. Both formulations have equivalent bioavailability. All patients received once-daily rofecoxib for at least 8 days (to presumptive steady state) then trough and post-dose blood samples were obtained for up to 24 h. To minimise the number of blood samples for 2–5 year-olds, 2 sampling schedules with different time points were used. Comparison to adult historical controls was made by calculating AUC(0–24 hr) geometric mean ratio (GMR) with corresponding 90% confidence intervals (CI) for specific paediatric age groups: 12–17 yrs; 6–11 yrs; and 2–5 yrs; relative to adult controls. Similar comparisons were made for C_{max}. Summary statistics for AUC(0–24 hr) were calculated for each treatment (12.5 mg or 25 mg Rofecoxib) in patients 12–17 years.

Results See Table 1. 12–17 yr-old patients taking 12.5 mg or 25 mg rofecoxib showed similar exposure to adult controls receiving the same dose. Rofecoxib was generally well-tolerated in all patients and age ranges studied.

Abstract OP0094 Table 1

	Paediatric	Groups	Versus Adult	Historical	Controls
	AUC (0–24 hr)	ng-hr/mL		C _{max}	ng/mL
	Geometric Mean	GMR (90% CI)		Geometric Mean	GMR (90% CI)
2–5 year-olds	2581	0.57 (0.48, 0.73)		204	0.58 (0.45, 0.74)
6–11 year-olds	2885	0.64 (0.54, 0.74)		208	0.57 (0.48, 0.67)

12–17 year-olds	3171	0.70 (0.57, 0.86)	241	0.67 (0.54, 0.83)
Adult Controls	4543	-	361	-

Conclusion Based on these results, children aged 2–11 yrs require a higher mg/kg/day dose of rofecoxib for similar steady-state systemic exposure to adult historical controls receiving 25 mg. Assuming linear dose proportionality, a dose of ~0.6 mg/kg/day in children aged 2–11 yrs, should approximate the exposure of 25 mg in adults and adolescents aged 12–17 yrs showed similar systemic exposure to adults taking identical doses of rofecoxib.

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OP0095 THERAPEUTIC EFFICACY OF MULTIPLE INTRAVENOUS INFUSIONS OF ANTI-TUMOUR NECROSIS FACTOR-ALFA MONOCLONAL ANTIBODY (INFLIXIMAB) IN PERSISTENTLY ACTIVE REFRACTORY JUVENILE IDIOPATHIC (CHRONIC) ARTHRITIS. AN ONE YEAR OPEN PROSPECTIVE PILOT STUDY

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Background

Objectives An open prospective trial was carried out in a young population affected by severe, refractory, polyarthritic JIA to evaluate the efficacy and safety of Infliximab (Remicade).

Methods We enrolled 17 females, median age at the start of the therapy 22.9 yrs (8–33), median onset age 3 yrs (1–16), median disease duration 15.6 yrs (5–31). All patients had been previously treated with more than one DMARD (median number 3.5/patient, as mono or combined therapy). All patients had still active disease: number of active joints (median 5.5), ESR (median 59.5 mm/hr), CRP (median 4.7 mg/dl), physician global evaluation (median VAS 45.5), HAQ (median D. I. 1.13). 14 patients were still on corticosteroids (median 0.11 mg/kg). All patients discontinued any other DMARD aside from s.c. MTX (median weekly dose 15 mg, range 5–25) and continued with previous NSAIDs and corticosteroids. Infliximab was administered as a single infusion of 3 mg/kg at time 0 and at weeks 2, 6, 14, 22, 30.

Results Until now all 17 pts have received the first 2 infusions, 15 pts 3 infusions, 9 pts 6 infusions, 8 pts 7 infusions, 2 pts 8 infusions and 1 pt 10 infusions. One patient withdrew because of a severe adverse event (hypersensitivity reaction at the third infusion). Since the 1st infusion, all 17 patients achieved a very good response (50% reduction in number of active joints, ESR, CRP, VAS). A statistically significant improvement of the following parameters was observed at the 6th infusion assessment (evaluation on 9 patients who completed 30 weeks = 5 months of therapy): the median number of active joints decreased from 5 to 0; ESR decreased from a median of 65 to 23 mm/hr and CRP decreased from a median of 4.6 to 0.4 mg/dl; the median score of the VAS (physician global evaluation) decreased from a 65 to 2. Furthermore after 6 months of therapy we observed a trend to improvement in all scales of SF36 (assessment of the quality of life). An eleven-year-old girl with chronic active uveitis showed a great improvement of the visus.

Conclusion These data suggest that Infliximab can significantly and promptly reduce disease activity and improve the quality of life of patients affected by persistently active and refractory JIA. However more data are needed to evaluate its efficacy and safety as a long-term therapy.

OP0099 MOOD AND STRESSFUL EVENTS PREDICT DAILY FLUCTUATIONS IN DISEASE SYMPTOMS IN JUVENILE POLYARTICULAR ARTHRITIS

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Background Juvenile arthritis is characterised by periods of flare and relative quiescence. Periods of flare are characterised by increased disease activity and worsening symptoms. While the cause of disease flares is unclear, multiple possible triggers have been proposed including infection, trauma, psychosocial stress, and mood.

Objectives The purpose of this study was to examine the relationship of daily mood and daily stressful events to disease symptoms in children with rheumatic disease.

Methods Twenty-four school-aged children (15 girls, 9 boys, mean age 12.4 years) with polyarticular arthritis completed a daily booklet over a two-month period, yielding 1355 total observations. The daily booklet included measures of daily symptoms, function, mood, and stressful events. In addition, we obtained biological measures of disease activity, as well as salivary cortisol levels three times daily. Data were analysed using multi-level random effects modelling in order to take into account both sources of variation in the data set, within-person and between-person. In addition, multilevel models use the number of observations or days rather than the number of participants as the unit of analysis, thus increasing the statistical power.

Results The models indicated that on a day-to-day basis, worse mood and more stressful events were significantly related to increases in daily pain ($p < .0001$ and $p < .02$), fatigue ($p < .0001$ and $p < .02$), and increased interference in social activities ($p < .0001$ and $p < .001$). Worse mood was also related to increases in daily stiffness ($p < .0001$) and to coping, including the ability to control ($p < .0001$) and decrease pain ($p < .0001$).

Conclusion Our data show that day to day fluctuations in mood and stressful events are related to the daily symptoms of children with juvenile polyarticular arthritis and may play a role in the pathogenesis of disease flares. Therefore, interventions aimed at improving mood and stress coping may improve the health status of children with arthritis.

SAT0106 ANTI-TNF-ALPHA THERAPY FOR SYSTEMIC JUVENILE IDIOPATHIC ARTHRITIS WITH POLYARTHRITIS

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Background TNF- α antagonism with anti-TNF- α MoAb (Infliximab, Centocor, USA) or soluble TNF- α receptors (Etanercept, Immunex, USA), has emerged as a promising therapeutic tool for refractory chronic arthritis. Both drugs are now licensed for