8 RA and 8 OA patients undergoing hip replacement surgery, were utilised for gene-expression profiling by Affymetrix HG-U133Plus arrays. The BioRets database was used for microarray analyses and generation of RA profiles.

Results Transcriptome analyses of synovial tissues from RA and OA patients revealed more than 1000 differentially expressed genes. Increased expression of genes involved in chemotaxis (CCL13, CCL18, CXCL9, CXCL10, CXCL13), cell adhesion and activation (ICAM1, PECAM1, ITGAL, ITGB2, CD40, CD86) indicate to inflammation but also to infiltration of various cell types like monocytes/macrophages, NK, T- and B-cells.

By comparing transcriptome of RA and OA monocytes, both from blood and bone marrow, it was obvious that monocytes were able to disclose differences between these two diseases. The RA disease-specific gene-expression profile was evident both in blood and bone marrow and it demonstrated only a minor overlap between these two bodies compartments. Altogether, a typical RA inflammatory profile disclosed in synovial tissues was greatly silenced in blood monocytes, and almost completely absent in bone marrow derived monocytes.

Conclusions The RA gene-expression profile was the most specific and robust in synovial tissue, demonstrating the dominance of the inflammatory process in the joints. Nevertheless, the systemic nature of RA was also evident at the level of blood and bone marrow monocytes. Concerning that blood is a favourable and easily accessible material for diagnosis and that monocytes are able to exhibit disease-specific alterations, understanding monocyte response in different rheumatic diseases seems to be advantageous approach for biomarkers discovery. This approach should be essential for identifying the objective criteria relevant for disease and therapeutic stratification of patients with RA.

A10.7 DUAL EFFECTS OF SOLUBLE FASL AND MEMBRANE BOUND FASL ON FIBROBLAST-LIKE SYNOVIOCYTES CELLS (FLS) FROM RHEUMATOID ARTHRITIS (RA) PATIENTS

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Background Membrane-bound FasL (mFasL) is able to induce fibroblast-like synoviocytes (FLS) apoptosis. In experimental arthritis mouse models, injection of agonistic antibody (Ab) anti-Fas decreased the symptoms. However, soluble FasL (sFasL) is increased in Rheumatoid Arthritis (RA) patients and correlated with disease activity. These results indicated that mFasL could be protective whereas sFasL could be deleterious suggesting that they could have different functions.

We analysed the effect of different FasL preparations mimicking sFasL or mFasL on RAFLS proliferation and apoptosis.

Methods RAFLS were treated with different FasL preparations (FasL-Flag ± Ab α-Flag, FasL-Fc or sFasL) or with agonistic Ab anti-Fas. Apoptosis was then analysed by cytometry using annexinV-FITC and TOPRO-3. Proliferation was measured using tritiated thymidine. Signaling pathways was analysed by western blot and their influence was assessed using chemical inhibitors. sFasL was quantified in synovial fluids from patients using cytometric bead array.

Results FasL-Flag alone (mimicking sFasL) was not able to induced FLS apoptosis while proliferation was significantly activated (3.3 ± 1 fold; $n = 5$; $p < 0.05$). Similarly, sFasL was only able to strongly induce RAFLS proliferation (7 ± 5.5 fold, $n = 9$ $p < 0.05$). Membrane bound FasL (FasL-Flag + Ab α-Flag) significantly induced RAFLS apoptosis ($52\% \pm 18$; $n = 5$) and a slighter but significant proliferation (2.2 ± 0.3 fold; $n = 4$). Duality of mFasL was confirmed using

agonistic Ab anti-Fas (mimicking mFasL) with pro-apoptotic ($38\% \pm 18$; $n = 2$) and proliferative effect (4.4 ± 2.0 fold). Finally, growing concentration of FasL-Fc leads to aggregation of the protein, mimicking mFas or sFasL at high and low concentration respectively. Dose responses confirmed mFasL and sFasL effects. FasL activated Akt, JNK and ERK but also activated caspases ($n = 5$). Inhibition of each pathways block FasL-induced proliferation. However, only JNK inhibition significantly increased FasL-induced apoptosis. We observed that FasL-Fc was able to induce osteoarthritis (OA) FLS apoptosis but neither FasL-Fc nor sFasL was able to significantly induced proliferation of OAFLS (1.4 ± 1.3 and 2.6 ± 1.1 fold respectively, $n = 4$). Synovial fluids from patients with RA ($n = 16$) tends had higher sFasL concentrations compared to those with osteoarthritis ($n = 10$) ($p = 0.06$).

Conclusions mFasL induces preferentially RAFLS apoptosis, whereas sFasL only induces RAFLS proliferation. Proliferative effect of sFasL was not seen on OAFLS. According to what we have already described for TRAIL, caspases are involved in FasL-induced apoptosis and proliferation. This is the first demonstration that sFasL and mFasL have different effects on RAFLS proliferation. sFasL by enhancing RAFLS proliferation could have a deleterious role in RA. Therefore, its blockage could be a therapeutic tool to prevent RA.

A10.8 EVALUATION OF DISEASE ACTIVITY IN ADULT PATIENTS WITH JUVENILE IDIOPATHIC ARTHRITIS

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Background Juvenile idiopathic arthritis (JIA) is a disease which maintains specific childish rheumatological features during whole life. There is still an open discussion which criteria of the disease activity should be used for the management of adult patients with JIA.

Objectives To analyse the usefulness of known disease activity and functional indices used in adult rheumatological practise for the assessment of rheumatoid arthritis (RA) and spondyloarthritis (SpA): disease activity score (DAS), disease activity score 28 (DAS28), Bath Ankylosing Spondylitis Disease Activity Index (BASDAI), Bath Spondylitis Functional Index (BASFI), Health Assessment Questionnaire – disability index (HAQ-DI), short form health survey with 36 questions (SF-36).

Methods 35 adult patients with JIA (polyarticular form) classified by the ILAR (International League of Associations for Rheumatology) classification criteria (Durban 1997, Edmonton 2001) were assessed clinically initially (I) and after 1 year (II) using DAS, DAS28, BASDAI, BASFI, HAQ-DI, SF-36.

Results 35 adult patients with JIA (polyarticular form) 19.4 (SD 1.8) years old with disease duration 6.5 (SD 4.2). 16 patients receive anti-TNF therapy and 19 patients methotrexate monotherapy. DAS 28 (I) 3.10 (IQR = 2.2) and DAS28 (II) 3.09 (IQR = 1.7), $p = 0.3$; DAS (I) 2.09 (IQR = 1.6) and DAS (II) 2.03 (IQR = 1), $p = 0.39$; HAQ-DI (I) 0.44 (IQR = 0.57) and HAQ-DI (II) (IQR = 0.62), $p = 0.32$; BASDAI (I) 3.6 (IQR = 3.45) and BASDAI (II) 4.75 (IQR = 3.275), $p = 0.46$; BASFI (I) 1.9 (3.15) and BASFI (II) 1.1 (IQR = 1.2), $p = 0.057$; SF-36 physical health (I) 40.4 (IQR = 9.5) and SF-36 physical health (II) 38.7 (IQR = 11), $p = 0.02$; SF-36 mental health (I) 50.1 (IQR = 27) and SF-36 mental health (II) 50.9 (IQR = 14.2), $p = 0.6$.

Conclusions Accordingly to the results, increased values of disease activity indices (usually used in adults patients with RA and SpA) show that tendons as well as peripheral joints are involved in the inflammatory process of JIA polyarticular form. Therefore the evaluation of tendons/enthese in adult patients with JIA polyarticular