IMPACT OF A NURSE-LED PROGRAM OF PATIENT SELF-ASSESSMENT AND SELF-MANAGEMENT AXIAL SPONDYLOARTHRITIS: RESULTS OF A PROSPECTIVE, MULTICENTRE, RANDOMISED, CONTROLLED TRIAL (CORDSPA)


Background: Nurses should promote self-assessment and self-management skills in order that patients might achieve a greater self efficacy and improvement in patients with axSpA.

Objectives: To evaluate the impact of a nurse-led program of self-management/-assessment for disease activity program in axSpA.

Methods: Prospective, randomised, controlled, open, 12 month trial (NCT02374749). Participants: 1/Patients: consecutive Axial SpA patients (according to rheumatologist) attending a clinic of the participating centres were invited to participate. All patients gave written informed consent, the treatment was allocated randomly via an electronic system. Outcome variables: Primary: The level of coping (0–10, where 0=very well) after 12 months. Other variables: Successful smoking cessation, NSAID intake, Number of home-based or office-based exercises, followed by a discussion with the nurse; b) physical examination by the nurse to check for the presence of spinal deformities; c) discussion with the nurse. Explanation by the nurse of the calculation of BASDAI and ASDAS Treatment allocation: after written informed consent, the treatment was allocated randomly via an electronic system.

Results: Baseline characteristics of the 502 recruited patients (250 and 252 in the active and control groups, respectively): Age: 46.7±12.2 years, male gender: 62.7%, disease duration: 13.7±11.0 y, Xray sacroiliitis 62.8%, MRI sacroiliitis 65.7%, current biologic treatment: 78.3%, ASDAS-CRP: 1.9±0.8, BASFI: 25.6 ±22.3. After 1 year, coping levels were lower in the active group, but not significant (0.4±26.9, p=0.03) and duration (4.3±20.1 vs 1.7±20.2, p=0.01) of the home-exercises in the active group, and a greater IPAC score in the active group at the end of follow-up (138.4±227 vs 95.6±223, p=0.02).

Conclusions: This study highly suggests a short-term benefit of a nurse led program on the self-management and self-assessment for disease activity in a young axSpA population in particular with regard to the frequency and the duration of home exercises.

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Fires and firefighters: switching the immune system on and off.

JOINT-SPECIFIC DIFFERENCES IN THE ACTIVATION OF THE JAK-STAT PATHWAY IN RHEUMATOID ARTHRITIS

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Background: Synovial fibroblasts (SF) promote chronic joint inflammation and joint destruction in rheumatoid arthritis (RA). We have shown recently that SF from different joints exhibit profound differences in their transcriptomes, epigenomes and functions, which creates a unique microenvironment in each joint. This may influence the susceptibility of distinct joints to develop RA or lead to joint-specific differences in the disease severity or therapeutic response.

Objectives: To analyse differences in the JAK-STAT pathway in SF from different joints.

Methods: SF were isolated from knee, shoulder and hand joints of RA and osteoarthritis patients undergoing joint replacement surgery and from knee synovial biopsies of non-arthritic subjects with arthralgia. Transcriptomes and epigenomes of SF were determined by RNA-seq. Immunohistochemistry (IHC) and immunofluorescence analysis (IF) were performed. The amount of STATs and phosphorylated STATs was determined by Western blot with normalisation to a- tubulin.

Results: The JAK-STAT pathway was enriched in knee SF versus hand and shoulder SF (FDR<0.05). Jak1 (normalised reads – mean ±SD: 10673±2084) and STAT1 (15522±2678) were the top expressed Janus kinase and STAT mRNAs in SF, respectively, whereas expression of Jak3 (40±26) and STAT4 (164±91) mRNAs was low. Looking into joint-specific differences, STAT1 mRNA was higher in knee SF and shoulder SF compared with hand SF (p<0.05, FDR<0.05). Accordingly, STAT1 protein was increased in knee SF (STAT1/1- tubulin ratio: 0.83±0.02, p=0.02, n=4) and shoulder SF (1.0±0.02, p=0.001, n=5) versus hand SF (0.57±0.02, n=3). Jak1, STAT2 and STAT5B mRNAs were higher in knee compared with hand SF (p<0.05, FDR<0.05) and STAT2 and STAT6 mRNAs were higher in knee versus shoulder SF (p<0.05, FDR<0.05). TYK2 mRNA was higher in knee SF compared with shoulder and knee SF (p<0.05, FDR<0.05). SF from different joints exhibited comparable DNA methylation at the promoters of these genes. Activating histone marks H3K4me3 and/or H3K27ac were enriched at the promoters of Jak1, STAT1, STAT2 and STAT5B in knee versus hand SF. This indicated that the abundance of activating histone marks at gene promoters might shape joint-specific expression of a subset of Janus kinase and STAT genes.

Conclusions: Here we show substantial quantitative and qualitative differences in the JAK-STAT signalling pathway in SF from different joints. Knee SF, in particular, exhibit increased expression of Janus kinase and STAT genes and enhanced JAK-STAT signalling upon stimulation with IL-6/sIL-6R. This suggests that RA in different joints might not be equally sensitive to Janus kinase inhibitors or blockade of IL-6. This has important implications in clinical practice and drug discovery in RA.

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