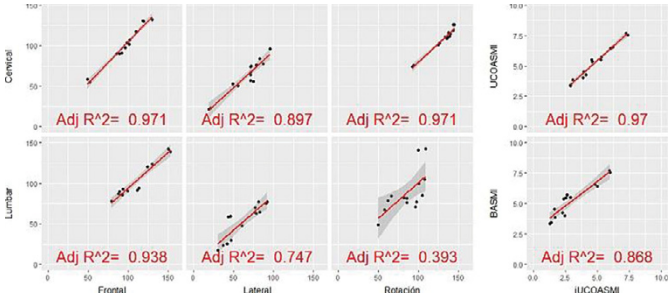
**Abstract OP0238** – Table 1

| | Cervical | | | Lumbar | | | Indexes | | |
|---|---|---|---|---|---|---|---|---|---|
| | Frontal | Lateral | Rotation | Frontal | Lateral | Rotation | iUCOASMI | UCOASMI | BASMI |
| Test | 104.7 (19.7) | 60.9 (17.0) | 111.3 (19.0) | 112.5 (25.6) | 62.5 (18.3) | 89.2 (26.3) | 4.9 (1.2) | 4.7 (1.6) | 2.6 (1.4) |
| Retest | 108.1 (20.9) β | 63.5 (18.7) α | 110.2 (19.0) β | 113.5 (25.3) β | 64.3 (18.5) β | 88.3 (23.0) β | 5.0 (1.3) α | – | – |
| 2 Days | 104.6 (18.9) γ | 62.0 (18.3) α | 111.9 (16.1) γ | 112.5 (25.6) β | 61.7 (18.8) β | 88.9 (23.8) γ | 5.0 (1.2) β | 4.9 (1.5) α | 2.7 (1.4) β |

of the patient. It could be a sensitive, flexible and cheap technology, useful for assessing mobility in AxSpa, but validation studies are needed.
**Objectives:** To assess reliability and validity of inertial sensors for measuring spinal mobility in patients with axSpA.
**Methods:** 14 subjects: 7 patients with axSpA (5 male and 2 female, age 51.4±6.7 years, evolution time 25.4±11.3 years, 85.7% B27 positive) and a control group of 7 healthy individuals matched in gender and age were recruited. Cervical and lumbar movements were evaluated using 3 IMU sensors (located at forehead, D3 and L4) and a 3D motion capture system synchronously. A test/retest was performed at 5 minutes in the same day with the IMUs and in two days with both systems. Measurements of metrology, BASMI and UCOASMI indices were obtained. An index, iUCOASMI, was calculated using the same measurements used for UCOASMI, but obtained by inertial sensors.
**Results:** Table shows mean values (SD) for each range of movement expressed in degrees. BASMI, UCOASMI and iUCOASMI indexes are also included. Intraclass correlation coefficient (ICC) is indicated as α: >0.98 – Excellent, β: 0.95–0.98 – Very good and γ: 0.7–0.95 – Good, δ: <0.7 – Bad. RMSE error was less than 10° for all measures. There was good correlation ($p<0.01$) between iUCOASMI with BASFI, BASG, UCOASMI and BASMI. Graph shows results of linear regression between measures obtained with both system (for example: cervical frontal flexion obtained by motion capture and IMUs have a $R^2$ of 0.97) and between iUCOASMI with UCOASMI and BASMI.




**Conclusions:** The IMU system measured range of movement, showing good ICC both in the same day and in the two days test/retest. The iUCOASMI, has also shown an excellent correlation with UCOASMI, and with BASMI. Therefore, these kind of systems, based on IMU, may be useful for analyzing spinal mobility in patients with axSpA in a more accurate and reliable way compared with conventional metrology, and more flexible and cheap than other advanced systems, improving their practical applicability.
**References:**
[1] Validation of a new objective index to measure spinal mobility: the University of Cordoba Ankylosing Spondylitis Metrology Index (UCOASMI). Garrido-Castro JL, et al. Rheumatol Int. 2014 Mar;34(3):401–6.
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## OP0239 HISTOLOGICAL FEATURES OF JOINT AND COLONIC INFLAMMATION IN INFLAMMATORY BOWEL DISEASE PATIENTS TREATED WITH ANTI-TNF

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**Background:** New onset of joint inflammation in patients under anti-TNF-alpha for inflammatory bowel disease (IBD) has been previously described. However, histological characterization of synovial and bowel compartments has not been reported so far.
**Objectives:** Aim of the study was to evaluate the histological characteristics of paired synovial (ST) and colonic tissues in IBD patients under TNF-alpha blockers.
**Methods:** Consecutive IBD patients without history of co-existing joint involvement who developed peripheral arthritis under TNF-alpha blockers, were prospectively enrolled. Each patient underwent rheumatological evaluation and ultrasound (US) assessment (using Gray scale for synovial hyperthrophy and Power Doppler Signal) of the affected joints. Each patient underwent US guided ST biopsy of the knee, following a standardized procedure[1] and colonoscopy with mucosal biopsies. Each ST and colonic paired sample was stained through immunohistochemistry (IHC) for CD68, CD21, CD20, CD3 and CD117[2]. H&E staining was performed for Paneth cells identification. Clinical and immunological parameters [Anti-citrullinated peptides antibodies (ACPA), IgM-Rheumatoid Factor (RF) and IgA-RF respectively] were collected for each patient.
**Results:** 10 patients with IBD [46.0±9.7 years old, 13.2±9.9 years of disease duration, 2.5±1.6 years of TNF-alpha blockers exposure, 6 with Crohn's Disease and 4 with Ulcerative Colitis respectively] were studied. All patients were negative for ACPA, IgM-RF or IgA-RF and 4 patients were under Methorexate therapy. 5 (50.0%) patients showed endoscopic and histologically proven inflammation of colonic mucosa. Moreover, IHC revealed that 6 (60.0%) patients had diffuse and 4 (40.0%) had follicular synovitis, respectively. In particular, there was a direct correlation between $CD68^+$, $CD21^+$, $CD3^+$, $CD20^+$ and $CD117^+$ cells distribution in paired ST and gut tissues in the whole cohort ($p<0.05$). No significant differences in terms of disease duration (p=0.48), TNF-alpha blockers exposure time (p=0.29), ESR (p=0.26) and CRP (p=0.91) values were found comparing patients with follicular and diffuse synovitis respectively.
**Conclusions:** Our findings suggest that patients with IBD may develop histologically proven synovitis during TNF-alpha treatment, showing similar histological features in terms of $CD68^+$, $CD21^+$, $CD20^+$, $CD3^+$ and $CD117^+$ cells between synovial and colonic compartments. Molecular mechanisms triggered by TNF-alpha blockers leading to joint inflammation have to be clarified.
**References:**
[1] van de Sande MJT et al. Ann Rheum Dis 2011.
[2] Alivernini S. et al. Nat Communications 2016.
**Disclosure of Interest:** None declared
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## OP0240 HOW STRONG ARE THE ASSOCIATIONS OF SPONDYLOARTHRITIS-RELATED COMORBIDITIES WITH ANKYLOSING SPONDYLITIS, PSORIATIC ARTHRITIS AND UNDIFFERENTIATED SPONDYLOARTHRITIS? A REGISTER-BASED STUDY FROM SWEDEN

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**Background:** Spondyloarthritis (SpA), including ankylosing spondylitis (AS), psoriatic arthritis (PsA) and undifferentiated SpA (uSpA), is a cluster of rheumatic diseases with some common genetic risk factors. These genetic risk factors are likely to result in associations of varying degree with SpA-related comorbidities such as inflammatory bowel disease (IBD), psoriasis and anterior uveitis. There

**Abstract OP0240** – Table 1. Prevalence (%) and corresponding Prevalence Ratio (PR) of SpA-related comorbidities in AS, PsA and uSpA

| | AS cases n (%) | PR (95% CI) (AS: GP) | PsA cases n (%) | PR (95% CI) (PsA: GP) | uSpA cases n (%) | PR (95% CI) (uSpA: GP) |
|---|---|---|---|---|---|---|
| *Females, n (%)* | *1217 (31.3)* | | *4772 (54.8)* | | *1503 (56.4)* | |
| *Age, mean ±SD* | *51.1±12.7* | | *53.9±13.5* | | *46.1±12.8* | |
| IBD | 350 (9.0) | 9.3 (7.7–11.2) | 180 (2.1) | 1.9 (1.6–2.3) | 139 (5.2) | 5.2 (4.1–6.6) |
| – Crohn's disease | 170 (4.4) | 11.6 (8.7–15.4) | 78 (0.9) | 2.2 (1.7–2.9) | 62 (2.3) | 6.5 (4.4–9.6) |
| – Ulcerative colitis | 180 (4.6) | 7.8 (6.2–10.0) | 102 (1.2) | 1.8 (1.4–2.3) | 77 (2.9) | 4.4 (3.3–6.1) |
| Anterior uveitis | 819 (21.1) | 44.8 (35.7–56.3) | 145 (1.7) | 3.8 (3.1–4.8) | 351 (13.2) | 32.4 (24.1–43.6) |
| Psoriasis | 85 (2.2) | 2.7 (2.0–3.5) | NA | NA | 78 (2.9) | 3.2 (2.4–4.3) |
| AV block | 39 (1.0) | 5.8 (3.6–9.4) | 30 (0.3) | 1.6 (1.0–2.4) | 13 (0.5) | 4.6 (2.1–10.0) |
| Aortic regurgitation* | 55 (1.4) | 4.7 (3.2–6.9) | 41 (0.5) | 1.7 (1.2–2.4) | 11 (0.4) | 3.0 (1.4–6.4) |

AV, atrioventricular; NA, not applicable. *Aortic regurgitation includes both ICD codes for aortic regurgitation and procedure codes for aortic valve surgery.