**THU0092**

**USING EVIDENCE-BASED RESEARCH TO DESIGN A RANDOMISED TRIAL ON PERIODONTAL TREATMENT FOR INDIVIDUALS WITH RHEUMATOID ARTHRITIS: A SYSTEMATIC REVIEW PUTTING EXISTING RESEARCH INTO CONTEXT**

D. Santos Silva¹, F. Costa², I. Poiares Baptista¹, T. Santiago³, H. Lund³, S. Tarp⁴, J. A. P. Da Silva²,³, R. Christensen⁴,5, Institute of Periodontology, University of Coimbra, Coimbra, Portugal;²Rheumatology Unit, Centro Hospitalar e Universitario de Coimbra, Coimbra, Portugal;³Centre for Evidence-Based Practice, Western Norway University College, Bergen, Norway;⁴Musculoskeletal Statistics Unit, The Parker Institute, Bispebjerg and Frederiksberg Hospital, Copenhagen, Denmark;⁵i.CBR - Coimbra Institute for Clinical and Biomedical Research, Faculty of Medicine, University of Coimbra, Coimbra, Portugal;²Hospital & Research Unit of Rheumatology Department of Clinical Research, University of Southern Denmark, Odense University Hospital, Odense, Denmark

**Background:** It has been suggested that RA is triggered by genetic and environmental factors that lead to a breakdown of immune tolerance at mucosal surfaces (e.g. periodontium) (1, 2). The theory that Periodontitis (PD) affects RA process/development or/and prevent overtreatment. It is urgent to confirm available evidence and knowledge gaps.

**Objectives:** To gauge the evidence of non-surgical periodontal therapy (NSPT) impact upon measures of disease activity and inflammatory burden in individuals with RA and derive recommendations for research needed to address the knowledge gaps.

**Methods:** Based on a prespecified Protocol (CRD42018103359), a search for RA and Periodontitis and controlled or randomised trials was conducted on the 7th April 2019 in PubMed, Cochrane Library (CENTRAL), Embase, ClinicalTrials.gov and WHO ICTRP portal. Two independent reviewers screened titles and abstracts and selected papers were full text reviewed. Outcome domains were consistent using the I² statistic, and combined SMDs using the standard inverse variance random effects for the meta-analyses; fixed-effect meta-analysis was used for the purpose of sensitivity.

**Results:** From 1909 studies identified, 9 reports (5 RCTs, 4 NRSIs) were eligible for inclusion. Based on a prespecified Protocol (CRD42018103359), a search for RA and Periodontitis and controlled or randomised trials was conducted on the 7th April 2019 in PubMed, Cochrane Library (CENTRAL), Embase, Clinical Trials.gov and WHO ICTRP portal. Two independent reviewers screened titles and abstracts and selected papers were full text reviewed. Outcome domains were consistent using the I² statistic, and combined SMDs using the standard inverse variance random effects for the meta-analyses; fixed-effect meta-analysis was used for the purpose of sensitivity.

**Conclusion:** Our results summarise the current evidence on the likely impact of NSPT on RA outcomes. There is an urgent need to assemble a well-designed RCT, or prospective (multicenter) cohorts of RA-PD patients using rigorous protocols, standardized diagnosis criteria, data collection and duration of follow-up.

**References:**


**Disclosure of Interests:** Daniela Santos Silva: None declared, Flavio Costa: None declared, Isabel Poiares Baptista: None declared, Tania Santiago: None declared, Hans Lund: None declared, Simon Tarp: None declared, José Antonio P. da Silva Grant/research support from: Pfizer, Abbvie, Consultant of: Pfizer, AbbVie, Roche, Lilly, Novartis, Robin Christensen: None declared.

**DOI:** 10.1136/annrheumdis-2020-eular.3286

**THU0093**

**EARLY REMISSION IS ASSOCIATED WITH LOWER FATIGUE LEVELS ON THE LONG TERM IN PATIENTS WITH RECENT ONSET RHEUMATOID ARTHRITIS**

D. De Cock¹, A. Nooyens¹, D. Bertrand², V. Stouwen², S. Pazmino¹, J. Joly³, R. Westhovens¹,², P. Verschueren¹,²,¹ Skeletal Biology and Engineering Research Centre, KU Leuven, Leuven, Belgium;²Rheumatology, University Hospitals Leuven, Leuven, Belgium

**Background:** Fatigue is mentioned as a symptom with high impact in many patients with Rheumatoid Arthritis (RA) and this symptom remains difficult to be managed by both the patient and the physician.

**Objectives:** To investigate if rapid suppression of disease activity in early RA could impact fatigue complaints in the long run.

**Methods:** For this study, we included patients from the 2-year pragmatic investigator-initiated Care in Early Rheumatoid Arthritis (CareRA) trial. Most patients were treated intensively, with different combinations of csDMARDs and glucocorticoid remission induction schemes, except one group without classic markers of poor prognosis that was treated with MTX weekly in monotherapy. Patients were followed up at least every 3 months, with more mandatory visits in the first 6 months of treatment. Clinical parameters including DAS28 components were registered at each visit. Fatigue was measured by the multidimensional fatigue inventory (MFI), a self-reported instrument consisting of 20 questions with a Likert scale from 1 to 5, ranging from 1 (absence of the symptom) to 5 (maximum intensity). Scores were grouped as 1 (absence of the symptom), 2 (minimal intensity), 3 (moderate intensity), 4 (severe intensity), and 5 (maximal intensity).

**Results:** Of the 379 patients recruited in the CareRA trial, 343 (90.5%) had a MFI score available at baseline and a DAS28CRP available at week 16. Of these patients, 236 (66.8%) patients achieved remission, and 107 (31.2%) patients not achieving remission at week 16. Two years of treatment, the proportion of patients in DAS28CRP remission was still higher in the early responders versus controls (82.3% versus 63.5%, p<0.001). Every MFI domain after 2 years of treatment showed lower scores for early responders including general fatigue (p=0.017), physical fatigue (p=0.011), reduced activity (p=0.040) and mental fatigue (p=0.042) except reduced motivation (p=0.062) (see figure 1). GEE analysis demonstrated that all MFI domains also differed over 2 years between patients in remission or not at week 16, including general fatigue (p<0.001), physical fatigue
In ACPA positive at-risk individuals without clinical arthritis, is ultrasound sufficiently accurate to predict progression to inflammatory arthritis?

L. Duquenne 1,2, K. Mankia 1,2, A. Di Matteo 1,2, L. Garcia-Montoya 1,2, J. Nam 1,2, P. Emery 1,2. University of Leeds, Leeds Institute of Rheumatic and Musculoskeletal Medicine, Leeds, United Kingdom; 1NIHR Leeds Musculoskeletal Biomedical Research Unit, Leeds, United Kingdom

Background: In a cohort of Anti-Cyclic Citrullinated Peptide Positive (ACPA+) At-Risk of developing inflammatory arthritis (IA) individuals without clinical synovitis, we previously demonstrated the predictive value of Power Doppler for progression depending on the number of joints involved (1). Here we update these results in a larger population combining all ultrasound (US) features and incorporating them in a multivariable analysis with clinical, genetic, immunological and serological markers.

Objectives: To investigate the ability of US to predict progression to clinical arthritis using multivariable Cox analysis with and without including other variables.

Methods: In a single centre prospective cohort, 488 at risk ACPA+ individuals with new musculoskeletal symptoms underwent an US scan of 30 small joints and 18 tendons at first visit (metacarpophalangeal, interphalangeal and metatarsophalangeal joints and flexor tendons, and extensor carpi ulnaris). The predictive value of US abnormalities (Power Doppler grade ≥ 1 (PD), Grey Scale grade ≥ 2 (GS), or erosion (E) presence) for progression to IA was analysed using Cox regression analysis and adjusted for tenosynovitis (TSV) presence, age, sex, ≥3 ULN CCP2 antibody titre and/or rheumatoid factor titre (RF), early morning stiffness duration, shared epitope (HLA-DRB1*01, *04 and/or *10), number of small joints tender, elevated CRP and intermittent motivation. A complete dataset considering all variables was available for 324 patients.

Results: Consecutive at-risk ACPA+ individuals (n=488, mean age 50.47 years old, 72.9% women) were followed up for at least 24 weeks or up to progression, for a median of 96 weeks (range 0.43-590). 130 of them (26.7%) developed IA after a median of 51.5 weeks (range 0.43 – 486).

Multivariable analysis focusing on intra-articular ultrasound features showed that individuals with 1-3 joints with a PD signal or 1-2 with E were twice as likely to develop IA (Table 1), those with ≥ 4 joints with a PD signal were more than six times more likely (Figure 1). All variables data was available in 324 participants, showing a significant predictive value of TSV presence in ≥1 joint (HR= 1.973, p= 0.024, CI= 1.095-3.553), smoking exposure (HR= 2.597, p= 0.003, CI= 1.369-4.929), shared epitope positivity (HR= 1.979, p=0.044, CI= 1.019-3.843), ≥5 small joints tender (HR= 2.111, p= 0.030, CI= 1.073-3.463), and a high titre CCP and/or RF (HR= 4.334, p= 0.003, CI=1.651-11.374).

Table 1. Multivariable Cox analysis of joint ultrasound features: non-adjusted for confounders

<table>
<thead>
<tr>
<th>Joints Involved</th>
<th>Feature</th>
<th>HR</th>
<th>CI</th>
<th>P-value</th>
<th>PPV</th>
<th>NPV</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small joints (wrist excluded)</td>
<td>PD ≥1:</td>
<td>2.109</td>
<td>1.364-3.262</td>
<td>&lt;0.001</td>
<td>44%</td>
<td>78.3%</td>
<td>488</td>
</tr>
<tr>
<td></td>
<td>≥4 joints</td>
<td>6.524</td>
<td>3.465-12.289</td>
<td>&lt;0.001</td>
<td>76.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GS ≥2:</td>
<td>0.381</td>
<td>0.230-0.639</td>
<td>&lt;0.001</td>
<td>71.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>≥4 joints</td>
<td>6.524</td>
<td>3.465-12.289</td>
<td>&lt;0.001</td>
<td>76.5%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Conclusion: In at-risk ACPA+ individuals, ultrasound alone - especially Power Doppler- is a powerful predictive factor of progression to IA, therefore of high clinical value for rheumatologists. The multivariable integrated risk prediction values indicates the role of other factors to be considered in future risk model development.

References:
[1] Duquenne L et Al. In CCP Positive At Risk of Rheumatoid Arthritis Indi-

dividuals, the Presence of Sub-clinical Synovitis in 4-10joints Universally Results in Clinical Synovitis [abstract]. Arthritis Rheumatol. 2019; 71 (suppl 10).

Disclosure of Interests: Laurence Duquenne: None declared, Kulveer Man-

dia: None declared, Andrea Di Matteo Grant/research support from: the pub-

cation was conducted while Dr. Di Matteo was an ARTICULUM fellow, Leticia Garcia-Montoya: None declared, Jacqueline Nam: None declared, Paul Emery Grant/research support from: AbbVie, Bristol-Myers Squibb, Merck Sharp & Dohme, Pfizer, Roche (all paid to employer), Consultant of: AbbVie (consultant, clinical trials, advisor), Bristol-Myers Squibb (consultant, clinical trials, advisor), Lilly (clinical trials, advisor), Merck Sharp & Dohme (consultant, clinical trials, advisor), Novartis (consultant, clinical trials, advisor), Pfizer (consultant, clinical trials, advisor), Roche (consultant, clinical trials, advisor), Samsung (clinical trials, advisor), Sandecz (clinical trials, advisor), UCB (consultant, clinical trials, advisor)