## FRI0163 INVESTIGATION OF THE PERIODONTAL CONDITION AMONG RHEUMATOID ARTHRITIS (RA) PATIENTS AND ANALYSIS OF INFLAMMATORY MEDIATOR IN THEIR SERUM AND GINGIVAL CREVICULAR FLUID (GCF)

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**Background:** Rheumatoid arthritis (RA) and periodontitis (PD) are common chronic inflammatory diseases with remarkable pathological and clinical similarities.A lot of similarities exist between RA and PD at cellular and molecular levels.

**Objectives:** To analyse the PD incidence among RA patients, measure the level of tumor necrosis factor-alpha (TNF-α), Interleukin-1β(IL-1β) and Interleukin-6 (IL-6)in their serum and gingival crevicular fluid (GCF), and to investigate their relationship.

**Methods:** The experimental group was composed of 350 patients with RA and the control group consisted of 426 age and gender matched healthy individuals,check and record periodontal condition by dentist,analyse the PD incidence of the two groups,then select 64 PD patients without systematic diseases and 47 PD patients with a stable condition of RA,Detect and compare their periodontal status and the level s of TNF-α, IL-1β and IL-6 in their serum and GCF.

**Results:** The percentage of PD was 67.7%,which was statistically significant higher than control group (43.6%) ($P<0.001$). The periodontal disease index (PDI),Probing depth (PD)and Clinical attachment loss (CAL) in patients with PD and RA are all significantly higher than those with simple PD ($P<0.05$). But the bleeding on probing (BOP) in the two groups was not statistically significant ($P>0.05$). Meanwhile, the level of TNF-α, IL-1β and IL-6 in serum and GCF are significantly higher in all PD patients than oral healthy individuals ($P<0.01$).Although those inflammatory mediators in serum are much higher in patients with PD and RA than in those with simple PD ($P<0.01$), there is no difference in the two group about those inflammatory mediators in GCF. The serum level of TNF-α,IL-1β and IL-6 in patients with PD and RA are positively correlated with the corresponding inflammatory mediators in their GCF (r value was 0.531,0.422 and 0.770 respectively,$p<0.01$).

**Conclusions:** Individuals with RA are more likely to experience periodontitis compares to healthy subjects, and the periodontitis is much more serious in patients with RA and PD than those with simple PD. the serum and GCF inflammatory factors' level increased significantly in patients with RA and PD,even during their RA stable period. The serum level of inflammatory factors in patients with PD and RA are positively correlated with the corresponding inflammatory mediators in their GCF. There is correlation between periodontitis and RA,and they may be the risk factors for eachother, the improvement of the periodontal status in patients with RA and PD may help to control systemic inflammation level and to make comprehensive treatment measure for RA patients.

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## FRI0164 DIFFERENCES BETWEEN RA PATIENTS WITH AND WITHOUT ILD FROM A UNITED STATES TERTIARY REFERRAL CENTER

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**Objectives:** To describe the characteristics of RA patients with and without ILD and to determine if medication use constitutes a risk factor for the development of ILD.

**Methods:** The medical records of RA patients with and without ILD treated at one academic center between 2008 and 2016 were analyzed. Data extracted include: patient demographics, serology, medication use (prednisone, DMARDs, biologics or small molecule drugs), and self-reported disease activity as MDHAQ and RAPID 3 scores. The subtype of ILD was based upon HRCT imaging, and some patients through histology. Differences between RA-ILD patients and RA patients without ILD were determined by Fishers exact test, and t-tests with a $p<0.05$ were considered statistically significant.

**Results:** The demographics and clinical data of 1,024 RA non-ILD patients and 96 RA-ILD patients indicate ILD patients were older males, had a higher mortality and were less likely to have been never smokers (Table 1). At the onset of ILD diagnosis, 31% were on no medication, 56% on monotherapy (MTX 16%, prednisone 13%, Etanercept 7%, adalimumab or LEF 5%, Rituximab 4%, HCQ 3%, and <1% on infliximab, SSZ or tofacitinib) and 11% received combination therapy. Twenty five percent of the RA-ILD patients developed ILD preceding or coinciding with the diagnosis of RA. After the onset of ILD those patients were more likely to receive prednisone and less likely to receive MTX than those without ILD ($p<0.05$). The predominant types of ILD were as follows: UIP 27%, NSIP 15%, NSIP vs UIP 14%, and unclassifiable 9%.

Table 1

| | RA-ILD | RA-without ILD | P values |
|---|---|---|---|
| Total number of patients | 96 | 1,024 | |
| Gender (Male) | 48 (50%) | 238 (23%) | <0.001 |
| Age >65 | 57 (59%) | 337 (33%) | <0.001 |
| Never smoker | 33 (34%) | 504 (50%) | <0.001 |
| Fatalities | 15 (16%) | 38 (4%) | <0.001 |
| BMI (>25) | 64 (67%) | 671 (66%) | NS |
| RF+ (>14 units) | 67 (74%) | 678 (69%) | NS |
| CCP+ (>20 units) | 62 (65%) | 617 (61%) | NS |
| MDHAQ | 0.7 | 0.7 | NS |
| Rapid3 | 10.6 | 12.0 | NS |

**Conclusions:** RA-ILD patients differed from RA patients without ILD in demographic characteristics, but not in self-reported measures of disease activity or serology. Thirty one percent of RA-ILD patients were not on any immunomodulatory medications at the time of ILD diagnosis, and 25% of RA-ILD patients developed ILD preceding, or coinciding with, the onset of active RA. Our results did not identify a specific drug class or biologic agent as a risk factor for developing ILD in RA patients.

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## FRI0165 SERUM FREE LIGHT CHAINS OF IMMUNOGLOBULINS IN RHEUMATOID ARTHRITIS: CORRELATION WITH INTERSTITIAL LUNG DISEASE

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**Background:** Lungs in Rheumatoid arthritis (RA) seem to play an important role, not only as an extra-articular manifestation but also as a site of initiation of the disease and activation for the immune response. B lymphocytes are thought to be involved in the pathophysiology of RA and interstitial lung disease (ILD). The encouraging results of the use of Anti-CD20 treatments to stabilize articular symptoms and lung involvement reinforce this theory. Serum Free immunoglobulin Light Chains (FLC) might represent, in this context, an interesting marker of B lymphocytes activation during this disease.

**Objectives:** To determine the serum FLC levels in RA patients with and without ILD and to study their possible association with disease characteristics and activity.

**Methods:** Fifteen RA patients with clinically symptomatic interstitial lung disease, confirmed by computed tomography (RA-ILD) (53.3% females; mean age 61,27±6,48 years) and age matched RA patients (66.7% females) with no clinically evident interstitial disease (non-ILD) were studied. Clinical and immunological inflammatory characteristics were assessed for all the patients. FLC levels were quantified by turbidimetry (Freelite TM Kappa and Lambda Kits, The Binding Site, UK).

**Results:** The mean serum FLC-κ levels (RA-ILD: 40,74±16,94 ng/ml *vs* non-ILD 24,88±8,87 ng/ml, p=0,003) and FLC-λ levels (RA-ILD: 37,34±16,56 ng/ml *vs* non-ILD 26,28±7,22 ng/ml, p=0,028) were significantly higher in patients with ILD compared to non-ILD, while the serum FLC-ratioκ/λ (RA-ILD: 1,15±0,38 *vs* non-ILD 1,00±0,43, p=0,304) were comparable.

There was no significant difference for the DAS28 disease activity score between both groups (RA-ILD: 4,6±1,5 vs non-ILD 4,38±1,46, p=0,69). No significant correlations were found between the DAS28-score and FLCκ, FLCλ and FLC-ratioκ/λ ($p>0,05$). FLC-κ levels correlated significantly with ESR and CRP levels ($p<0.001$), FLC-λ levels with CRP (p=0,005) but not with ESR (p=0,247) and FLC-ratioκ/λ did not correlate with both ESR and CRP levels.

**Conclusions:** High levels of serum FLC are associated with RA-ILD and with a higher degree of inflammation, supporting the role of B cell activation in the pathophysiology of RA with ILD.

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## FRI0166 RADIOGRAPHIC STRUCTURAL DAMAGE IS WORSE IN THE DOMINANT THAN THE NON-DOMINANT UPPER EXTREMITY IN PATIENTS WITH RHEUMATOID ARTHRITIS

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**Background:** The relationship between mechanical stress and radiographic damage in rheumatoid arthritis (RA) has been detected in patients with hemiplegia[1)] or poliomyelitis[2)]. In patients without neurological disorder, Koh reported that radiographic damage was worse and progressed faster in the dominant hand in