SAT0069

TUBERCULOSIS IN BIOLOGIC-NAÏVE PATIENTS WITH RHEUMATOID ARTHRITIS - RISK FACTORS AND TUBERCULOSIS CHARACTERISTICS

J. Sundbaum^{1,2}, E. Arkema³, J. Bruchfeld⁴, J. Jonsson⁵, J. Askling^{3,6}, E. Baecklund¹. ¹Uppsala universitet, Rheumatology Unit, Department of Medical Sciences, Uppsala, Sweden; ²Luleå tekniska universitet, Institutionen för hälsovetenskap, Luleå, Sweden; ³Karolinska institutet, Clinical Epidemiology Division, Department of Medicine Solna, Stockholm, Sweden; ⁴Karolinska institutet, Infectious Diseases Unit, Department of Medicine Solna, Stockholm, Sweden; ⁵Folkhälsomyndigheten, Stockholm, Sweden; ⁶Karolinska institutet, Rheumatology Division, Department of Medicine, Stockholm, Sweden

Background: The risk of tuberculosis (TB) has decreased in biologic disease modifying anti-rheumatic drugs (bDMARDs) treated rheumatoid arthritis (RA) patients, but remains unaltered 4-fold increased in bio-naïve RA patients compared to the general population in Sweden (1). In absolute numbers, most TB cases in contemporary RA patients occur in the group of bio-naïve patients. Knowledge about risk factors for TB and TB characteristics in bio-naïve RA patients is still limited.

Objectives: To investigate risk factors for TB and TB characteristics in bio-naïve RA patients.

Methods: Population-based case-control study. A national bio-naïve RA cohort was identified from the National Patient Register and the Swedish Rheumatology Quality Register. RA cases with TB were identified by linkage to the Swedish Tuberculosis Register (with mandatory TB registration) 2001-2014 (n=42). For each case, four matched RA controls without TB were identified. Clinical data were obtained from medical records. Univariate and multivariable logistic regression analyses were used to estimate risk for TB expressed as adjusted (adj) odds ratio (OR) with 95% confidence intervals (CI).

Results: After review of the medical records and validation of diagnoses, 31 cases with RA and TB and 122 controls remained in the study. The TB cases had a median of 3 (1-6) reported TB risk factors, and almost 90% were born before 1950. Only one case was screened for TB (with negative result of tuberculin skin test). Active TB occurred at a mean of 15 years after RA diagnosis, and all except three cases were considered as reactivation of latent TB. Exposure to leflunomide (5 cases, 4 controls) (adj OR 6.02; 95% CI 1.47-24.65) and azathioprine (5 cases, 6 controls) (adj OR 3.85; 95% CI 1.06-13.79) were associated with increased risk for TB. Methotrexate, used in 67.7% of cases and 73.9% of controls, was not associated with increased risk of TB (adj OR 0.83; 95% CI 0.34-1.98). Exposure to corticosteroids was more common among cases than controls (74.2% vs 53.8%, p= 0.04), and was associated with an adj OR for TB of 2.44 (95% CI 1.00-5.92). No significant differences were identified between prednisolone-treated cases and controls in terms of maximum dose ever of prednisolone, treatment duration before TB, or cumulative dose of prednisolone during the last year before diagnosis of TB. Obstructive pulmonary disease was the only comorbidity linked to an increased TB risk (adj OR 3.94; 95% CI 1.45-10.69). Pulmonary TB dominated (84%) followed by TB lymphadenitis (19%). Treatment success was 94%, comparable to TB patients in general.

Conclusion: Several RA-associated risk factors may contribute to increased TB risk in bio-naïve RA patients (treatment with leflunomide, azathioprine, or prednisolone and concomitant obstructive lung disease). We could not confirm previous findings of an association with the use of moderate to high doses of prednisolone (≥ 15 mg). TB risk seems difficult to predict with precision in the individual bio-naïve patient based on RA-associated risk factors. To further decrease the TB risk in RA patients TB screening should also be considered in the group of bio-naïve patients.

References:

- [1] Arkema EV et al. Are patients with rheumatoid arthritis still at an increased risk of tuberculosis and what is the role of biological treatments? *Ann Rheum Dis* 2015;74:1212-17.

Disclosure of Interests: Johanna Sundbaum: None declared, Elizabeth Arkema: None declared, Judith Bruchfeld: None declared, Jerker Jonsson: None declared, Johan Askling Grant/research support from: JA acts or has acted as PI for agreements between Karolinska Institutet and the following entities, mainly in the context of the ARTIS national safety monitoring programme of immunomodulators in rheumatology: Abbvie, BMS, Eli Lilly, Merck, MSD, Pfizer, Roche, Samsung Bioepis, Sanofi, and UCB Pharma, Eva Baecklund: None declared

DOI: 10.1136/annrheumdis-2020-eular.5339

SAT0070

LUNG ULTRASOUND IN PATIENTS WITH RHEUMATOID ARTHRITIS AND THE DEFINITION OF SIGNIFICANT INTERSTITIAL LUNG DISEASE

M. Di Carlo¹, M. Tardella¹, E. Filippucci¹, F. Salaffi¹. ¹Università Politecnica delle Marche, Rheumatological Clinic - Dipartimento di Scienze Cliniche e Molecolari, Jesi (Ancona), Italy

Background: In recent years, a growing interest has grown around interstitial lung disease (ILD) in patients with rheumatoid arthritis (RA). While high resolution computed tomography (HRCT) of the chest remains the diagnostic method of choice, increasing attention has been directed towards lung ultrasound (LUS) in the diagnosis of ILD in connective tissue diseases. LUS allows the detection of artifacts (B-lines) characteristic of ILD, without the need to use ionizing radiation. However, it is not yet well defined how to interpret the LUS findings under suspicion of RA-ILD.

Objectives: To determine the cut-off number of LUS B-lines that identifies a significant RA-ILD.

Methods: A cross sectional study was conducted on consecutive RA patients with suspected RA-ILD. The inclusion criteria were clinical (dyspnea, velcro sounds), instrumental (suggestive anomalies on conventional radiography, DLco reduction), or in presence of at least two of the following risk factors for RA-ILD: smoking habit, male sex, advanced age, and ACPA presence.

Patients underwent LUS, chest HRCT, pulmonary function tests, and clinical evaluation. The diagnosis of RA-ILD was based on a semi-quantitative evaluation of HRCT using a computer-aided method (CaM). The 10% of fibrosis, measured with this method, was considered as a cut-off for the presence of significant RA-ILD. The LUS was carried out in 14 defined intercostal spaces using a linear multifrequency probe 6-18 MHz (MyLab Class C, Esaote S.p.A., Genoa, Italy) and the number of B-lines present in each intercostal space was counted and summed up (Figure 1). The discriminating validity of the LUS versus HRCT has been studied by using the receiver operating characteristic (ROC) curve analysis.

Results: 72 consecutive RA patients (21 male, 51 female) were evaluated, with a mean age of 63.0 (SD 11.5 years), a mean ACPA titre of 327.6 (SD 633.3) U/ml and a rheumatoid factor of 324.6 (SD 748.7) U/ml. The mean estimate of pulmonary fibrosis using the CaM was 11.2% (SD 7.5) at HRCT, while at LUS the mean number of B-lines was 10.6 (SD 15.1). Pulmonary fibrosis of 10% as measured by the CaM at HRCT was detected in 25 patients (34.72%). Applying this HRCT cut-off point as an estimate of significant fibrosis, the presence of 9 B-lines was found to be the optimal cut-off at ROC curve analysis. This LUS cut-off defines the presence of significant fibrosis with a sensitivity of 70.0%, a specificity of 97.62%, and a positive likelihood ratio of 29.4 (Figure 2).

Figure 1. LUS B-line illustrative.