
Conclusion: Baseline laboratory values for ESR, CRP, and RF have only marginal impact on the likelihood of treatment with MTX or biological agents. At least 30% of patients with RA have a normal ESR or CRP, or negative RF test. A traditional view that an abnormal laboratory test generally suggests in rheumatoid arthritis (RA). The Ontario Biologics Research Initiative (OBRi) is an innovative undertaking to promote real-world rheumatoid medicine, based in part on Ontario’s comprehensive administrative healthcare databases. Our objective was to assess the risk of serious fungal infections in seniors with RA.

Methods: An RA cohort was assembled from Ontario billing and hospitalization data, 1992–2009. Analyses were limited to subjects aged >65 who filled ≥1 prescription for an oral glucocorticoid, disease-modifying agent (DMARD) or biologic. We studied cases of invasive fungal infections (Aspergillosis, Coccidioidomycosis, Histoplasmosis, Blastomycosis, Paracoccidioidomycosis, systemic Candidiasis) identified from the diagnoses most responsible for hospitalizations and/or emergency room visits over 1998–2009. Cases of infection were matched (on age, sex, and date of cohort entry) to up to 5 controls from the same RA cohort. Multivariate conditional logistic regression analyses assessed the independent effects of demographics, comorbidity, medications, and markers of RA severity (number of rheumatology visits, extra-articular RA features, joint replacement).

Results: In 85,458 seniors with RA (contributing 614,915.5 person-years), 57 invasive fungal infections occurred (9.3 events per 100,000 person-years). Cases were more likely than controls (n=285) to be rural (42.1% of cases vs. 16.9% of controls) and to have more comorbidities especially lung (43.9% vs 24.6%) and renal disease (12.3% vs 4.2%). Cases also had more extra-articular RA features (33.3% vs 21.4%) and more rheumatology visits. Biologic exposures were rare in our cohort, and at the time of infection, no cases were exposed to a biologic agent. In both cases and controls, the most common DMARDs were methotrexate (11.7%) and hydroxychloroquine (6.7%). In contrast, prednisone exposure >10mg/d occurred in 17.5% of cases, versus 7.0% of controls. Multivariable models demonstrated that risk of invasive fungal infections was higher among rural-versus-urban residents (HR 14.47, 95% CI 4.46, 4.98) and in subjects with more co-morbidities (as assessed by number of distinct drugs used in the year prior, HR 1.24 95% CI 1.12, 1.37). There was a notable trend for greater risk of invasive fungal infection with prednisone doses > 20 mg/d adjusted HR 6.10 95% CI 0.96, 38.83 (p = 0.055).

Conclusions: Rural residence and greater co-morbidity were associated with increased risk for invasive fungal infections in seniors with RA. Steroids were suggested as an independent risk factor in this population-based sample. Potential limitations of our study include relatively low drug exposure rates, the possibility of incomplete ascertainment of biologic exposures (for individuals receiving drugs through private insurance) and channeling bias (where persons at highest risk for infections may not be prescribed biologics).

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Background: Remission is the goal of treatment in rheumatoid arthritis (RA). In general, remission is associated with improved functionality. However, it is unclear whether remission according to the Disease Activity Score in 28 joints (DAS28) criteria is good enough to prevent functional disability. The objective of this study was to assess the relationship between DAS28 and functionality after 1 year follow-up in very early RA.

Methods: Data of the Dutch Rheumatoid Arthritis Monitoring (DREAM) remission induction cohort were used (1). Disease activity was indexed as remission (DAS28 < 2.6). DAS28 levels were moderate (2.6 < DAS28 ≤ 5.1) and high (DAS28 > 5.1). Functionality was measured with the Health Assessment Questionnaire Disability Index (HAQ; scale 0 (best) to 2.6), a lower DAS28 is still associated with better functionality (since we defined remission as DAS28 < 2.6), low (2.6 < DAS28 ≤ 5.1) and high (DAS28 > 5.1). Functionality was measured with the Health Assessment Questionnaire Disability Index (HAQ; scale 0 (best) to 2.6), a lower DAS28 is still associated with better functionality.

Results: One year data were available for 239 patients. After one year, mean (SD) DAS28 was 2.59 (1.05) and observed DAS28 levels were 56.9% (136/239) remission, 16.3% (39/239) low, 24.3% (58/239) moderate and 65.9% (104/158) high (DAS28 > 5.1). DAS28 level in 239 patients. After one year, mean (SD) DAS28 was 2.59 (1.05) and observed DAS28 levels were 56.9% (136/239) remission, 16.3% (39/239) low, 24.3% (58/239) moderate and 65.9% (104/158) high (DAS28 > 5.1). Functionality was measured with the Health Assessment Questionnaire Disability Index (HAQ; scale 0 (best) to 2.6), a lower DAS28 is still associated with better functionality. The objective of this study was to assess the relationship between DAS28 and functionality after 1 year follow-up in very early RA.

Conclusions: DAS28 is still associated with better functionality. The objective of this study was to assess the relationship between DAS28 and functionality after 1 year follow-up in very early RA.

Table 1. DAS28 levels and functionality scores after one year.

<table>
<thead>
<tr>
<th>DAS28 level</th>
<th>Median (IQR)</th>
<th>HAQ ≤0.5, n (%)</th>
<th>Median (IQR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remission (n = 136)</td>
<td>0.25 (0.00–0.50)</td>
<td>104 (76.5)</td>
<td>80.0 (65.0–95.0)</td>
</tr>
<tr>
<td>Low (n = 39)</td>
<td>0.38 (0.00–0.75)</td>
<td>25 (64.1)</td>
<td>75.0 (55.0–90.0)</td>
</tr>
<tr>
<td>Moderate (n = 58)</td>
<td>0.69 (0.25–1.16)</td>
<td>23 (39.7)</td>
<td>65.0 (40.0–80.0)</td>
</tr>
<tr>
<td>High (n = 66)</td>
<td>1.33 (0.94–1.91)</td>
<td>16 (24.6)</td>
<td>40.0 (22.5–60.0)</td>
</tr>
</tbody>
</table>

Conclusion: A lower disease activity is related to better functionality in patients with very early RA. Below the DAS28 remission threshold (DAS28 < 2.6), a lower DAS28 is still associated with better functionality scores. The DAS28 is a composite score and the HAQ and PF-10 are patient reported outcomes. Our results emphasize that aiming for remission is
important but aiming at the lowest possible DAS28 is even better as it results in improved functionality, which is relevant for patients.

References:

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Low Rate of Rheumatoid Arthritis Remission in Real Life: Might Predictive Factors Explain? Elodie Loppin2, Ronan Garlantezec1 and Elisabeth Solau-Gervais2. 1Public Health Department, University Hospital Brest, France, 2Rheumatology Department University Hospital Poitiers, France

Objective: Remission constitutes the best achievable state in patients with rheumatoid arthritis (RA). Remission rates in usual clinical care are much more lower than the one in randomized clinical trials (1). The objective of the study was to define remission factors in “real life”.

Methods: Remission has been assessed retrospectively for records of 364 patients with rheumatoid arthritis receiving usual care. These patients were out and in patients followed in an university hospital with at least one visit in year 2008. Disease activity was evaluated on records according to DAS 28 criteria. Remission was defined by a DAS28 < 2.6. Statistical analysis used Chi-2 and multivariate analysis with the software SAS9.

Results: The evaluation of disease activity was available for 328 patients (90%). Mean age of the patients was 63 years (+/-13.7) and mean duration of the disease was 13.6 (+/-10.7). Rheumatoid factor and anti-CCP was positive respectively in 79.3% and 73.8%. Eighty five percent had an erosive disease. The rate of global remission was 28%. Factors associated statistically with remission in multivariate analysis were (Ors 95% confidence intervals): male sex (0.2-0.8), younger age (0.2-0.9), rheumatoid factor-positive (1.2-6.5) and the absence of concomitant prednisolone treatment (0.3-0.9). Younger age and rheumatoid factor-positive presents more a population with a “higher therapeutic objective” and female sex and older age patients have more a difference in the evaluation of the disease, rather than true differences in RA activity. Moreover, the remission rate was significantly different according to the treatment: 15% without DMARDs or biotherapies, 24% with DMARDs and 47% with anti-TNF alpha treatment. As regards to the three anti-TNF alpha, the remission rate was the lowest for infliximab (18%), than etanercept (43%). Patients treated with adalimumab had the highest rate of remission with 64%. The difference was significant between infliximab and adalimumab (OR: 1.2–101) and between infliximab and etanercept (OR: 1.1–30.15) but not between etanercept and adalimumab.

Conclusion: Male sex, younger age, rheumatoid factor-positive and corticoids free are associated with remission. Assessing remission in clinical practice is possible and etanercept and adalimumab treatments are associated with higher rate of remission.


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Lymphocytopenia and Infection Risk in Rheumatoid Arthritis: A Population Based Analysis. Deana D. Hoganson1, Eric L. Matteson1, Patrick D. Fitz-Gibbon2 and Cynthia S. Crowson3. 1Mayo Clinic, Rochester, MN, 2Mayo Clinic Rochester, Rochester, MN, 3Mayo Clinic Rochester

Background: There is an increased susceptibility for infections in patients with rheumatoid arthritis (RA) which contributes to increased mortality. Lymphocytopenia is prevalent in RA patients and may contribute to increased infection risk. The purpose of this study was to examine the association between lymphocytopenia and infection in RA patients during the pre-biologic era and develop a risk score for infections.

Methods: We utilized a population based cohort of patients with incident RA ascertained between 1955 and 1994 that were followed longitudinally through their complete medical records until 1/1/2000. The outcome measures included all objectively confirmed infections (by microbiology or radiology) and serious infections (requiring hospitalization or IV antibiotics). Data were collected on smoking status, leukopenia, lymphocytopenia, comorbidities (alcoholism, diabetes mellitus (DM), chronic lung disease, cardiovascular disease (CVD)), RA disease characteristics (erosions, extra-articular manifestations (ExRA), rheumatoid factor (RF), nodules, erythrocyte sedimentation rate (ESR)) and medication use. Potential predictors were examined using multivariable Andersen-Gill models (a variation of Cox modeling allowing multiple infections per patient) with time-dependent covariates.

Results: Among the 584 RA patients (mean age 58 years; 72% female; median followup 9.9 years), 277 had ≥1 objectively confirmed infection (706 total infections), and 252 had ≥1 serious infection (646 total infections). Significant predictors of both outcomes included age, male sex, leukopenia, lymphocytopenia, alcoholism, DM, chronic lung disease, CVD, ExRA, RF positivity, nodules, ESR and glucocorticoid use. Lymphocytopenia was significantly associated with objectively confirmed (HR=1.7, 95% CI=1.3–2.2; p=0.001) and serious (HR=1.6, 95% CI=1.2–2.2; p<0.001) infections after adjustment for the other risk factors. Using these models, infection risk scores were developed for each outcome. The score discriminated patients with low (5 year risk 13% ± 4.1%), medium (5 year risk 23% ± 7.4%), and high infection risk (5 year risk 40% ± 8.5%) (Figure).