and 31 patients. Patients with incident RA in 2000–09 had markedly lower cumulative incidence of any CVD events than patients diagnosed in 1990s and 1980s (Figure). Hazard ratios (HR) for any CVD events demonstrated significant reduction in CVD events among patients with incident RA in 2000s compared with incident RA in 1980s (HR: 0.52; 95% confidence interval (CI): 0.32-0.86) and a reduction approaching significance compared with incident RA in 1990s (HR: 0.65; 95% CI: 0.40-1.05). Patients with incident RA in 2000s were compared with 405 patients without RA in 2000s who experienced 30 CVD events during follow-up. Patients with incident RA in 2000s had no excess in CVD events over patients without RA (HR: 0.88, 95% CI: 0.53-1.46). Results were similar for MI, stroke and CHD deaths when examined separately.

Conclusion: Our findings show a dramatic reduction in incidence of major CVD events in RA in recent decades. The gap in CVD occurrence between RA patients and the general population may be closing. These findings may reflect increased awareness, improved primary CVD prevention and more optimal RA disease management in recent years. More studies are needed to understand the reasons and implications of these trends.

REFERENCES:

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FR0655
THE IMPACT OF PREGNANCY ON STRUCTURAL PROGRESSION IN PREMENOPAUSAL WOMEN WITH RHEUMATOID ARTHRITIS

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Background: Disease activity often improves during pregnancy and worsens at the postpartum period [1]. The long-term effect of pregnancy on radiographic joint damage progression among premenopausal women with RA has been rarely studied.

Objectives: The aim of this study was to analyse the impact of pregnancy on radiographic progression in premenopausal women with RA.

Methods: This is an observational cohort study of RA patients included in the Swiss Clinical Quality Management in Rheumatoid Arthritis (SCQM-RA). Patients enrolled are followed-up yearly and have radiographic assessments at regular intervals. Information about female reproductive factors, such as pregnancies, breastfeeding and hormonal treatment were retrospectively retrieved using a questionnaire. For this analysis we included premenopausal women with at least two radiographic assessment and full information on reproductive factors. The primary outcome was the rate of radiographic progression (Ratingen erosion score). We analysed the radiographic progression between premenopausal women with at least one pregnancy and those with no pregnancies. Baseline time was the first radiographic assessment. We used a multilevel regression model for longitudinal data, adjusted for potential confounders, such as baseline age, disease duration, DAS-28 and treatment.

Results: Among 1966 women who were interviewed, 430 premenopausal women with sequential radiographic assessments during follow-up were analysed. Half of premenopausal women had at least one pregnancy. Women with at least one pregnancy were older than nulliparous (median of 41 vs 39 years, p=0.001) and had longer disease duration (median of 3.4 vs 2.6 years, p=0.04) (Table 1). During follow-up, the rate of radiographic progression was lower in women with pregnancies than in nulliparous women [0.9% (95% CI: 0.0 to 1.9) vs 2.1% (95% CI: 0.9 to 3.1) over 10 years, respectively, p=0.04, Figure 1]. In a sub-analysis, the rate of radiographic progression appeared to be lower during the 13-year period after first pregnancy than after this period [0.2% (95% CI: -0.8 to 1.3) vs 2.6% (95% CI: 1.3 to 3.9) over 13 years, respectively, p=0.003].

We found no difference in the rate of radiographic progression between women with a single pregnancy and multiparous women.

Conclusion: In premenopausal women with RA, joint damage progressed more rapidly in nulliparous women than in women with at least one pregnancy. However, we cannot make any definite causal inference, since it is well possible that women renouncing getting pregnant might be patients with more severe disease. Radiographic progression appeared to increase the longer the time since pregnancy.

REFERENCES:

Table 1. Baseline characteristics of premenopausal women of SCQM cohort

<table>
<thead>
<tr>
<th>General and disease characteristics</th>
<th>Women with pregnancies n=213</th>
<th>Nulliparous women n=217</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, years, median (IQR)</td>
<td>41 (36-45) *</td>
<td>36 (29-43)</td>
</tr>
<tr>
<td>Ever smoking, n (%)</td>
<td>56 (26)</td>
<td>66 (30)</td>
</tr>
<tr>
<td>Alcohol consumption, n (%)</td>
<td>129 (61)</td>
<td>112 (52)</td>
</tr>
<tr>
<td>Disease duration, years, median (IQR)</td>
<td>3.4 (0.6-4.0) *</td>
<td>2.6 (0.4-7.4)</td>
</tr>
<tr>
<td>Seropositive (ACP or RF positive), n (%)</td>
<td>175 (82)</td>
<td>180 (83)</td>
</tr>
<tr>
<td>DAS 28, median (IQR)</td>
<td>3.6 (2.4-5.4)</td>
<td>3.6 (2.4-4.8)</td>
</tr>
<tr>
<td>HAQ-DI, median (IQR)</td>
<td>0.6 (0.3-1.0)</td>
<td>0.6 (0.3-1.3)</td>
</tr>
<tr>
<td>Erosion score, median (IQR)</td>
<td>1.0 (0.3-4.9)</td>
<td>1.4 (0.1-5.0) *</td>
</tr>
<tr>
<td>DMARD treatment, n (%)</td>
<td>181 (85)</td>
<td>186 (86)</td>
</tr>
<tr>
<td>Biologic treatment, n (%)</td>
<td>70 (33)</td>
<td>72 (33)</td>
</tr>
</tbody>
</table>

*p-value <0.05. DAS28: 28-joint Disease Activity Score ESR; HAQ-DI: Health Assessment Questionnaire –Disability Index; DMARD: disease-modifying antirheumatic drugs.

Figure 1. Change in RA Disease Progression and pregnancies

FR0656
ENVIRONMENTAL AND ATMOSPHERIC FACTORS IN SYSTEMIC LUPUS ERYTHEMATOSUS: A REGRESSION ANALYSIS

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Background: Understanding the role of environmental exposures in the development of SLE and their association with SLE activity may help identify modifiable risk factors and provide opportunities for early intervention in flares.

Objectives: We hypothesized that changes in fine particulate matter (PM2.5) concentration, ozone concentration, temperature, resultant wind, relative humidity, and barometric pressure are predictive of organ specific flares in lupus.

Methods: 1628 patients who fulfilled 4 of the 11 ACR or SLICC classification criteria for SLE were included in the analysis. The data ranged from 1999 to 2017. Maximum distance between visits was 110 days with 1-month time aggregation units. Disease activity was expressed as Physician Global Estimate (PGA), taken at

Figure 2. Cumulative incidence of any CVD event in RA and non-RA patients by decade of RA incidence/index.