

Table 2. Longitudinal associations

	Median [25–75%]	Pain β [95% CI]	Fatigue β [95% CI]
Synovial lining cells	2.4 [1.5–3.2]	0.5 [-2.9–3.9]	-2.3 [-5.6–1.0]
Infiltrate	1.2 [0.5–1.8]	2.9 [-4.3–10.1]	-4.7 [-11.6–2.3]
Fibrin	0.0 [0.0–0.4]	-7.1 [-17.7–3.4]	-0.1 [-10.1–10.0]
Vascularization	1.6 [1.0–2.0]	-1.2 [-8.3–5.9]	-0.5 [-7.2–6.3]
Fibrosis	0.8 [0.2–1.3]	-3.3 [-10.4–3.8]	0.8 [-6.3–7.9]
Edema	0.6 [0.2–1.3]	1.5 [-4.8–7.8]	0.2 [-6.0–6.4]
Average inflammation	1.1 [0.9–1.6]	-0.3 [-11.0–10.5]	-5.3 [-15.6–5.0]

cally assessed synovial inflammation in knee OA patients and their associations with clinical outcomes over time. We were unable to identify individual inflammatory aspects which associate with pain or fatigue. Additional research is required to identify the underlying mechanism for pain and fatigue in OA.

References:

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Targeting adipose tissue inflammation

OP0336 ROLE OF SYSTEMIC INFLAMMATION ASSOCIATED WITH RHEUMATOID ARTHRITIS IN THE GLUCOSE AND LIPID METABOLISM: HUMANS, CIA MOUSE MODEL AND IN VITRO STUDIES

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Background: Rheumatoid arthritis (RA) patients are at higher risk for insulin resistance (IR). The association between RA and IR, and its role on the different characteristics of the disease, such as duration and activity have not been well defined. In addition, there is a gap of knowledge regarding the link between systemic/local inflammation and insulin sensitivity and lipid metabolism in RA patients.

Objectives: To explore the effects of the inflammation on the glucose and lipid metabolism in the RA context, following three strategies: RA patients, collagen induced arthritis (CIA) mouse model and in vitro treatment of 3T3L1 adipocytes.

Methods: *Human study:* 150 RA patients and 40 healthy donors were included. IR was quantified using the homeostatic model assessment of IR (HOMA-IR). *Mouse model:* 20 CB57J/BL mice were used; 5 mice were used as non-diseased group, and 15 were used in CIA modelling: sorted in low and high activity of the disease based on the number of inflamed digits depending on the duration of the disease. Plasma, leukocytes, skeletal muscle, liver and adipose tissue were collected. *Treatment of adipocytes with serum from RA patients:* 3T3L1 adipocytes were treated with serum 10% of RA patients and healthy donors for 24h. The expression of genes and proteins involved in inflammation, lipid metabolism and insulin signalling was analysed in all the tissues and cells.

Results: Percentages of obesity, hypertension, atherogenic risk, metabolic syndrome and insulin resistance were significantly increased in the RA group. Although mean time of evolution was 7 years, no association between IR and the duration of the disease was found. Levels of HOMA-IR significantly correlated with DAS28 and C-reactive protein levels, suggesting that systemic inflammation might lead to the development of insulin resistance. In mice, the induction of arthritis promoted an alteration of the expression of genes involved in inflammation as well as lipid metabolism and insulin signalling in all the metabolic tissues and leukocytes, pointing out to an increase in lipolysis, decrease in adipogenesis and lipid accumulation and induction of IR. These results were recapitulated after treatment of adipocytes with serum from RA patients with high disease activity.

Conclusions: 1) IR was closely associated with an increase in disease activity and systemic inflammation in RA patients. 2) Induction of arthritis in mice promoted an increase in inflammation markers in skeletal muscle, adipose tissue and leukocytes, and a reduction of genes involved in lipid uptake and storage, generating an insulin resistance state in those tissues. 3) The inflammatory components in RA serum induced lipolysis, reduced adipogenesis, and increase inflammation and insulin resistance in adipocytes 3T3L1.

In sum, our results suggest that chronic inflammation associated with RA might directly impact relevant metabolic tissues, altering glucose and lipid homeostasis and favouring the development of insulin resistance.

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Trials and tribulations of medication adherence

OP0337-HPR PREDICTORS OF PATIENT REPORTED DECISION TO DISCONTINUE ANTI-RHEUMATIC MEDICATION IN RHEUMATOID ARTHRITIS PATIENTS: DATA FROM A RHEUMATOID ARTHRITIS COHORT

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Background: Despite the availability of safe and effective treatments and the establishment of treatment guidelines, real-world effectiveness remains suboptimal largely due to low patient adherence with prescribed treatment.

Objectives: The purpose of this study was to systematically evaluate sociodemographic, health insurance, and disease-related factors associated with patient reported decision for discontinuation of anti-rheumatic medications (ARM) in a large observational cohort of RA patients followed in Canadian routine clinical care.

Methods: RA patients enrolled in the Ontario Best Practices Research Initiative (OBRI) clinical registry and had at least two years of follow-up were included in the analysis. Treatment discontinuation due to patient reported decision was defined as ARM discontinuation. Independent predictors of ARM discontinuation were evaluated with multivariate cox-regression using both time-fixed and time-dependent variables. Factors considered included patient sociodemographics (age, gender, race, education status, annual income, smoking history), health insurance information (private vs. non-private, % coverage), disease parameters (RA duration, presence of erosion, RF positivity, DAS28, physician global, HAQ-DI, number of comorbidities), types of medications used, and physician characteristics (gender, academic position, urban vs. rural, distance from patient's residence).

Results: A total of 1,762 patients were included in the analysis with a mean (SD) age of 57.4 (13.0) years and disease duration of 8.5 (9.3) at the time of enrolment to the registry (baseline). The majorities of patients were female (77.7%), had post-secondary education (55.3%), and had private insurance (67.2%). In terms of disease severity, 54.5% had prior erosion, 69.5% were RF positive, and mean (SD) DAS28 was 4.5 (1.5).

In a multivariate analysis, married status (HR, 0.73; 95% CI 0.56–0.96), RF positivity (HR, 0.73; 95% CI 0.56–0.96), and higher number of comorbidities (HR, 0.92; 95% CI 0.85–0.99) were identified as significant predictors of ARM continuation while higher physician global score (HR, 1.10; 95% CI 1.04–1.15), NSAID use (HR, 1.75; 95% CI 1.29–2.38), and polypharmacy (HR, 1.23; 95% CI 1.07–1.40) were associated with ARM discontinuation due to patient reported decision.

Conclusions: In this systematic approach a variety of factors encompassing sociodemographics, disease, and medication characteristics, were identified as significant independent predictors of ARM discontinuation due to patient reported decision. These results should be taken into consideration when developing patient adherence support programs and in the choice of treatment regimens.

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