5 years follow-up of DAS28-CRP, HAQ or VAS pain values did not differ between the two groups (Fig 1A).

Figure 1. Comparison of DAS28-CRP and HAQ scores evolution. (A) in two groups of patients: treated with GC (BL_GC Yes) or without GC (BL_GC No) in combination with cDMARDs as first line treatment. (B) in two groups of patients: never treated with GC during 5 years follow-up (No GC/ 5 years) and those who received a high cumulative dose of GC ≥ 1 g/5years (GC>[1G/5years]).

Interestingly, patients not exposed at baseline to GC showed a higher remission rate (DAS28-CRP < 2.6) of 48.4% vs 44.3% at 6 months.

We also analysed a subgroup of patients (n=139) who received a cumulative dose of more than 1 g of prednisolone during the 5 years period. We confirmed the baseline differences for CRP, smoking habits, age and found in this subgroup more males (36.7% vs 28.2%, $p=0.021$) and higher DAS-28CRP values (5.0 vs 4.7, $p=0.048$).

During the 5 years follow up, DAS-28CRP, VAS pain and HAQ remained significantly higher leading to a higher number of bioDMARDs prescribed in this group (Fig 1B).

More severe infections were reported in this subgroup (11.5% vs 4.2%). Bone densitometry values, number of fractures, and cardiovascular profiles were similar between groups.

Conclusion: In our ERA cohort, initiation of GC treatment does not add additional benefit for the short and long-term control of the disease.

GC were more prescribed in seronegative RA patients with higher level of inflammation and we confirm that patients exposed to higher cumulative doses of GC are at higher risk to develop severe infections.

Further studies are needed to support that GC induction therapy should not be offered to all ERA patients.

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FRI0022 THE ANALYSIS OF THE INVOLVEMENT OF TRANSFORMING-GROWTH INTERACTING FACTOR POLYMORPHISMS IN THE BONE METABOLISM OF RHEUMATOID ARTHRITIS

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Background: Rheumatoid arthritis (RA) is an autoimmune disease that mainly invades synovial membranes and further damage to articular cartilage and bone. The abnormal activation of transforming-growth factor β (TGF- β) in the subchondral bone is related to the onset of RA joint cartilage degeneration and transforming-growth interacting factor (TGIF) is a negative regulator of TGF- β signaling, while there is no literature addressing the relationship between TGIF polymorphisms and the bone metabolism of RA.

Objectives: The aim of the study was to comprehensively explore the possible association for single nucleotide polymorphisms (SNPs) in the TGIF gene with serum bone metabolism markers and RA susceptibility.

Methods: Three SNPs within the TGIF gene were genotyped in 155 RA patients and 168 healthy controls by high resolution melting (HRM) analysis in a case-control study. The serum levels of osteocalcin, bone alkaline phosphatase (BALP) and β type I collagen-crosslinked C telopeptide (β -CTX) were detected by electrochemical luminescence in 108 RA patients randomly selected from RA patients group.

Results: Genotypes and alleles frequency analysis showed rs7362020 was associated with bone erosion in RA ($P=0.012$, $P=0.003$, respectively) and individuals carrying T allele for rs7362020 showed a decreased RA risk (OR=0.59, 95% CI = 0.42-0.84; $P=0.003$). In the gender-specific analysis, rs73620203 polymorphism was associated with bone erosion of female RA patients (P values of the distribution of genotypes and alleles were 0.022 and 0.006, respectively). In addition, RA patients with CC, CT and TT genotypes at rs73620203 locus had statistically significant differences in serum osteocalcin and BALP ($P=0.006$, $P=0.037$, respectively) and the serum levels in TT genotype RA patients were significantly lower than CC and CT genotype RA patients. The serum levels of β -CTX in rs85440 AA genotype male RA patients were significantly higher than female RA patients ($P=0.001$), while the serum levels of osteocalcin and BALP in genotype AA, AG and GG female and male RA patients were not significantly different ($P>0.05$).

Conclusion: Our study provided the first evidence that rs73620203 is associated with bone erosion of RA and provided new insight into the relationship between three SNPs within TGIF gene and regulation of bone metabolism in RA patients of different genders.

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FRI0023 TREATING EARLY AND INTENSIVELY IS ASSOCIATED WITH LOWER FATIGUE LEVELS ON THE LONG TERM, EVEN IN PATIENTS WITH EARLY RHEUMATOID ARTHRITIS CONSIDERED TO HAVE A FAVOURABLE RISK PROFILE

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Background: Fatigue is reported in up to 90% of patients with established Rheumatoid Arthritis (RA). Fatigue has a large impact on patient's life and is perceived difficult to manage in many patients. The early disease course could constitute a window of opportunity to tackle fatigue.

Objectives: To explore that, if RA can be controlled rapidly, complaints of fatigue could be less in the long run, even in patients considered at low risk to develop a severe disease course.

Methods: Patients with a low risk profile recruited in the 2-year pragmatic Care in Early Rheumatoid Arthritis (CareRA) trial were used in this analysis. This low risk profile was based on the absence of erosions, rheumatoid factor, anti-citrullinated protein bodies or low disease activity status. The low-risk group was randomised to either a tight step-up starting with 15mg MTX weekly in monotherapy (MTX-TSU) or COBRA Slim, consisting of 15mg MTX weekly and a prednisone step-down scheme starting at 30mg. Fatigue was measured by the multi-dimensional fatigue inventory (MFI), a self-report instrument consisting of 20 questions with a Likert scale from 1-5 as answer. These 20 questions can be subdivided in five subscales (0-20) of four questions (higher scores indicating higher fatigue levels): general fatigue, mental fatigue, physical fatigue, reduced activity and reduced motivation. General fatigue means the general feeling of being tired. Mental fatigue implicates concentration and memory problems. Physical fatigue implicates a lack of energy and strength. Reduced activity means that patients can do less activities for example on one day. Reduced motivation means that patients don't want to plan or do things due to lack of motivation. MFI was obtained at baseline, at week 16, week 52 and week 104. Cobra Slim was compared with MTX-TSU by Mann-Whitney-U test. The 5 domains of the MFI of the two groups were compared by a generalized estimating equation (GEE) over 2 years adjusting for baseline MFI domain score and DAS28.

Results: Of the 90 patients recruited in the low-risk group, 80 (89%) patients completed the MFI at baseline. Randomisation was successful resulting in similar baseline characteristics and MFI levels between Cobra Slim (n=38) and MTX-TSU (n=42). After 2 years of treatment, DAS28CRP levels (Slim 1.9 ± 0.8 - MTX-TSU 2.2 ± 1.0 , $p=0.253$) and DAS28CRP remission (Slim 81.5% - MTX-TSU 77.1%, $p=0.677$) did not differ between patients. However, general (Slim 9.8 ± 4.1 - MTX-TSU 13.1 ± 4.0 , $p=0.005$) and mental (Slim 6.8 ± 2.7 - MTX-TSU 10.0 ± 4.9 , $p=0.022$) fatigue levels on the MFI were lower in the Cobra Slim group at week 104. GEE analysis confirmed that groups differed in the general ($p=0.026$) and mental ($p=0.013$) fatigue scale over 2 years (Figure 1).

Figure 1. DAS28CRP and MFI General Fatigue score over 2 years between groups

Conclusion: Patients treated intensively have lower fatigue levels over 2 years compared to patients treated more conservatively, even if disease activity became similar in the two groups over time. This underlines the importance of initiating an optimal intensive treatment even in so called low-risk patients. Moreover, our results show that fatigue is a heterogeneous concept, with different interactions between treatment and type of fatigue. Although our study was limited by a small sample size, the data clearly shows how to improve fatigue levels significantly in early RA.

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FRI0024 HOW OFTEN DOES REACHING TARGET MISS THE MARK? LONGITUDINAL PATTERNS OF REMISSION IN REAL-WORLD EARLY RHEUMATOID ARTHRITIS PATIENTS

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Background: Early diagnosis and rapid initiation of DMARDs following a treat-to-target approach have made remission a realizable goal for many with RA. Yet, some patients are unable to sustain remission over time.

Objectives: To describe longitudinal patterns of remission and identify predictors of sustained vs transient remission in real-world early RA patients.

Methods: Data were from the Canadian Early Arthritis Cohort (CATCH), a prospective study of early RA patients (symptoms < 1 year) treated in rheumatology clinics across Canada from 2007- 2019. The sample was limited to patients with active disease at enrolment who later reached remission (SDAI≤3.3) and were

followed for 12-24 months thereafter. Patients were classified as in sustained remission (Pattern 1) or transient remission with transient remission patients divided into those who transitioned from REM to LDA only (Pattern 2) and those who transitioned from REM to MDA or HDA (Pattern 3), over FU. Multi-adjusted multinomial regression was used to identify predictors of transient remission patterns.

Results: The study included 1,419 (46%) CATCH participants that reached remission. At enrolment, most (70%) were female, mean(sd) SDAI was high (27(15)) and 92% were treated with csDMARDs. Only 47% remained in sustained remission by 12-months and, only 40% by 24 months (Pattern 1) (Figure). Among patients with transient remission patterns, transitions to LDA only (Pattern 2) were more common than to MDA/HDA over FU (Pattern 3) (Fig 1). Older age, female sex, smoking, higher comorbidity index and positive serology, were significantly associated with transient remission patterns (Table). There were also borderline significant associations between transient remission patterns and longer time to remission, lack of early MTX treatment and reducing treatment after remission (Table).

Table. Adjusted Multinomial Regression Results of Predictors of Transient Remission Patterns over 24-Month Follow Up

	Pattern 2 vs. Pattern 1 OR (95% CI)	Pattern 3 vs. Pattern 1 OR (95% CI)
Age	1.01 (1.00, 1.02)	1.01 (0.99, 1.02)
Women vs Men	1.78 (1.33, 2.39)	1.63 (1.09, 2.44)
Current smoker	1.57 (1.09, 2.28)	1.53 (0.95, 2.47)
RDCI at baseline	1.11 (0.99, 1.25)	1.30 (1.13, 1.50)
Seropositive	1.38 (1.03, 1.85)	1.21 (0.81, 1.80)
MTX first 3 months	1.18 (0.85, 1.63)	0.76 (0.51, 1.12)
Time to remission (months)	1.01 (1.00, 1.01)	1.01 (1.00, 1.02)
Treatment reduction after REM vs. No Change	1.33 (0.96, 1.86)	1.01 (0.99, 1.02)

Pattern 1: Sustained REM

Pattern 2: Transient REM: Transitions to LDA only

Pattern 3: Transient REM: Transitions to MDA/HDA

RDCI: Rheumatic Disease Comorbidity Index (range 0-9)

Treatment reduction: Change from biologic or JAK to csDMARD(s) OR reduction in number of csDMARDs OR change from MTX +/- csDMARDs to non-MTX csDMARD

Figure. Distribution of Disease Activity States over 12-24 After First Achieving SDAI REM

Conclusion: Results of this large longitudinal analysis of real-world data suggests that < 50% of patients that reach remission sustain remission for 12-24months. Closer monitoring of patients with prognostic indicators for transient remission and additional research focusing on why remission is lost may help improve the rates of sustained remission.