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SAT0289

LONG-TERM EFFECTS OF TNF-ALPHA INHIBITORS ON BONE MINERAL DENSITY AND THE INCIDENCE OF VERTEBRAL FRACTURES IN PATIENTS WITH ANKYLOSING SPONDYLITIS

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Background: Ankylosing Spondylitis (AS) is not only characterised by pathological bone formation leading to ankylosis, but also by bone loss which may lead to vertebral fractures (VFX). TNF-alpha inhibitors (TNFi) have proven to be effective in blocking the inflammatory process. A few studies also showed an increase of Bone Mineral Density (BMD) in AS patients treated with TNFi¹⁻³; however, the incidence of VFX after two years of treatment was increased.³⁻⁴

Objectives: To evaluate the long-term effect of TNFi on BMD and the incidence of VFX in patients with AS.

Methods: Consecutive TNFi naive AS patients (who fulfilled the Modified New York criteria) were included. Patients were recruited from the VUmc and Reade and were treated with TNFi for 4 years. BMD at hip and lumbar spine (LS) were measured at baseline and after 4 years. T-scores were categorised as 'normal BMD', 'osteopenia' and 'osteoporosis', based on the WHO osteoporosis criteria.⁵ The incidence of VFX was determined by two observers using the Genant method.⁶

Results: In total, 107 AS patients with complete datasets (68.2% male) were included. The mean age was 42.6 years and the disease duration (time since diagnosis) was 11.0 years. The use of steroids or osteoporosis prophylaxis varied respectively between 0.9% and 2.8%. At baseline 40.1% of the patients had a decreased BMD of the hip and 40.2% of the spine, of whom 27 patients (26%) had both a decreased hip BMD as well as a decreased lumbar BMD. The BMD of spine and hip improved after 4 years of TNFi treatment (table 1). In 13 patients (12.1%), 14 VFX were observed both at baseline and after 4 years of TNFi-treatment, 26 VFX were observed in 21 patients.

After 4 years, 4 out of 21 patients with ≥ 1 VFX had a decreased BMD at hip and lumbar spine whereas the other 17 patients had a normal BMD. The majority of VFX was localised in the mid or lower thoracic spine.

Table 1 BMD measurement in spine and hip of 107 AS patients treated with TNFi.

	Baseline*	After 4 years of TNFi**
Osteopenia LS	34 (31.8)	25 (23.4)
Osteoporosis LS	9 (8.4)	2 (1.9)
Abnormal BMD LS	43 (40.2)	27 (25.3)
Osteopenia total hip	39 (36.4)	31 (29.0)
Osteoporosis total hip	4 (3.7)	3 (2.8)
Abnormal BMD total hip	43 (40.1)	34 (31.8)
Patients with VFX	13 (12.1)	21 (19.6)
Total number of VFX	14	26

* 1 patient with spondylolysis; 4 patients with a total hip replacement

** 2 patients with spondylolysis; 5 patients with a total hip replacement

LS: lumbar spine, Abnormal BMD = osteopenia and/or osteoporosis according to WHO guideline⁵

Vertebral fractures (VFX) are presented in number of patients with a VFX and the actual prevalence of VFX. Outcomes are presented in n (%)

* p < 0.05, ** p < 0.001

Conclusions: The percentage of relatively young AS patients with a decreased BMD at baseline of the hip and lumbar spine was high (40%). After 4 years of TNFi-treatment, the BMD of the lumbar spine improved in 14.9% of the patients and of the hip in 8.3% of the patients. At baseline, 12% of the patients had vertebral fractures which increased to 21% after 4 years of treatment. A normal population of 1984 individuals above 50 years showed a prevalence of 8.9% osteoporotic spinal fractures.⁷ Probably, the start of treatment with TNFi at an earlier stage of the disease might prevent the onset of fractures in AS.

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SAT0290

CANADIAN ADALIMUMAB POST-MARKETING OBSERVATIONAL EPIDEMIOLOGICAL STUDY ASSESSING THE EFFECTIVENESS OF ADALIMUMAB VS. NON-BIOLOGIC DMARDS IN ANKYLOSING SPONDYLITIS (COMPLETE-AS): 12-MONTH EFFECTIVENESS DATA

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Background: COMPLETE-AS is an ongoing Canadian observational study of anti-TNFα naïve adults with active AS per the judgment of the treating physician, who require change in current AS treatment to either¹ a subsequent NSAID or non-biologic disease modifying antirheumatic drug (nbDMARD group), or² to adalimumab (ADA group).

Objectives: The aim of this analysis was to describe and compare the baseline demographic and disease parameters of patients in the nbDMARD and ADA groups and to compare the 12 month effectiveness of the two treatment methods.

Methods: In the current analysis patients enrolled between July/2011 – Jun/2016 were included. Outcome measures analysed were extra articular manifestations (EAM 1: IBD, psoriasis, uveitis, enthesitis; EAM 2: IBD, uveitis, enthesitis), disease activity (BASDAI), functional status (BASFI), and quality of life (QoL; SF-12). Between-group differences in baseline parameters were assessed with the Chi-square test for categorical variables and the independent samples t-test for continuous variables. Baseline-adjusted changes in BASDAI and BASFI over time were compared between the two groups using linear mixed models.

Results: A total of 609 patients (nbDMARD n=177, ADA n=432) were included in the current analysis. No significant differences in baseline demographics were observed between the two groups. However, at baseline, patients initiating ADA were more likely to be unemployed (38% ADA vs. 27.1% nbDMARD, p=0.009), had higher mean BASDAI (6.4 vs. 5.0; p<0.001) and BASFI (5.5 vs. 3.7; p<0.001) scores, and worse QoL (SF-12 PCS: 24.4 vs. 24.7, p=0.002) at baseline. The baseline prevalence of EAMs was comparable between the two groups (EAM 1: 34.7% vs. 31.6%, p=0.454; EAM 2: 25.9% vs. 22.6%, p=0.381). However, IBD was more common among patients initiating ADA treatment (9% vs. 4.5%, p=0.062).

After 12 months of treatment the prevalence of EAMs decreased significantly in the ADA group (EAM 1: p=0.004; EAM 2: p=0.033) but not in the nbDMARD group. After adjusting for baseline values, patients treated with ADA had numerically lower BASDAI score (least square means – LSM: 3.7 vs. 4.3, p=0.171) significantly lower BASFI score (2.9 vs. 3.6, p=0.031) scores, and comparable SF12-