Real world use of secukinumab for treatment of axial spondyloarthritis and psoriatic arthritis: nationwide results from the ATTRA registry

Sirs,

Until recently, inhibitors of tumour necrosis factor (TNFi) had been the only bDMARD treatment option for patients with axial spondyloarthritis (AxSpA) and psoriatic arthritis (PsA). This situation changed when anti-interleukin-17A monoclonal antibody secukinumab (SEC) became available for treatment of spondyloarthritides (1, 2). It has been shown recently, that baseline patient characteristics may explain some of the differences in response to bDMARDs in PsA (3). In order to gain better understanding how the new treatment option is utilised in clinical practice we compared baseline characteristics of patient populations starting treatment with SEC *versus* TNFi during the first year of SEC availability in the Czech Republic using data from the ATTRA registry. ATTRA is a prospective registry of patients receiving bDMARD therapy for rheumatic diseases collecting data on efficacy, safety and quality of life of all patients treated in the Czech Republic. The indication criteria for TNFi and SEC use are identical and the choice of drug is left to the discretion of treating rheumatologist. All adult patients with AxSpA and PsA who either started biological therapy or switched to a new drug during the period between March 1st 2017 and March 1st 2018 were considered. Baseline characteristics of patients were described and compared between the two treatments. Median (5;95%) and absolute/relative frequencies were used to describe continuous and categorical variables, respectively. *p*-values of Fisher's exact test and Mann-Whitney test are given when assessing difference between groups in categorical and continuous variables. Odds for the prescription of SEC *versus* TNFi were assessed using logistic regression. A total of 743 bDMARD treatments were initiated or changed during the study period, 682 (460 AxSpA, 222 PsA) with sufficient available data were included in the analysis. The proportion of patients receiving SEC as first line therapy was not significantly different from that of TNFi initiators for both diagnoses (48.1% *vs*. 49.9%, *p*=0.804 for AxSpA and 47.5% *vs*. 55.2%, *p*=0.361 for PsA). The OR of receiving SEC instead of TNFi when switching therapy after 1, 2 or ≥3 TNFi were 0.52 (95% CI: 0.26; 1.01), 1.26 (95% CI: 0.58; 2.73) and 4.18 (95% CI: 2.01; 8.67) for patients with axial spondyloarthritis and 0.43 (95% CI: 0.18; 1.06), 2.57 (95% CI: 1.08; 6.13) and 6.43 (95% CI: 2.21; 18.70) for patients with psoriatic arthritis. Overall, patients starting SEC tended to have higher disease activity, *i.e*. higher BASDAI, BASFI or DAS28, ASDAS, more pain and worse measures of social and physical function (*i.e*. higher HAQ score, lower EUROQOL and corresponding domains of SF-36). However, these differences were driven by the subgroup changing bDMARD (switchers) as there were no significant differences among patients receiving their first line bDMARD therapy (initiators) (Table I).

In conclusion, we provide the first description of real life experience with SEC therapy in clinical practice. Our results show

Table 1. Selected baseline characteristics of patients starting (initiators) or changing (switchers) bDMARD treatment for axial spondyloarthritis and psoriatic arthritis. Statistically significant differences are in bold.

AXIAL SPONDYLOARTHRITIS (n=460)						
	Initiators (n=228)			Switchers (n=232)		
	SEC (n=37)	TNFi (n=191)	*p*-value	SEC (n=40)	TNFi (n=192)	*p*-value
Female gender, n (%)	10 (27.0%)	67 (35.1%)	0.448	13 (32.5%)	58 (30.2%)	0.851
Age in years, median (5;95%)	40.0 (26.0; 60.0)	41.0 (23.0; 59.0)	0.549	45.5 (29.5; 67.0)	44.0 (28.0; 62.0)	0.336
Disease duration in years, median (5;95%)	4.4 (0.6; 26.9)	4.4 (0.3; 24.0)	0.759	**7.4 (0.4; 21.6)**	**4.9 (0.4; 17.9)**	**0.013**
BMI, median (5;95%)	27.8 (18.7; 37.2)	26.7 (20.1; 36.9)	0.732	27.8 (21.5; 37.0)	28.0 (20.2; 36.0)	0.570
CRP mg/L, median (5;95%)	18.3 (1.8; 53.0)	17.5 (2.4; 50.0)	0.723	11.0 (1.1; 118.6)	8.6 (0.5; 60.6)	0.272
HAQ, median (5;95%)	1.3 (0.6; 2.3)	1.1 (0.4; 1.9)	0.154	**1.3 (0.1; 2.2)**	**0.8 (0.0; 1.9)**	**<0.001**
EUROQOL, median (5;95%)	0.2 (-0.1; 0.8)	0.2 (0.0; 0.8)	0.942	**0.6 (-0.1; 0.8)**	**0.7 (0.0; 1.0)**	**0.006**
SF-36 physical role functioning, median (5;95%)	47.5 (5.0; 75.0)	45.0 (10.0; 80.0)	0.608	**45.0 (10.0; 85.0)**	**65.0 (10.0; 95.0)**	**0.001**
SF-36 bodily pain, median (5;95%)	31.0 (0.0; 51.0)	31.0 (0.0; 52.0)	0.373	**31.0 (0.0; 74.0)**	**41.0 (0.0; 100)**	**0.006**
SF-36 social role functioning, median (5;95%)	50.0 (13.0; 63.0)	50.0 (13.0; 88.0)	0.400	**50.0 (25.0; 88.0)**	**63.0 (13.0; 100)**	**0.043**
BASDAI, median (5;95%)	7.1 (2.6; 9.3)	6.5 (3.5; 9.0)	0.199	**5.8 (2.0; 8.0)**	**3.5 (0.0; 8.6)**	**0.001**
BASFI, median (5;95%)	6.2 (1.4; 9.5)	5.6 (1.6; 8.5)	0.213	**4.6 (1.4; 8.3)**	**2.9 (0.0; 8.2)**	**0.001**
ASDAS, median (5;95%)	4.3 (2.6; 5.3)	4.1 (2.6; 5.3)	0.412	**3.5 (1.5; 5.5)**	**2.7 (0.7; 5.0)**	**0.005**
PSORIATIC ARTHRITIS (n=222)						
	Initiators (n=118)			Switchers (n=104)		
	SEC (n=28)	TNFi (n=90)	*p*-value	SEC (n=31)	TNFi (n=73)	*p*-value
Female gender, n (%)	15 (53.6%)	46 (51.1%)	0.832	16 (51.6%)	40 (54.8%)	0.831
Age in years, median (5;95%)	45.5 (32.0; 70.0)	49.5 (33.0; 68.0)	0.081	50.0 (40.0; 65.0)	54 (31.0; 76.0)	0.081
Disease duration in years, median (5;95%)	8.7 (0.2; 23.9)	7.4 (0.8; 21.7)	0.658	6.5 (1.0; 25.1)	7.6 (0.2; 25.0)	0.730
BMI, median (5;95%)	28.4 (20.8; 45.1)	28.9 (21.5; 40.2)	0.852	**30.3 (24.6; 38.0)**	**27.2 (21.3; 35.3)**	**0.041**
CRP mg/L, median (5;95%)	21.2 (1.0; 69.0)	14.0 (2.0; 72.8)	0.567	**9.7 (1.3; 63.3)**	**4.5 (0.3; 55.2)**	**0.043**
HAQ, median (5;95%)	1.4 (0.5; 2.5)	1.4 (0.4; 2.1)	0.439	**1.4 (0.4; 2.4)**	**0.6 (0.0; 2.0)**	**<0.001**
EUROQOL, median (5;95%)	0.2 (-0.2; 0.8)	0.1 (0.0; 0.7)	0.346	**0.1 (0.0; 0.7)**	**0.7 (0.0; 1.0)**	**<0.001**
SF-36 physical role functioning, median (5;95%)	50.0 (5.0; 85.0)	45.0 (5.0; 75.0)	0.294	**45.0 (10.0; 80.0)**	**70.0 (15.0; 95.0)**	**0.001**
SF-36 bodily pain, median (5;95%)	31.0 (12.0; 52.0)	22.0 (0.0; 52.0)	0.584	**31.0 (0.0; 62.0)**	**52.0 (10.0; 84.0)**	**<0.001**
SF-36 social role functioning, median (5;95%)	50.0 (13.0; 100)	38.0 (13.0;100)	0.367	**38.0 (0.0; 63.0)**	**50.0 (25.0; 88.0)**	**<0.001**
DAS28, median (5;95%)	5.1 (2.7; 6.5)	5.3 (3.2; 6.3)	0.574	**5.0 (2.2; 6.7)**	**2.5 (1.4; 6.0)**	**<0.001**
DAPSA median (5;95%)	26.4 (14.3; 68.1)	33.1 (12.7; 56.5)	0.154	22.6 (8.7; 71.1)	11.2 (7.9; 36.8)	<0.001
Presence of skin psoriasis, n (%)	21 (95.5%)	77 (91.7%)	1.000	15 (88.2%)	56 (90.3%)	1.000

ASDAS: Ankylosing Spondylitis Disease Activity Score; BASDAI: Bath Ankylosing Spondylitis Activity Index; BASFI: Bath Ankylosing Spondylitis Functional Index; bDMARD: biologic disease-modifying drug; BMI: body mass index; DAPSA: Disease Activity in Psoriatic Arthritis; DAS28: Disease Activity Score (28 joints); HAQ: Health Assessment Questionnaire; SEC: secukinumab; SF-36: Short Form Health Survey; TNFi: tumour necrosis factor inhibitor.

that for bDMARD naïve patients SEC was considered to be equivalent to TNFi by prescribing rheumatologists as reflected by the fact that proportion of patients receiving SEC as first line bDMARD and baseline characteristics of patients were comparable with those of TNFi treated patients. After failure of 1 TNFi switching to another TNFi was the preferred step, after failure of ≥3 TNFi patients were significantly more likely to be treated with SEC.

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