Quantifying and predicting the effect of anti-TNF therapy on axSpA-related fatigue: results from the BSRBR-AS registry and meta-analysis. [Dataset]

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SUPPLEMENTARY MATERIAL

Search strategy

(Ovid MEDLINE, EMBASE, Evidence Based Medicine (EBM), and Cochrane Library)

For EMBASE, MEDLINE, and EBM trials

#1: (axial spondyloarthritis).mp OR (ankylosing spondylitis).mp OR axspa.mp OR as.mp OR spondyloarthritis/exp OR spondyloathritis.mp.

#2: (biologic$ ADJ5 treatment).mp OR (biologic$ ADJ5 therapy).mp OR (biologic$ ADJ5 agent).mp OR (anti$tnf).mp OR (tnf inhibitor).mp OR (anti tumo$r necrosis factor).mp OR biologic* OR (tnfi).mp OR etanercept.mp OR infliximab.mp OR anakinra OR adalimumab.mp OR abatacept.mp OR golimumab.mp OR rituximab.mp OR certolizumab.mp OR tocilizumab.mp OR (anti ADJ tumo$r ADJ necrosis ADJ factor).tw.

#3: (fatigue).mp OR fatigue/exp OR tiredness.mp.

#1 AND #2 AND #3

Supplementary Table S1 – BSRBR-AS study: characteristics of those included in the current analysis vs. those excluded

Characteristics	**included N. 998**	**excluded N. 1,422**
	mean(SD)/N(%)	**mean(SD)/N(%)**
Gender (male)	693 (69%)	962 (68%)
Age, mean years*	51.5 (14.4)	45.7 (13.9)
Disease duration, mean years	29.1 (12.1)	28.4 (11.1)
Disease classification*		
modified New York	729 (73%)	883 (62%)
ASAS imaging (not mNY)	234 (23%)	474 (33%)
ASAS clinical only	35 (4%)	65 (5%)
Extra-articular manifestations		
uveitis present	252 (25%)	316 (22%)
inflammatory bowel disease present	102 (10%)	145 (10%)
psoriasis present	107 (11%)	157 (11%)
BASDAI * (scored 0 (best) to 10 (worst))	4.5 (2.5)	5.2 (2.5)
BASFI * (scored 0 (best) to 10 (worst))	4.4 (2.9)	4.9 (2.9)
BASMI * (scored 0 (best) to 10 (worst))	4.0 (1.9)	3.8 (2.1)
Fatigue * (scored 0 (best) to 11 (worst)	3.9 (3.6)	4.5 (3.8)

* statistically significant difference between those included and excluded ($p \leq 0.05$)

ASAS – assessment of spondyloarthritis; BASDAI – bath ankylosing spondylitis disease activity index; BASFI – bath ankylosing spondylitis functional index; BASMI – bath ankylosing spondylitis metrology index.

Supplementary Table S2 Characteristics of studies eligble for meta-analysis, reporting the impact of biological therapy on fatigue in patients with axSpA

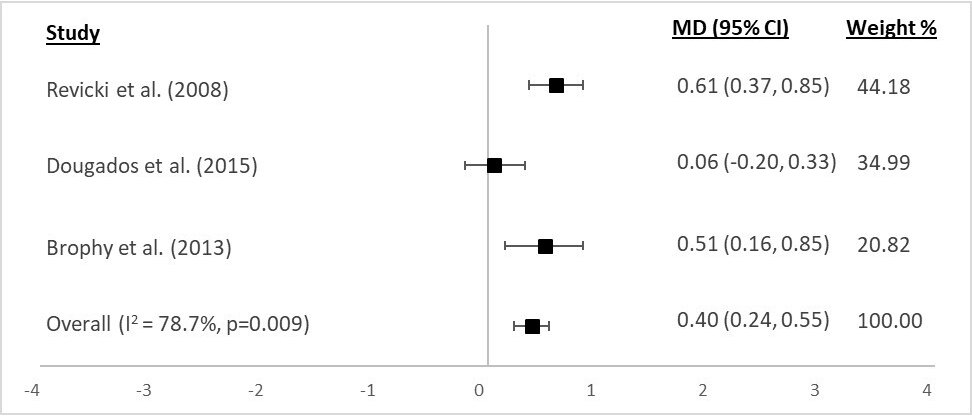
Authors	Year	Study Location	Sampling Frame	Study Design	Sample size for analysis	Biological Therapy N	Control N	Fatigue Measure	Biologic Used	Follow-up used**
Wanders *et al*	2004	Not stated	AS patients with active spondylitis (morning stiffness >45 min, IBP, moderate/high disease activity by patient & physician global assessment)	Double blind, placebo controlled randomized study.	40	20	20	Fatigue Severity Scale*	Etanercept	4 weeks
Brophy *et al*	2013	Wales, UK	AS patients recruited to disease database via rheumatologist, GP or local AS support group.	Mixed methods model comparing those starting an anti-TNF therapy compared to those who were not. Fatigue assessed by 3 monthly questionnaire.	235	39	196	BASDAI fatigue item	Any anti TNF	Average 8 months
Dougados *et al*	2015	14 countries in Europe, Asia and	Multicentre. axSpA patients (not mNY), aged ≥18 to <50 years, with IBP, symptom duration	Ongoing multicentre, double blind, 2 period, randomised phase IIIB clinical controlled trial.	215	106	109	Multidimensional Fatigue Inventory	Etanercept	12 weeks

		Latin America	of >3 month to <5 years and active disease (defined as BASDAI ≥4.	Double blinded to week 12 and open label to week 24. F/U to 96 weeks						
Revicki *et al* (ATLAS)	2008	21 sites in US 22 in Europe	Multicentre. AS patients (mNY), ≥18 years of age with ≥1 inadequate response/ intolerance to NSAIDs. Failure on ≥1 DMARD also permitted.	Multicentre, randomized, double blind, placebo controlled, Phase III study. Double blinded to week 12. Weeks 12-20 open label for non-responders. Full open label after week 24 up to 5 years.	315	208	107	BASDAI fatigue item	Adalimumab	12 & 24 weeks

*Krupp LB, LaRocca NG, Muir-Nash J, Steinberg AD. The Fatigue Severity Scale: application to patients with multiple sclerosis and systemic lupus erythematosus. Arch Neurol 1989;46:1121–3.

** Follow-up which included a measure of fatigue

IPB: inflammatory back pain


Study
MD (95% CI)
Weight %
Revicki et al. (2008)
0.61 (0.37, 0.85)
44.18
Dougados et al. (2015)
0.06 (-0.20, 0.33)
34.99
Brophy et al. (2013)
0.51 (0.16, 0.85)
20.82
Overall (I² = 78.7%, p=0.009)
0.40 (0.24, 0.55)
100.00
-4
-3
-2
-1
0
1
2
3
4