The Relationship between Disease Activity, Functional Index, Sleep Quality, Anxiety, Depression, Fatigue and Quality of Life in Patients with Ankylosing Spondylitis

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Abstract: Background
Sleep problems, psychological factors may be important in the assessment and management of ankylosing spondylitis (AS).
Objectives
To compare sleep quality of AS patients with that of healthy controls (HC) and its association with disease spesific variables, emotional status (anxiety and depression), fatigue level and quality of life.
Methods
A total of 60 patients (40 male and 20 female)), who fulfilled the modified New York criteria and 30 age and sex-matched healthy controls were enrolled. Bath Ankylosing Spondylitis Disease Activity Index (BASDAI), and Functional Index (BASFI), The Pittsburg Sleep Quality Index (PSQI), Hospital Anxiety and Depression Scale, Fatigue Severity Scale and AS-spesific quality of life (ASQoL) were assessed. The cutoff scores are estimated as 10 and 7 for anxiety and depression scale, respectively. A score of 4 or higher and a score of higher than 5 indicates severe fatigue and poor sleep quality, respectively.
Results
AS patients had statistically significant poorer sleep quality, higher depression and fatigue scores than those compared to healthy controls (Table 1). The AS patients with high disease activity score (BASDAI ≥4) had statistically significant poorer sleep quality (4 and 8, p<0,001), higher depression (5 and 8, p=0,02) and fatigue (4,1 and 5,1; p<0,001) scores, worse ASQoL (4 and 11, p<0,001) than those compared to the patients with low disease activity. In AS patients, there were significant correlations between disease variables (BASDAI and BASFI), PSQI, Hospital Anxiety and Depression Scale, Fatigue Severity Scale and ASQoL (Table 2). AS patients using only nonsteroid antiinflammatory drugs (n=11) had poorer PSQI score than that compared to AS patients under anti-TNF (n=15) (9 and 4; p<0,05)and DMARD therapies (n=34) (9 and 5,5; p=0,019) and HC (9 and 3; p<0,001), respectively.

Variables	HC (n=30)	Patients (n=60)	p
PSQI	3(1–11)	6(0–18)	<0.001
PSQI>5	3(10.0%)	31(51.7%)	<0.001
Depression score	5(0–13)	6(0–14)	<0.001
Depression score>7	6(20.0%)	26(43.3%)	0.029
Anxiety score	6(0–14)	7(1–17)	0.301
Anxiety score>10	4(13.3%)	15 (25.0%)	0.201
Fatigue score	3.3(0–6.5)	4.7 (1.2–7)	0.029
Fatigue score≥4	12(40.0%)	41(68.3%)	0.010

Table 1. The scores of PSQI, depression, anxiety, fatigue in study group

PSQI	r=0.697, p<0.001	r=0.582, p<0.001
Depression	r=0.336, p=0.009	r=0.363, p=0.004
Anxiety	r=0.413, p<0.001	r=0.375, p=0.003
Fatigue	r=0.592, p<0.001	r=0.506, p<0.001
ASQoL	r=0.654, p<0.001	r=0.665, p<0.001

Table 2. Correlations in patients with AS

Key words: ankylosing spondylitis, disease activity, sleep quality, anxiety, depression, fatigue