

## Smoking and Its relationship with clinical, radiological and functional status in patients with ankylosing spondylitis

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In recent years, smoking has been reported as an environmental risk factor that influence the course of certain diseases such as psoriasis, ulcerative colitis and spondyloarthritis (SpA), especially ankylosing spondylitis (AS). **Objective:** To investigate the possible effect of smoking on disease activity, functional capacity, quality of life and radiographic damage in patients with AS. **Material and Methods:** Consecutive patients  $\geq 18$  yrs old with AS (ASAS 2009 criteria) were included. We recorded demographic data, age at onset of symptoms, duration of disease, disease-related symptoms, comorbidities and toxic habits (specifically about current or past smoking and number of packs / year (p / y)). Clinical and therapeutic aspects of the disease were collected prospectively in our AS outpatient clinic. Specific questionnaires to determine disease activity (BASDAI), functional capacity (BASFI), quality of life (ASQoL), metrology (BASMI) were performed every 6 months. Cervical, lumbar and pelvic X-rays were performed yearly and read by a single, blinded observer, according to BASRI. Comparison of categorical variables was assessed by Chi 2 or Fisher exact test and continuous variables by T test and ANOVA. Pearson correlation, multiple linear and logistic regression, were used in the analysis. **Results:** We studied 147 patients, 111 (75.5%) were male, with a median age of 46 years (IQR 32-56) and a median of disease development of 16 years (IQR 8-25). 51 (34.7%) patients had axial commitment and 96 (65.3%) mixed. Medium (IQR) for: BASDAI 4.5 (2.5-6.4), BASFI 4.3 (1.6-6.7), BASMI 4.3 (2.7-6), ASQoL 8 (4-11), BASRI 8.5 (6-12.7) and mSASSS 23 (7 -50.7), respectively. Comorbidities frequency was 130/147 (91.5%) and 17 (11.6%) patients had one or more hip replacements. Smoking was observed in 66 (44.9%) patients (50% were past-smokers), the median pack year was 13.5 (IQR 5-32). In univariate analysis, smoking was associated with worse functional capacity (BASFI 4.9 in smokers vs. non-smokers 3.7,  $p = 0.01$ ) and higher frequency of comorbidities (98.5% in smokers vs. nonsmokers 80.2%,  $p < .01$ ). The association of smoking and worse functional capacity remained as an associated variable in multiple regression analysis after adjusting for disease duration and the presence of comorbidities. (OR: 1.82 95% CI 1.08-3.07) **Conclusions:** Smoking adversely affects the functional capacity of our patients with AS. We did not observed that smoking has had a major impact in quality of life, metrology or radiographic damage in our cohort of patients with AS.