

## Impact of Overweight and Obesity on Disease Activity of Autoimmune and Chronic Inflammatory Arthritis in Patients Treated with AntiTNF Drugs

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**Introduction.** Studies show that obesity affects the course of inflammatory arthritis (IA) affecting pharmacokinetic properties of drugs. The impact of overweight and obesity (characterized by body mass index (BMI) during the antiTNF drug treatment of autoimmune chronic IA such as rheumatoid arthritis (RA), ankylosing spondylitis (AS), psoriatic arthritis (PsA) and juvenile idiopathic arthritis (JIA) still remains a challenge.

**Aim, Materials and Methods.** The aim of the study is to determine whether overweight and obesity affects disease activity in patients with IA treated by antiTNF drugs such as etanercept (ETN) and adalimumab (ADA). 77 patients (35 males, 42 females) with IA were included in cross-sectional study conducted at Pauls Stradins Clinical University Hospital from November 2016 till February 2017. Parameters were chosen for the analysis: BMI, WC, disease activity score 28 used c-reactive protein (DAS28crp) and the Bath ankylosing spondylitis disease activity index (BASDAI). Patients were split in two groups according to BMI (normal < 25 kg/m<sup>2</sup>, overweight and obese ≥ 25 kg/m<sup>2</sup>). Active disease was defined by DAS28crp ≥ 2.6, BASDAI ≥ 4. The link between parameters was evaluated by using IBM SPSS Statistics.

**Results.** Spectrum of IA was: 27 (35%) RA, 13 (17%) adults with JIA, 9 (12%) PsA and 28 (36%) AS patients. 53 (69%) patients were treated by ETN and 24 (31%) by ADA, the mean period of drug usage was 18.6 (SD 16.1) months for ETN and 15.6 (SD 12.2) months for ADA patients. The mean values of BMI were 29.5 (SD 6.3) kg/m<sup>2</sup>, DAS28crp 3.2 (SD 1.4) and BASDAI 3.3 (SD 1.9). 57 (74%) patients were included in the group with increased BMI. 33 (58%) patients had active disease in group with overweight and obesity comparing with only 9 (45%) with normal BMI ( $p = 0.43$ ). The mean value of DAS28crp and BASDAI in group with higher BMI was accordingly 3.37 (SD 1.3) and 3.26 (SD 2.0) comparing with normal range BMI group – 3.13 (SD 1.6) and 3.30 (SD 2.0),  $p = 0.22$  and 0.80, respectively, without statistically significant validity.

**Conclusions.** These results showed that DAS28crp and BASDAI are not affected by BMI for IA patients treated with antiTNF drugs in the study. Further prospective studies are needed to answer whether body weight could represent a modifiable factor to achieve remission for IA patients treated with antiTNF drugs.