

***IL-10* haplotypes and TNF- α levels are associated with low muscle mass in patients with chronic hepatitis C.**

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Background: Despite the negative impact of low muscle mass (MM) on the survival of cirrhotic patients, the mechanisms linked to MM loss are not completely understood in patients with chronic hepatitis C (CHC). **Objectives:** To evaluate whether the *IL-10* haplotype (-1082G>A, -819C>T, and -592C>A) and serum levels of tumour necrosis factor- α (TNF- α) were associated with low MM in CHC patients. **Methods:** 94 consecutive CHC outpatients (mean age, 50.3 \pm 11.5 yrs.; 74.5% males; 68.1% without cirrhosis and 31.9% with compensated cirrhosis) and 164 healthy controls were prospectively enrolled. SNPs were genotyped by RT-PCR. Serum levels of TNF- α were measured by ELISA. CHC patients, prospectively, underwent scanning of the lean tissue, appendicular skeletal muscle mass (ASM), and fat mass by dual-energy X-ray absorptiometry. The data analysed included appendicular skeletal mass (ASM) standardized for height (ASMI=ASM/height²). The cut-off points for low ASMI were 5.45 kg/m² and 7.26 kg/m² for women and men, respectively, according to Baumgartner *et al.* (1998). The International Physical Activity Questionnaire was used to determine the physical activity level. **Results:** *IL-10* SNPs were in Hardy Weinberg equilibrium. Patients and healthy subjects showed the same distribution of genotypes. Low ASMI was found in 12/94 (12.8%) of the patients with CHC. The *IL-10* haplotype ATA (low-producer genotype) was observed in 11/12 (91.7%) of the patients with low ASMI ($P=0.03$) and in only one of the patients without low ASMI 1/82 (1.2%) (Figure 1). In the multivariate analysis, low ASMI was significantly and independently associated with moderate-to-high physical activity (OR=0.31; 95%CI=0.09-0.98; $P=0.05$), TNF- α levels (OR=1.06; 95%CI=1.01-1.11; $P=0.02$) and ATA haplotype (OR=9.87; 95%CI=1.13-94.85; $P=0.05$). **Conclusion:** This is the first study to demonstrate that the *IL10* haplotype is associated with low ASMI in CHC patients. We also demonstrated that TNF- α is associated with low ASMI in CHC patients.

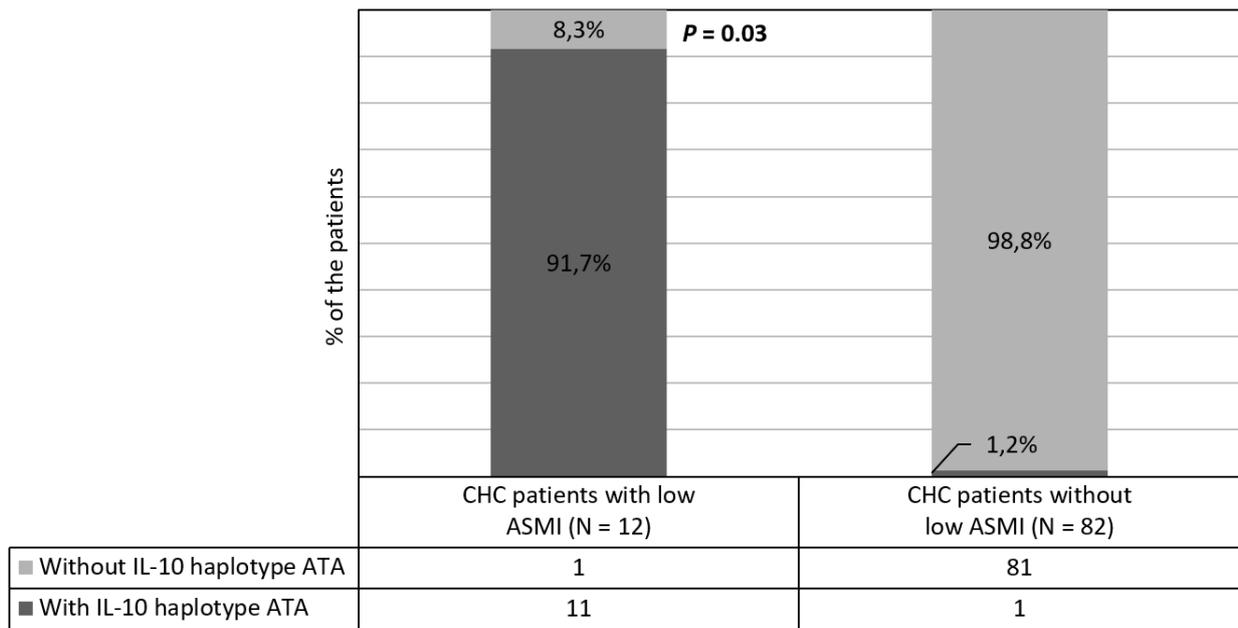


Figure 1. Association between the prevalence of the *IL-10* haplotype ATA and the low appendicular skeletal mass standardized for height (ASMI) in patients with chronic hepatitis C (CHC).