

FUNCTIONAL POLYMORPHISM IN THE INTERLEUKIN-6 GENE (IL-6 RS1800795), AND DEPRESSION INDUCED BY INTERFERON-ALPHA AND RIBAVIRIN DURING THE HCV TREATMENT

K.M. Małyszczak¹, D.A. Frydecka², T. Pawłowski¹, M. Inglot³

¹Department of Psychiatry, Division of Psychotherapy and Psychosomatic Medicine, ²Department of Psychiatry, Clinic of Psychiatry, ³Department and Clinic of Infectious Diseases, Hepatology and Acquired Immune Deficiencies, Wrocław Medical University, Wrocław, Poland

Introduction: The inflammatory response system is important in the pathophysiology of depressive symptoms that are frequent side effects of interferon-alpha (IFN-alpha) treatment. The functional rs1800795 IL-6 promoter SNP [-174 IL-6 (G > C)] has been described, with 'CC' genotype associated with lower synthesis of IL-6.

Objectives: The present study was carried out to determine whether rs1800795 IL-6 polymorphism is associated with severity of depression developed during IFN-alpha and ribavirin treatment.

Methods: We included 54 Caucasian patients receiving pegylated IFN-alpha and ribavirin treatment for chronic hepatitis C virus infection in the prospective cohort study. Symptoms of depression (Montgomery - Åsberg Depression Rating Scale, MADRS, Beck Depression Inventory, BDI) and neuroticism (Eysenck Personality Questionnaire - Revised, EPQ-R/N) were assessed before treatment, just after treatment and 24 weeks after treatment.

Results: The mean MADRS ratings were higher in subjects with genotype 'CC' ($p > 0.1$). On the other hand, the BDI and EPQ-R/N ratings were higher, and more stable in patients with 'GG' genotype ($p > 0.1$). Higher changes and the lowest values 24 weeks after the end of treatment were associated with 'CC' genotype ($p < 0.05$). The mean values were as follows (begin, end of treatment, 24 weeks after treatment): MADRS 'CC' (8.7, 11.3, 4.8), 'GG' (6.9, 11.1, 6.0); BDI 'CC' (6.9, 8.9, 3.2), 'GG' (8.4, 11.3, 6.2); EPQ-R/N 'CC' (8.3, 10.1, 7.3), 'GG' (10.4, 10.9, 9.2).

Conclusions: Genotype 'CC' of IL-6 rs1800795 polymorphism is associated with bigger differences in BDI and EPQ-R/N ratings during IFN-alpha and ribavirin treatment, and lower ratings after treatment.