Title: Polymorphisms in genes associated with the development of steroids-induced adverse events

Dr. Krzysztof 13093 Specjalski specjalski@poczta.onet.pl MD 1, Dr. Maria 13094 Porzezinska porzen@gumed.edu.pl MD 2, Dr. Alicja 13095 Sieminska asieminska@gumed.edu.pl MD 1, Prof. Dr Jan Marek 13096 Slominski jmslomin@gumed.edu.pl MD 2 and Prof. Dr Ewa 13097 Jassem ejassem@gumed.edu.pl MD 1. 1 Department of Allergology, Medical University of Gdansk, Poland and 2 Department of Pneumonology, Medical University of Gdansk, Poland.

Body: Glucocorticoids are widely used in the therapy of lung interstitial diseases or severe asthma because of their anti-inflammatory properties. Their actions are mediated through an intracellular receptor. Steroid - receptor complex translocates to a nucleus and binds DNA fragments referred to as glucocorticoids-response elements (GREs). Transcription regulation is associated with both therapeutic results and unwanted effects e.g. hypertension, diabetes, osteoporosis. Aim of the study The aim of this study was to evaluate the frequency of polymorphisms in the selected genes (ESR2, ATP11B, AT2R, Hind III) that may be responsible for the development of steroids-related complications in the population of Kashubia (northern Poland). Patients and methods Blood samples were collected from 250 participants randomly chosen from the population of Kashubia region. Presence of polymorphisms was determined by the means of PCR in the following locations: AT2R– 3123 A/C, osteocalcin- rs1800247C/T, ESR2- rs4986938 A/G, ATP11B- rs1916264 C/T. In statistical analysis χ2 test was used to determine whether the genotypes were in Hardy-Weinberg equilibrium. Results For all the genes polymorphisms were found in the specified locations. The frequencies of variants were as follow: AT2R- AA 36%, AC 19%, CC 45%; HindIII (osteocalcin)- CC 9%, TC 31%, TT 60%; ESR2- AA 10%, AG 39%, GG 51%; ATP11B- TT 1%, TC 19%, CC 80%. In ESR2, ATP 11B and osteocalcin genes variants were in Hardy-Weinberg equilibrium. Conclusion Polymorphisms in the genes that may be related to adverse events of steroids are frequent enough to continue to study on the associations between polymorphic variants and presence of side effects of steroids.