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Title: IL-4 polymorphisms in intrinsic and extrinsic asthma in a Greek population

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Body: Objective. The aim of the study was to investigate the IL-4 and IL-4Receptor polymorphisms in asthmatic patients and their association with asthma and asthma severity in a Greece. Materials and methods. Thirty patients with extrinsic asthma, mean age 35.2±14.51 years (Group A) and 22 patients with intrinsic asthma, mean age 47.1±16.3 years (Group B) were included in the study. All patients were recruited from the Asthma Clinic of Pulmonary Department, Aristotle University of Thessaloniki. 21 healthy control subjects, mean age 36.6±10.5 years were also included (Group C). All patients were subjected to skin prick tests, spirometry, methacholine challenge, determination of total serum IgE and exhaled FeNO. For the immunogenetic study DNA was extracted from the patients' peripheral blood samples. Determination of IL4-1098(T/G), IL4-590(C/T), IL4-33(C/T), IL4RPOS-1902, polymorphisms were performed by PCR (C:cytocine, T:thymine, G:Guanine και A:Adenine). Results. Analysis of IL4 -1098 polymorphisms showed an increased frequency of guanine in Group A (p=0.036) when compared to Group C, whereas for IL4 –590, CC genotype showed an increased frequency in Group C and C/T in Group A (p=0.003), Regarding asthma severity, severe asthma when compared with mild asthma, was associated with the IL-4TTT/GCC diplotype (p=0.033). Conclusions. This is the first study to investigate interleukin gene polymorphisms in a Greek asthmatic population and one of the very few studies on intrinsic asthma. IL-4 polymorphisms showed significant differences between patients with extrinsic and intrinsic asthma and also compared to controls. The above findings could be associated with risk of asthma development and asthma severity.