ABSTRACT

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The effect of familial burden and environment on the progress of allergic diseases in the last 10 years in the Czech Republic

Rigorous thesis

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INTRODUCTION: This wide-range study consists of three researches based on questionnares which were done in the years 2002, 2005 and 2011. They are based on questions regarding alergies in families, alergies which our proband has or does not have, questions about the period of pregnancy, delivery, early childhood etc. Results from each study were compared with the other studies we made, including studies made abroad. Areas which we focused on were the enviroment in which the proband lives, which type of dwelling it resides in or did reside in, familial burden, if have allergic family members an influence to develop an allergy and we bring new dates about allergic situation in the Czech Republic. We ultimately evaluate the effect of sex and date of birth.

OBJECTIVES: We tried to point out the heredity of allergic disease, bringing new results and individually comparing them with our three studies. We presented you with the name ‚epigenetics' and we pointed out the possible influences responsible for allergic expression. We compared our results with situations abroad.

METHODS: Each questionnare consists of nine pages concerning dwelling, physical characteristics of the proband, his or her allergy problems and these problems in the close family, something regarding food eaten by the child or by his/her mother during pregnancy. There were questions about the pregnancy period and the delivery, drugs taken during pregnancy and by the child suffering from allergies to prevent or protect allergy problems and other questions connected with home and psychological proband's characteristic. Our target group was children who were in seventh grade in elementary school, precisely between the ages of eleven or twelve. Questionnares were set to be filled in by parents, especially the mother of our proband. We devided them into allergic and non-allergic groups by certain rules. These two groups became the base of gaining probability of certain effects to the emergence of allergic problems.

RESULTS: The number of allergic poeple is decreasing according to our results. We registered 35,8 % allergic people in the study from the year 2002, 33,8 % in the study from 2005 and the last study in 2011 counted 33,7 %. Mother, father, older or younger siblings suffering from allergies carry the probability of $p \leq 0{,}001$. In each allergic type, allergic mothers have the biggest probability ($p \leq 0{,}001$). The other family members have certain influences on the seriousnes of the allergy and it depends on the type of allergy. We did not prove that sex or date of birth (season) produced any effect. The size of the city where the proband lives was significant only in the 2011 study, only in smaller areas with a maximum of 10 000 citizens ($p \leq 0{,}01$ and $p \leq 0{,}001$). Regarding the type of dwelling: blocks of flats ($p \leq 0{,}01$) and older detached house ($p \leq 0{,}05$) were only significant in the studies of 2002 and 2005. The most frequent type of allergy is eczema (38,1 %). The number of siblings is not significant.

CONCLUSION: The allergic mother carries the most significant probability of passing on an allergy to her offspring ($p \leq 0{,}001$). Even if his/her mother suffered from the

same type of allergy, this is on the same probability level. The effect of allergic father, older or younger sibling is significant too ($p \leq 0{,}001$). Progress of allergic diseases in the Czech Republic in 2002-2011 period stopped according to our results. Every third child at the age of twelve, on average, would be allergic. The effect of enviroment rating (type of dwelling and size of city, number of siblings that share one home during proband‘s first two years of life did not produce any significant results.