

## **ABSTRACT**

**BACKGROUND:** Asthma is one of the most often occurring children chronic diseases and its prevalence is steadily increasing. A lot of risk and protective factors influencing the development of asthma and atopic diseases have been described. It is necessary to gain more information about these factors, though.

**AIM:** To compare two different groups of children (the asthmatics and the reference group) being influenced by different risk and protective factors for developing asthma. Analysing the risk factors may help us to design preventive programmes and broaden the knowledge of pathobiology of the disease.

**METHODS:** 3848 structured anonymous questionnaires were sent to various primary schools round the Czech Republic. The questionnaires were completed by parents on behalf of their children. The aim of the questionnaires was to examine the prenatal conditions and postnatal conditions at the age of the first two years, at 6<sup>th</sup>-7<sup>th</sup>, 12<sup>th</sup>-13<sup>th</sup> year of age. 2050 completed questionnaires were sent back and we focused on the group of 118 asthmatic children and 765 non-allergic children as the reference group. Children were born in years 1992-1993 and all come from the Czech Republic. Answering positively the question about asthmatic symptoms and using antiasthmatic pharmacotherapy, children were indicated as the asthmatics. The reference group consisted of children who had never had any allergic symptoms, never used anti-allergic medication and their skin prick tests for the most common allergens were negative.

**RESULTS:** As statistically significant risk factors emerged male sex of children and prenatal factors as: risk pregnancy, fever episodes, urological inflammations and eczema, using the antibiotics and paracetamol-containing drugs, the change of physical activity, long gestational period and low age of the mother. Other risk factors (though not statistically significant) were the period of birth – months October-November and March-June and the fact that the mother was vomiting during pregnancy. Children with low risk (though not statistically significant) for developing the disease were those, whose mothers were consuming cottage cheese in pregnancy, were in contact with domestic animals and livestock during pregnancy and had higher number of birth. Another significant factor was that these children had a few siblings (especially older ones). We did not prove the influence of Caesarean section, the weight before pregnancy, the increase of weight during pregnancy and

the birth weight of the child as well as nutritional habits in pregnancy, smoking and gynecological inflammation for the developing of asthma.

**CONCLUSION:** It was proved that a lot of prenatal factors can be associated with the developing of asthma suggesting that not only the conditions of early life but also the conditions of prenatal life are crucial for the development of the immune system and may determinate following asthmatic status of the child.