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AN ANALYSIS OF AIRWAY OBSTRUCTION PARAMETERS IN HEALTHY CHILDREN DEPENDING ON MOTHER-SMOKING DURING PREGNANCY

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Backround: Smoking seriously damages human health. In danger is not only the active smoking person, but also people in his environment. It is well known fact that children of mothers smoking during pregnancy have predispositions to higher incidence of pulmonary diseases. Vasoactive substances as nicotine and NO in mother`s body are inductive or "triggering" factors of pulmonary diseases. Challenge for pediatricians is to diagnose these disorders as soon as possible. Examination of respiratory functions in uncooperative pediatric patient could be still problematic. A relatively new method for examination of respiratory functions in those patients is a non-calibrated respiratory inductive plethysmography (RESPITRACE). **Method**: The aim of our study was to analyze the effect/impact of smoking of mother during pregnancy on changes of values of the phase angle (φ) and T_{me}/T_E index in group of healthy children (with negative personal, family and allergic histories). A group of 127 healthy children (average age 11.3 ± 0.6month, 81 boys and 46 girls) was divided into two groups according to age: up to 6 month-old healthy children and children older than 6 months. In the first group were 7 healthy children those mothers smoked during gravidity a 34 children those mothers did not smoked. In group of children older than 6 months were 10 children which mothers smoked during pregnancy and 76 children of non-smoking mothers. Each of them was investigated by non-calibrated respiratory inductive plethysmography (RESPITRACE) in the supine position. We followed the changes of φ and T_{me}/T_E. Sedative medication was not applied to eliminate possible negative influence on results of the study. **Results:** We have found statistically significant decrease of phase angle j ($p<0.05$) and significantly higher values of T_{me}/T_E index in healthy children of non-smoking mothers against value of phase angle j and T_{me}/T_E index of smoking mothers children in group of 0-6 months old children. These differences were not confirmed in group of children older than 6 month of age. Moreover, we found statistically significant decrease ($p < 0.05$) of phase angle φ in group of smoking mother's children up to 6 month of age in comparison with children older than 6 month without any influence of smoking. Similarly, the values of T_{me}/T_E were found significantly higher ($p < 0.05$) in older smoking as well as non-smoking mother's children in comparison with the younger, smoking mother's children (0-6 month). **Conclusion:** The results of presented study revealed negative impact of mother's smoking during pregnancy represented by changes of airway obstruction parameters. This difference appeared especially in group of youngest children declines with age.

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