

AGE-DEPENDENT CHANGES OF AIRWAY OBSTRUCTION PARAMETERS

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Background: Non-calibrated respiratory inductive plethysmography (RESPITRACE) is a relatively new method for the examination of respiratory function in uncooperative pediatric patients. There is still little evidence in the literature concerning the physiological values of the phase angle (φ) and T_{me}/T_E index. These are the main predictors of airway obstruction in Respitrace measurements.

Material and methods: Our study was aimed at the assessment of age-dependent and sex-dependent changes of φ and T_{me}/T_E values in children up to 24 months of age. 127 healthy children (age 11.29 ± 0.61 month, 81 boys and 46 girls), divided in accordance to age into the four groups (0-6; 7-12; 13-18, and 19-24 month) were examined. Each child 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 a possible negative influence on the study results.

Results: Significant differences of phase angle φ and T_{me}/T_E index values in children among 7-24 month of age were not registered. We found a statistically significant decrease ($P < 0.001$) of φ in those groups of children in comparison with children up to 6 month of age. Similarly, the values of T_{me}/T_E were found significantly higher ($P < 0.05$) in older children (7-24 month) in comparison with the youngest ones (0-6 month). The sex-dependent changes of both measured parameters were not significant.

Conclusions: Our results suggest that T_{me}/T_E index might be a less variable, age-independent parameter of the Respitrace measurement than phase angle φ , but further research and analysis to arrive at a for correct verdict are warranted.