

COUGH REFLEX SENSITIVITY IN CHILDREN WITH SUSPECTED AND CONFIRMED GASTROESOPHAGEAL REFLUX DISEASE

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Introduction: Experimental and clinical studies revealed that gastroesophageal reflux disease (GERD) is associated with an appreciable increase in cough reflex sensitivity (CRS). The association between respiratory diseases and GERD is strongly evidenced also in children, but there is little evidence that GERD without aspiration is a frequent cause of cough in children.

Aim: The aim of this study was to test CRS in the group of children with suspected and confirmed GERD and to determine the role of proximal vs. distal reflux in changes of CRS.

Subjects and methods: In 20 children with suspected GERD and 13 children with confirmed GERD, the CRS test and 24 hour pH monitoring was performed. CRS was compared with a group of 27 healthy children. In 8 children with a dual sensor pH monitoring, we determined the differences in acid exposure between proximal and distal parts of the esophagus. For assessing the CRS, each subject inhaled 12 capsaicin aerosol concentrations (0.61 - 1250 $\mu\text{mol/l}$) at 1 min intervals. CRS was defined as the lowest capsaicin concentration that evoked 2 coughs.

Results: CRS in the group of children with suspected GERD (17.0 $\mu\text{mol/l}$ (6.4-45.6 $\mu\text{mol/l}$)) and with confirmed GERD (13.4 $\mu\text{mol/l}$ (3.6-50.9 $\mu\text{mol/l}$)) were significantly elevated ($P < 0.05$) compared with healthy children (72.1 $\mu\text{mol/l}$ (25.5-203.9 $\mu\text{mol/l}$)). According to the parameters of 24 hour pH monitoring, a significantly higher exposure to acid was in the distal compared with proximal esophagus. CRS did not significantly correlated with proximal esophageal acid exposure parameters, but correlated strongly negatively with all parameters of distal esophageal acid exposure registered in the supine position.

Conclusions: The results of CRS in children are similar to those found in adult patients. We suggest that distal acid reflux episodes play a major role in GERD-induced respiratory symptoms (cough) in children.

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