Pepsin Assay as a Diagnostic Marker for Laryngopharyngeal Reflux in Children with Otitis Media with Effusion

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Abstract

OBJECTIVE: Laryngopharyngeal reflux (LPR) is now of major interest as an aetiologic factor for chronic inflammatory condition of the middle ear in cases of otitis media with effusion (OME) in children. The objectives of this study were to evaluate the presence of pepsin/pepsinogen in middle ear effusions as a reliable diagnostic marker for LPR in children with OME.

MATERIAL AND METHODS: This is verified by assaying the level of pepsin/pepsinogen in middle ear spirates obtained from children with persistent OME using an ELISA assay. The role of pepsin/pepsinogen detected in these effusions was supported by carrying out dual-probe pH monitoring to delineate the possible underlying etiology of LPR in the development of the condition.

RESULTS: All effusions gave a positive result with anti-pepsin antibody but at a wide range of different levels. Pepsin/pepsinogen protein was present in the range of 0.085 – 15.128 ug/ml effusion (mean 2.63; SD 3.67). Dual-probe pH monitoring showed that 71% of the studied children had significant LPR. There was a significant positive correlation between the level of pepsin/pepsinogen assayed in the effusions of the children and the number of pharyngeal reflux episodes measured by pH monitoring.

CONCLUSIONS: Better understanding, identification, and control of reflux certainly will lead to improved outcome of medical and surgical interventions, as well as decreased morbidity, in children with LPR-related-OME or other tubo-tympanic disorders. Pepsin/pepsinogen analysis in effusions of children, using ELISA, can be considered a reliable marker for assessment of reflux in children with OME.