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Effect of PepsinA on Heat Shock Protein 70 (Hsp70) response in patients with chronic rhinosinusitis

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The objectives of this study are to investigate the relation between laryngopharyngeal reflux and chronic rhinosinusitis (CRS) and to explore the effect of pepsinA on the level of Hsp70. Nasal tissue specimens, nasal secretions and blood plasma obtained from 23 CRS patients with nasal polyps (CRSwNP), 26 CRS patients without nasal polyps (CRSsNP) and 9 normal controls were studied using Enzyme-Linked Immunosorbent Assay (ELISA) to measure pepsin levels in nasal secretions and blood plasma, Western analysis to measure Hsp70 and pepsinA levels in nasal tissue specimens and Quantitative real-time Polymerase Chain Reaction (Q-PCR) to detect the expression of pepsinogenA, HSPA5 and PTGS2 in nasal tissue specimens. The expression of PepsinA in nasal secretions was significantly higher in patients with CRS than in normal controls ($p < 0.05$). Hsp70 expression level was significantly increased in pepsinA-positive turbinate mucosa, compared with controls ($P < 0.001$) and pepsinA-negative turbinate mucosa in CRSwNP and CRSsNP patients ($P < 0.001$). Similarly, the Hsp70 expression level was significantly increased in pepsinA-positive polyp tissues, compared with the controls ($p = 0.021$) and pepsinA-negative polyp tissues in CRSwNP patients ($p = 0.016$). There was no significant Hsp70 expression difference between pepsinA-negative turbinate mucosa or polyp tissues and controls. Furthermore, no association was found between the presence of pepsinA and HSPA5 in nasal tissue specimens. The results suggest that the LPR may play a role in the development of CRS through the reflux of pepsinA. Increased expression of Hsp70 may be associated with the pathogenic mechanism of pepsinA.

Biography

Wang Jing is currently majoring in Clinical Medicine, working toward her MD from West China Medical School, Sichuan University, China. Her research direction is the relationship between Chronic rhinosinusitis and Laryngopharyngeal reflux. She is also interested in Nasal Physiology. She has published 2 SCI paper and has participated in international conferences.

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