Expression of GRIN2A in benign and malignant nasopharyngeal diseases and its clinical significance

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ABSTRACT. The gene glutamate receptor, ionotrophic, N-methyl D-aspartate 2A (GRIN2A) is associated with development and neuron viability, and our previous studies showed it to be substantially methylated in nasopharyngeal carcinoma, indicating a link to this disease. The aim of this work was to investigate GRIN2A expression and its clinical significance in nasopharyngeal carcinoma, in contrast to nasopharyngitis and nasopharyngeal precancerous lesions. Fifty patients with nasopharyngeal carcinoma were selected as study subjects, while 28 chronic nasopharyngitis patients and 22 individuals with nasopharyngeal precancerous lesions were used as controls. Immunohistochemical analysis was used to study GRIN2A protein expression, and its relationship with nasopharyngeal carcinoma clinical stage and histopathological features were assessed. GRIN2A appeared as yellow staining in the cytoplasm or nucleus. It was strongly expressed in the nasopharyngeal epithelial tissues of patients with
chronic nasopharyngitis and in nasopharyngeal precancerous lesions, the proportions of GRIN2A-positive cells being 82.1 and 72.7%, respectively. However, it was weakly expressed in nasopharyngeal carcinoma tissues, with 28.0% of cells testing positive (P < 0.001). No significant difference in the expression of GRIN2A was observed between different clinical stages and pathological grades. We conclude that weak GRIN2A expression is a major feature of nasopharyngeal carcinoma.

**Key words:** Nasopharyngeal carcinoma; GRIN2A