

Alterations in p53 expression and cell proliferation in esophageal epithelia among patients from geographical areas with high or low incidence of esophageal cancer

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Abstract

AIM: To study changes in p53 expression and cell proliferation in esophageal epithelia of subjects from high or low esophageal cancer incidence areas in Henan Province to understand their molecular basis.

METHODS: Esophageal endoscopic mucosa biopsies were acquired and histopathological examinations were performed on 220 subjects from high esophageal cancer incidence areas and 50 subjects from low incidence areas in Henan Province. Esophageal epithelia were diagnosed as normal, basal cell hyperplasia or dysplasia based on cell morphology and tissue structure. Immunohistochemistry avidin biotin

peroxidase complex (ABC method) was performed to analyze alterations in p53 and proliferating cell nuclear antigen (PCNA) expression in normal epithelia and epithelia with different lesion severities. The numbers of p53-positive and PCNA-positive cells were counted.

RESULTS: p53- and PCNA-positive nuclei were present in esophageal epithelia from subjects from both high and low incidence areas. The number of PCNA-positive cells gradually increased with lesion severity for both the high and low incidence areas. The number of p53-positive cells was higher in high incidence areas compared to low incidence areas, and rapidly increased with lesion severity. p53 expression positively correlated with PCNA expression.

CONCLUSION: The number of both p53- and PCNA-positive cells increased with lesion severity. p53 expression was higher in subjects from high esophageal cancer incidence areas compared to those from low incidence areas. These results may shed light into the molecular basis for the geographical distribution of esophageal cancer.

Key words: Esophageal neoplasms/pathology; Genes; p53; Esophagus/pathology

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