

DECREASED EXPRESSION OF MYH IS ASSOCIATED WITH ORAL ARCINOGENESIS IN BETEL-NUT CHEWERS

Che-Chun Su,¹ Kow-Young Tsai²

Department of Medicine,¹ and Department of Oral Surgery,² Changhua Christian Hospital, Changhua, Taiwan.

Abstract:

BACKGROUND: Oral cancer is one of the fastest increasing malignancies in Taiwan. Chewing of betel nuts, which contain many known carcinogens, is blamed for the local high incidence of oral cancer. Studies have shown an increased rate of DNA mutation in oral tissue of betel-nut chewers. A defect in MYH, a DNA repair enzyme, is present and linked with the predisposition to colorectal cancer in people with adenomatous polyposis coli. We studied MYH expression in oral tissue from habitual betel-nut chewers.

METHODS: Tissue expression of MYH was measured with immunohistochemistry, Western blot, and RT-PCR, and compared with that of normal oral mucosa from the same patient.

RESULTS: MYH expression in cancer, compared with that in normal oral mucosa, was increased in 5 patients (5/44), equal in 19 (19/44), and decreased in 20 (20/44). Expression of papilloma, a benign neoplasm, was increased (3/3). Expression of leukoplakia, a premalignant lesion, was also increased (2/4), or equal (2/4) to that in normal oral mucosa.

DISCUSSION/CONCLUSIONS: McNemar change test results in a $p < 0.05$, implying changes in MYH expression is highly associated with the oral carcinogenesis in betel-nut chewers. MYH expression is maintained in the process leading to either papilloma or leukoplakia. On the other hand, the expression is handicapped in the process of carcinogenesis. Maintenance of an adequate MYH expression is important in predicting outcomes in the oral mucosa of habitual betel-nut chewers.

Keywords: Betel nut, oral cancer, MYH