



Expression and clinical implications of enhancer of Zeste homolog 2 and p53 protein in squamous cell carcinoma and precancerous lesions in the cervix

H.M. Zhang¹, S.Q. Chen² and S.Z. Yao²

¹GuiZhou Provincial People's Hospital, Guiyang, China

²The First Affiliated Hospital, Sun Yat-Sen University, Guangzhou, China

Corresponding author: H.M. Zhang

E-mail: zhanghmvip@163.com

Genet. Mol. Res. 15 (2): gmr.15027408

Received August 11, 2015

Accepted January 8, 2016

Published June 17, 2016

DOI <http://dx.doi.org/10.4238/gmr.15027408>

ABSTRACT. We investigated the expression and clinical implications of enhancer of Zeste homolog 2 (EZH2) and p53 protein in cervical squamous cell carcinoma (SCC) and precancerous lesions. EZH2 and p53 expressions in SCC (168), cervical intraepithelial neoplasia (CIN)-I (19), CIN-II (35), and normal tissues (30) were detected by streptavidin-peroxidase-conjugation. The correlation between co-expression of EZH2 and p53 protein and the clinic pathological features and prognosis of SCC were discussed. The positive expression rates of EZH2 and p53 were 6.7, 37.0, and 75.6%, and 3.3, 21.1, and 39.3% in normal cervical tissues, CIN, and SCC, respectively, which were significantly different ($P < 0.05$). The positive expression rate of EZH2 and p53 protein in SCC patients with and without lymph node metastasis was 82.9 and 70.4% (EZH2) and 45.7 and 34.7% (p53), respectively, which was also a significant difference ($P < 0.05$). The progression-free survival (PFS) rates in followed-up patients ($N = 143$) who were EZH2- and p53-negative, EZH2- or p53-positive, and EZH2-

and p53-positive were 71.3 ± 1.9 , 66.1 ± 2.0 , and 51.3 ± 3.8 months, respectively, which was a significant difference ($P < 0.001$); the overall survival among these groups was 72.9 ± 1.1 , 68.6 ± 1.8 , and 57.4 ± 3.4 months, respectively ($P < 0.001$). Multivariate analyses revealed that EZH2 expression, lymph node metastasis, and tumor staging were independent prognostic factors of SCC. EZH2 and p53, which affect lymph node metastasis and prognosis of SCC, may play a key role in the occurrence and development of SCC.

Key words: EZH2; p53 protein; Squamous cell carcinoma; Cervical intraepithelial neoplasia; Immunohistochemistry; Survival analysis