

EXPRESSION OF bcl-2 AND p53 IN UTERINE CERVICAL CANCER

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ABSTRACT

The uterine cervix is potentially serious upper genital tract infection and a target for viral and other carcinogen, which may lead to invasive carcinoma. Squamous cell carcinoma of the uterine cervix may occur at any age from the second decade of live to senility. The author studied 20 cases of cervical carcinoma (Squamous cell carcinoma type), fixed in formalin embedded in paraffin. Immunohistochemistry was carried out using the avidin-biotin immunoperoxidase technique for p53 and bcl-2. Positive of p53 expression was detected all of the cases and bcl-2 expression was detected in 12 of 20 cases squamous cell carcinoma of the cervical cancer.

Keywords: p53, bcl-2, uterine cervical cancer, squamous cell carcinoma.

INTRODUCTION

The cervix is both sentinel for potentially serious upper genital tract infection and a target for viral and other carcinogenesis, which may lead to invasive carcinoma. Worldwide, cervical cancer alone is responsible for about 5% of all cancer death in women. Squamous cell carcinoma of the Uterine Cervix may occur at any age from the second decade of live to senility. Tumorigenesis is thought to result from a series of progressive gene alteration, including activation of oncogene and inactivation of tumor suppressor genes.

MATERIAL AND METHOD

Twenty paraffin embedded tissue samples from cervical biopsy specimen diagnosed as squamous cell carcinoma were retrieved from files of the Pathology Department at the Airlangga University, Dr Soetomo Teaching Hospital. All specimens had been routinely fixed in formalin and embedded in paraffin. Serial sections were cut from each sample. One section from each sample was stained with hematoxylin and eosin (H&E), the adjacent section on poly-L-lysine coated were immunostained. Immunostaining for p53 and bcl-2 was performed. A dark brown precipitate within the nucleus confirmed the presence of the p53 or bcl-2 protein.

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RESULTS

The histopathologic diagnosis of 20 cases of the uterine cervical cancer was squamous cell carcinoma. These surgical specimens included a wide range of grades going from less aggressive lesions to more aggressive and invasive behavior. In general, the microscopic feature was an undifferentiated squamous cell carcinoma. In some cases, the tumor showed a heavy inflammatory cell reaction in the adjacent connective tissue. The expression of p53 was detected in all of the cases and bcl-2 was detected in 12 of the 20 cases squamous cell carcinoma of the uterine cervix.

DISCUSSION

In the last few years several tumor suppressor genes have been identified and cloned. The p53 tumor suppressor genes has been found mutated in a wide variety of human cancers, and mutation in this genes are, furthermore, the most common genetic alteration found in human neoplasia. Although the function of the p53 gene has not been completely elucidated, p53 appears to be a nuclear transcription factor that plays a role in the control of cell proliferation, apoptosis and maintenance of the fidelity of DNA duplication. Mutation in the p53 gene increase the stability of the p53 protein and change the specificity of its transcription factor activity. The increase stability of p53 result in accumulation of the protein in the nuclei of tumor cells bearing a mutation in the gene. Since normal level of p53 are not detected by immunohistochemical studies on paraffin sections, the presence of positive staining has been accepted as an indicator of possible p53 mutation. p53 alteration have been frequently shown to be related to poor prognosis or advanced stages of disease. However, there seems to be marked difference of the timing of p53 alteration among tumors of

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different origins. In some cases, i.e., in colon, thyroid, breast, and prostate carcinoma, mutation of this gene appear to be a late event in the development of the neoplasia. In contrast, mutation of the p53 gene has been shown to be present in premalignant lesions of skin, larynx and esophagus. p53 alteration in squamous epithelia is an indicator of local neoplastic growth.

CONCLUSION

Immunohistochemical staining for Epidermal Growth Factor Receptor is useful as a tool for evaluation of tumor aggressiveness in patient with cervical squamous cell carcinoma. Epidermal Growth Factor Receptor over expression has been found related to a poorer prognosis in uterine cervical cancer.

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