

ORIGINAL ARTICLE

HER-2 expression in uterine cervix carcinogenesis

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Summary

Purpose: To assess the expression and clinical significance of HER-2 protooncogene in the uterine cervix carcinogenesis.

Patients and methods: We examined 69 tissue samples of low grade cervical squamous intraepithelial lesions (SIL) (n=16), high grade SIL (n=11) portio vaginalis uteri (PVU) carcinoma in situ (n=11) and PVU invasive carcinoma, stage IA-IIA (n=13; study group) and 18 samples without SIL or malignancy (control group). The expression of HER-2 was detected immunohistochemically using a monoclonal antibody. Fisher's exact test was used to assess statistical significance. By establishing sensitivity and specificity of the test, the level of reliability of these analyses was determined as a possible screening method for early detection of changes in the uterine cervix.

Results: Overexpression of HER-2 was found to in-

crease in direct relation to the grade of the cervical lesions. Statistically significant difference was found in the frequency of overexpression in patients with high grade SIL, PVU carcinoma in situ and PVU invasive carcinoma compared with the control group. High sensitivity was of great diagnostic significance for the detection of these types of changes in the uterine cervix. On the basis of high predictive values it can be concluded that in patients with HER-2 overexpression there is a great possibility that they have premalignant or malignant changes in the uterine cervix.

Conclusion: Our results indicate that overexpression of HER-2 oncogene may play an important role in cervical carcinogenesis. However, more extensive series of samples is required to establish the prognostic significance of HER-2 in cervical carcinogenesis.

Key words: carcinogenesis, cervical neoplasia, HER-2, immunohistochemistry

Introduction

Squamous cell carcinoma of the uterine cervix is currently one of the most common malignancies in women worldwide.

In searching ways of prevention, early diagnosis and effective treatment of premalignant lesions and

malignant tumors of the uterine cervix, molecular-genetic researches play a significant role in the last few years.

Analysis of oncogenes' expression in human cancer is increasingly important to gain a better insight in the process of tumorigenesis and to identify new markers for early diagnosis of malignant transformation. Abnormal expression of different cellular oncogenes in various cancers assessed by hybridization and immunological techniques has been previously reported [1]. The results of these analyses do not appear to be of any early diagnostic value since oncogene expression is, in general, only demonstrable in tumors that can already be classified as malignant.

The key difference between normal and malignant cell is in a subtle change of specific genes that control, by their products, the processes of growth,

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