

Immunohistochemical Expression of P53 in Invasive Cervical Carcinoma (A Clinicopathological Study)

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Abstract

Background: Cervical cancer is one of the most frequent diseases in women; it comprises approximately 12% of all cancers in women worldwide. P53 is a tumor suppressor gene, functional inactivation of the P53 gene is a key event in tumorigenesis of many human malignancies, in cervical carcinoma this functional inactivation could occur either due to mutations or causes other than mutations like binding and inactivation or degradation by viral proteins.

Objective: To assess the immunohistochemical expression of P53 in invasive cervical carcinoma (squamous cells carcinoma and adenocarcinoma) and to study the correlation between P53 over-expression with clinico-pathological variants (age, grade of tumor and histological type).

Materials and methods: A total of 42 tissue samples of invasive cervical carcinoma (30 cases of squamous cell carcinoma and 12 cases of adenocarcinoma) were included in this retrospective study.

The samples were obtained from archival paraffin embedded blocks covering the years 1998 to 2005 from the histopathology files of al-Kadhimiya Teaching Hospital, Al-Ulwiya Teaching Hospital and from private laboratories. All the clinico-pathological data had been obtained from the files of these patients.

Out of 12 cases of adenocarcinoma, 8 had punch biopsy, and 4 had hysterectomies. For the 30 cases of squamous cell carcinomas, 16 patients had punch biopsy and 14 had hysterectomy.

All cases were analyzed by immunohistochemical staining with P53 tumor marker.

Results: The percentage of P53 over-expression in cervical adenocarcinoma (58.3%) was significantly higher than P53 over-expression in cervical squamous cell carcinoma (16.66%), ($P < 0.05$).

P53 nuclear positivity in poorly, moderate and well-differentiated invasive cervical cancers was (50%, 18.18%, and 16.16% respectively), with no significant difference between P53 over-expression in different grades ($P > 0.05$).

The percentage of P53 over-expression for the patients below the age of 50 was (32.14%) and for those equal and above 50 was (17.64%), no significant difference was found in P53 over-expression between the two age groups.

From the clinico-pathological assessment, the mean age of cervical adenocarcinoma (38.5 ± 1.11 S.D. years) was significantly lower than the mean age of cervical squamous cell carcinoma (47.5 ± 1.94 S.D. years).

No significant difference was found between the grade of the invasive cervical carcinoma and the two histological types.

Conclusion: In this study, a significant correlation has been found between P53 over-expression and the histological type of the invasive cervical carcinoma.

-Although there was no statistical correlation between P53 over-expression and the three grades of the invasive cervical carcinoma, poorly differentiated tumors showed the higher percentage of P53 over-expression.

-No significant difference was found between P53 over-expression and the age of the patient.

Key words: P53, cervical carcinoma, immunohistochemical expression.

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Introduction

Cervical carcinoma is the second leading cause of death in women worldwide.

Cervical cancer affects 13,500 women and accounts for 4,500 death annually in the United States⁽¹⁾. In Iraq, the neoplasms of the cervix uteri ranked the 6th among the commonest 10 cancers in female during the period 1976-1985, whereas during the period 1995 – 1997, it ranked the tenth within the leading cancers in females^(2,3). From the overview of cervical

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