

IMMUNOHISTOCHEMICAL EXPRESSION OF CTLA-4 IN CERVICAL CARCINOMA.

Eman Mohammed Elsayed Emam, Maram Mohammed Naguib Elsayed Allam, Rowida Saad Ebrahim Habiba

Department of Pathology, Faculty of Medicine, University of Alexandria.

Introduction

Cervical cancer is the fourth most common cancer in females, accounting for 6.5% of total cancer incidence in women. It is also considered the most common gynecological cancer. The main cause of cervical cancer is a persistent infection with high-risk types of the human papillomavirus (HPV). P16 is considered a surrogate marker for high-risk human papillomavirus (hrHPV) infection. The standard management of cervical cancer, based on stage, histology, and patient-specific factors, encompasses a variety of strategies, including surgical interventions, radiotherapy, chemotherapy, and novel immunotherapies. Immune checkpoints including CTLA-4 are important molecules for immune system regulation & prevention of autoimmune diseases, but tumors can exploit them to evade anti-tumor immunity. CTLA-4 antibody can induce anti-tumor immunity, effectively amplifying T cells and enhancing the anti-tumor response.

Aim of the Work

The aim of this study was to assess the immunohistochemical expression of CTLA-4 in cervical carcinoma in relation to histologic type, grade, stage and other clinicopathological parameters.

Subjects and Methods

Materials: The current study comprised 50 retrospective cases of cervical carcinoma. Cases were obtained from the archives of the Pathology Department, Faculty of Medicine, Alexandria University, from January 2020 to December 2022.

Methods: The current study entailed clinical data collection, pathological assessment as regards H&E staining, and CTLA-4 & p16 Immunohistochemical staining. The former was conducted manually according to the instruction manual and was assessed as regards staining intensity and distribution percent, and then combined scores were assigned. The latter was conducted using the automated Bench Mark ULTRA autostainer according to the instruction manual. Positivity should be strong, diffuse, nuclear and / or cytoplasmic in location (block type positivity).

Results

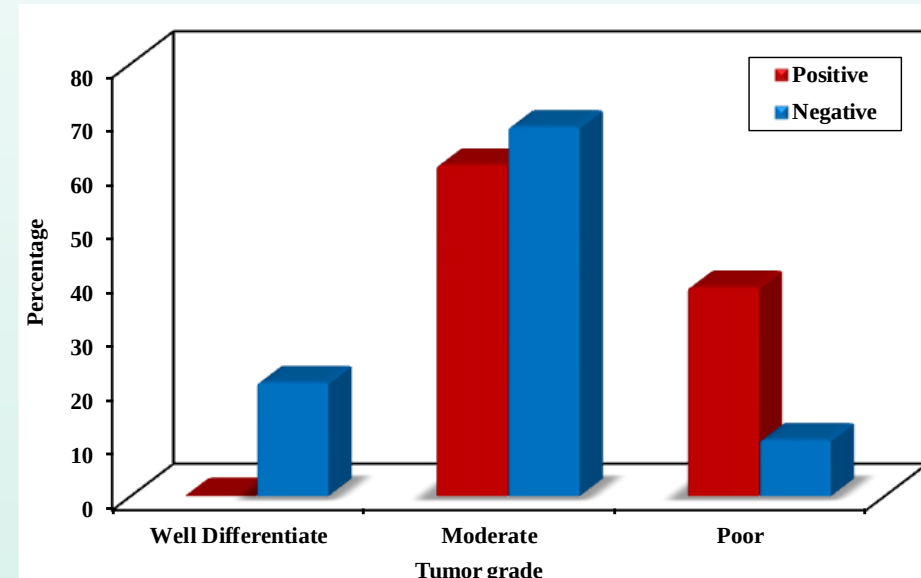


Figure 1: Relation between CTLA-4 positivity in tumor cells and tumor grade.

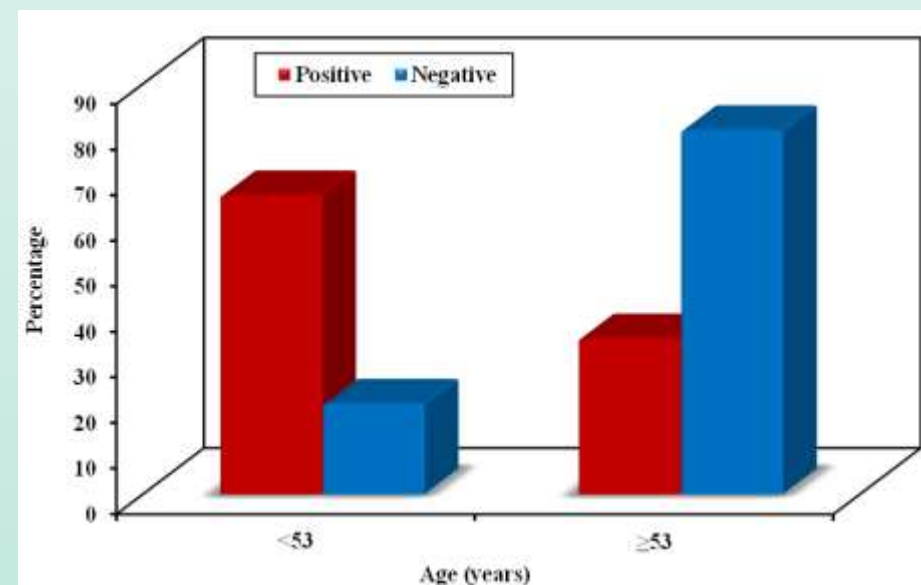


Figure 2: Relation between P16 and patient age.

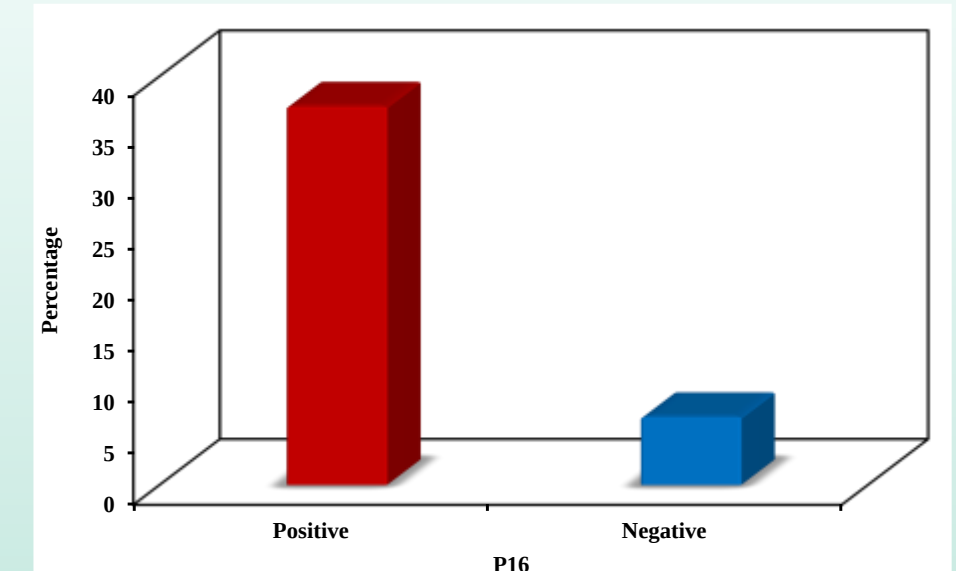


Figure 3: Relation between P16 with the presence of nearby intra-epithelial neoplasia.

Conclusion

CTLA-4 expression in tumor cells significantly increases in higher grades and can be assigned as one of the biomarkers for elucidating aggressive behavior in cervical carcinoma. CTLA-4+ve T lymphocytes widely infiltrate the stroma in most cervical carcinoma cases and should be addressed as one of the active members of the cervical carcinoma microenvironment.

P16 is significantly correlated with age and the presence of associated intraepithelial neoplasia, so it could be considered an appropriate surrogate marker for use in early screening of cervical cancer.