Immunoscore in urothelial carcinoma as a prognostic predictor and its relation to grading and staging

المشتركون فى البحث:

Mohamed H. Elmahdia, Reham S. E. Esmaila, Gehan A. Ibrahima, Marwa E. Shabana

ABSTRACT:

Background There is growing evidence that the immune system plays a major role in hindering tumor advancement. Tissue densities of CD3+ T lymphocytes and CD8+ cytotoxic T lymphocytes have been used to establish an Immunoscore (IS). It has been proven to be a robust prognostic tool in colorectal cancer, but it is not well investigated yet in bladder urothelial carcinoma.

Aim: We aimed to correlate IS in urothelial carcinoma with the different clinicopathologic parameters, to examine its validity and possible role in bladder urothelial carcinoma. Patients and method Forty cases of archived paraffin sections from patients diagnosed with bladder invasive urothelial carcinoma and underwent radical cystectomy, were examined for CD3+ and CD8+ by immunohistochemical means. Then, cell densities were measured in tumor core and invasive margins using the image analysis system. The correlations were evaluated between Immunoscore (IS) and characteristics of the included patients and tumor.

Results: IS and tumor stage had a significant connection (P=0.04), showing an inverse relationship, where elevated IS was seen in low T stages. T stages I and II had high IS values, while IS values tended to decrease in stages III and IV. alternately, no correlation has been detected between IS and any of (Patients' age, sex, tumor size, site, histological type, gross appearance, multifocality, associated urinary bladder bilharziasis, nodal stage, histological grading, vascular or perineural invasion), with (P value >0.05).

Conclusion: Early-stage cancers have a much higher IS. This could be attributable to increased activation of immune cells with tumor antigens during the early stages of tumor progression in an attempt to destroy tumor cells. However, in the advanced phases, tumor cell suppressors modify the immune cells' defensive capabilities to aid tumor progression. Consequently, studying the molecular nature of the tumors immunity provides ideas for predicting prognosis and determining factors associated with worse prognosis, as well as assisting in choosing the most suitable management plan. Since the IS has biomolecular relevance for assessing immune cell infiltrates, it could be used to develop innovative immunotherapy techniques.

Keywords: CD3+, CD8+, immunoh   istochemistry, immunoscore, urinary bladder, urothelial carcinoma