

Tumor markers of bladder cancer : the schistosomal bladder tumors versus non-schistosomal bladder tumors.

ABSTRACT

Background: The aim of this study is to comparatively elucidate the underlying molecular pathways and clinicopathological criteria in schistosomal bladder tumor (SBT) versus non-schistosomal bladder tumor (NSBT). Methods: This study explored the role of p53, p16, bcl-2, ki-67, c-myc, Rb and EGFR, by using Immunohistochemistry assay, in 45 SBT and 39 NSBT patients in comparison with 16 schistosomal chronic cystitis (SC), 28 non-schistosomal chronic cystitis (NSC), and 20 normal control (CTL) subjects. The studied markers in SBT and NSBT were correlated with different clinicopathological criteria namely, tumor histopathology, grading, invasiveness, stage, and presentation of the disease. Results: SBT was associated with high grade invasive squamous cell carcinoma (SCC) while NSBT was associated with lower grade less invasive transitional cell carcinoma (TCC). The expression of p53, bcl-2, c-myc, and EGFR was higher in SBT than in NSBT while Rb was higher in NSBT than in SBT. However, p16 and ki-67 were not different between SBT and NSBT. The profile of molecular markers in SC was similar to NSC except for EGFR which was higher in SC than in NSC. Both SC and NSC showed higher level of p53, bcl-2, ki-67, and EGFR than in CTL group while p16, Rb, and c-myc were not different. p53 was associated with high grade SCC in both SBT and NSBT. Bcl-2 was associated with high grade invasive tumors in SBT and NSBT. P16 was associated with low grade, late stage, and recurrent SBT and high grade, invasive, late stage, and recurrent NSBT. Rb was associated with SCC in SBT, invasive tumors in NSBT, and late stage and recurrent presentation in both SBT and NSBT. C-myc was associated with high grade, invasive, and late stage SBT and SCC, high grade, invasive, and late stage NSBT. EGFR was associated with invasive SCC in SBT and invasive, high grade, and late stage TCC in NSBT. ki-67 was associated with invasive SBT and high grade late stage NSBT. Conclusion: SBT and NSBT showed distinct molecular profile of tumor development and progression which can be taken into consideration in fine adjusting the anti-cancer therapy for SBT and NSBT.

Keyword: Tumor markers; Bladder cancer; Bladder tumors