Evaluation of CD4 and D8 tumor- infiltrating lymphocytes in muscle invasive urothelial carcinoma, immunohistochemical study

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Abstract:

Urinary bladder cancer (UBC) is the most common malignancy involving the urinary system. In Egypt; it represents an important health problem constituting, 40.6% of cancers in men and 14.3% of cancers in women. The presence of tumor infiltrating lymphoytes (TILs), either CD4 or CD8, within the tumor microenvironment is considered to be an indication of the host immune response against tumor antigens and is thought to reflect the dynamic process of cancer immunoediting. The aim of this study is to evaluate immunohistochemical expression of CD4, CD8 and CD/CD8 ratio in 30 formalin-fixed paraffin-embedded blocks of muscle invasive urothelial carcinoma and to correlate their expression with different clinicopathological parameters. Both CD4 and CD8 positive cells showed brown membranous staining mainly present in tumor stroma with the mean staining was 35.9 and 31.5 for CD4 and CD8 respectively. CD4/CD8 ratio ranged from 0.18 to 12.6 with the mean staining was 2.57. The mean of both CD4 & CD8 expression was significantly higher in urothelial carcinoma with squamous differentiation (P=0.001) for each, PT3 stage (P=0.001) for each and negative lymphvascular invasion (P=0.041& P= 0.001) respectively. While the mean of only CD4 expression was significantly higher in cases with absent lymph node metastasis (P=0.01). On the other hand, the mean of CD4/CD8 ratio was significantly higher in pure urothelial carcinoma (P=0.036), PT2a stage (P=0.013) and absence of lymph node metastasis (P=0.024). There was a statistically significant positive correlation (P= 0.014) between expression of CD4 and CD8. In conclusion, our findings suggest that, in the setting of muscle invasive UC, the existence of both CD4 and CD8 TILs within the tumor microenvironment points to ongoing immune response that might be able to suppress further progression and metastasis. Higher CD4/CD8 ratio was observed in pure UC than other variants. Lower CD4/CD8 ratio may be associated with advanced stage and lymph node metastasis.

Keywords:

Lymphocytes, urothelial carcinoma, immunohistochemical study

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