CIRCULATING GROWTH FACTORS IN URINARY BLADDER CANCER

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Abstract

Introduction: Early detection of disease is a crucial factor for increased survival rate in patients with urinary bladder cancer (UBCa). Despite all developments in this area, the options for diagnosis and detection of recurrences remain inadequate. In order to detect UBCa at early stage, new markers are needed. Certain growth factors in serum have been shown to have predictive/prognostic potential.

Objectives: Predictive potentials of soluble HER-2/neu (sHER-2/neu), insulin like growth factor 1 (IGF-1) and epidermal growth factor (EGF) in patients with UBCa were examined in the present study.

Materials and Methods: The patients with UBCa who were new diagnosed and untreated previously were included in the study. The control group was constituted by age-matched healthy volunteers. Blood samples were collected before the surgical operation and serum levels of sHER-2/neu, IGF-1 and EGF were measured by ELISA.

Results: In the UBCa group, serum level of sHER-2/neu was found to be increased, serum level of IGF1 was found to be decreased in comparison to those in the control group. No significant difference was determined between the study groups for serum level of EGF. There was no association between local invasion, tumor size, metastasis and serum sHER/neu, IGF-1, EGF levels. The predictive performance of serum sHER-2/neu level was evaluated by ROC curve generated by using sHER-2/neu values obtained from 37 UBCa patients and 27 controls. We found 0.917 (0.838-0.996) within 95% confidence interval [CI] for sHER-2/neu from the area under the curve \((P=0.000)\). Using the cut off value of 4.7 ng/mL of serum sHER-2/neu, 100% sensitivity, 78% specificity, 86% positive predictive value, 100% negative predictive value and 90.6 \% accuracy were obtained.

Conclusion: Serum sHER-2/neu is a useful predictive marker for UBCa but IGF-1 and EGF have not such a potential.

Acknowledgements: This work was supported by the Research Fund of Istanbul University (Project no: BYP-2464)

Keywords: HER-2/neu; urinary bladder cancer; biochemical cancer marker