

## Diagnostic Value of Urinary Bio-Markers in Bladder Cancer

**Introduction and Objective:** Early diagnosis of bladder cancer allows for early effective local treatment and optimizes the success of surgical therapy. Biochemical measurement of soluble markers in urine for diagnosis of bladder cancer is being explored in the last few years, for example hyaluronic acid (HA), fibronectin (FN), Bladder tumor antigen (BTA) and nuclear matrix protein (NMP). This work was designed to evaluate the aforementioned markers as regards their diagnostic value and ability to predict tumor invasiveness in bladder cancer in association with or without schistosomiasis.

**Materials and Methods:** Eighty-two patients: 42 with chronic cystitis and 40 with cancer bladder (28 with transitional cell carcinoma and 12 with squamous cell carcinoma) were included in this study. Fifteen individuals served as normal control. NMP and BTA were determined by using a semi-quantitative assay (Dot ELISA). However, FN was estimated by using ELISA assay, while HA was estimated by a modified ELISA.

**Result:** Urinary hyaluronic acid was significantly higher in cancer group compared to chronic cystitis group ( $P < 0.001$ ). Urinary FN levels showed only a significant increase when invasive and non-invasive malignancies were compared ( $P < 0.01$ ). Schistosomiasis association was found to have a positive impact in urinary FN levels both in chronic cystitis and malignancy.

**Conclusion:** Urinary BTA, NMP and HA could be considered as valuable screening tests for bladder malignancy. Furthermore, urinary FN levels could be used as urinary biomarker to differentiate between superficial and invasive tumors. This will allow for better planning of therapeutic strategies.