

Evaluation of urinary level of NMP22 as a diagnostic marker for stage pTa-pT1 bladder cancer: comparison with urinary cytology and BTA test.

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BACKGROUND: In the present study we compared the clinical value of two new specific tests for transitional cell carcinoma, urinary nuclear matrix protein (NMP22) levels and bladder tumor antigen (BTA) test, with that of urinary cytology in the follow-up of patients with superficial bladder cancer.

MATERIALS AND METHODS: Hundred and five bladder cancer patients were recruited: 30 stage pTa and 45 stage pT1 (group A), and 30 with a history of bladder cancer but no recurrence at the time of the study (group B). Urine samples were collected before any instrumental manipulation of the genitourinary tract. All patients were negative for urinary tract infections at conventional urine analysis.

RESULTS: NMP22 at a cutoff value of 6 U/ml showed a sensitivity of 83.3% in pTa cases and 97.7% in pT1 cases, with a false-positive rate of 23.3%. The BTA test was positive in 26.6% of patients with cancer stage pTa and in 66.6% of pT1 stage, with 30% false-positives in the non-neoplastic group. Urinary cytology, performed on three consecutive samples, was positive in 20% of patients with cancer stage pTa and in 64.4% of pT1 stage and did not show any false-positive cases. Stratifying the neoplastic patients according to lesion grade, NMP22 (at a cutoff value of 6 U/ml) was positive in 86.2% of G1, 97.2% of G2 and 90% of G3. BTA was positive in 37.9, 52.7 and 70% of G1, G2 and G3, respectively, while urinary cytology was positive in 37.9, 44.4 and 80%.

NMP22 overall Sensitivity and Specificity was at 10Units 83% and 87%. Sensitivity for BTA test was 51% and Specificity 70%.