7. Urinary Immunocytology and Bladder Carcinomas

R.		Arndt
H.		Huland

Department of Urology, University of Hamburg FRG

R. Arndt, Department of Urology, University of Hamburg, Martinistrasse 52, D-2000 Hamburg 20 (FRG)

Presented April 1985

The monoclonal antibody 486 P 3/12 (IgM λ) raised against the bladder carcinoma line 486 P detects a 220-kilodalton glycoprotein expressed on 17/19 bladder carcinomas tested so far. This antigen is expressed focally by a few single superficial cells in the normal human bladder mucosa.

We used 486 P 3/12 to identify tumor cells in bladder washings from four groups of patients. Group I consisted of 40 patients with histologically proven bladder carcinomas. Group II consisted of 41 age-matched patients with no bladder disease (n = 24) and children with significant bacteriuria (n = 17). Group III consisted of 41 patients who received after complete removal of their bladder tumor mitomycin C instillation therapy and were disease-free as assessed by endoscopy. Group IV consisted of 39 patients whose bladder tumors were completely removed at least 3 months earlier and who had no evidence of local tumor recurrence.

The cytocentrifuged specimens were analyzed by immunocytology using alkaline phosphatase-conjugated indicator antibodies and standard cytology. Immunocytology was analyzed quantitatively. In the control group (group II), none of the patients had more than 25% immunocytologically positive cells in the bladder washings using 486 P 3/12. All specimens were regarded as immunocytologically negative with less than 25% of reactive cells. Those with more than 30% reactive cells were defined as immunocytologically positive.

With this baseline, 36 out of 40 patients (90%) with bladder tumors (group I) yielded positive immunocytologic findings. The overall positive rate using standard urinary cytology was 47%. The highest false negative rate was observed in grade I and grade II tumors. Comparing both techniques, the sensitivity for detecting bladder cancer cells in the urine could be improved by 97.5% in group I using immunocytology instead of standard cytology methods.