

25. DIAGNOSTIC OF URINARY BLADDER TUMORS

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Introduction. The most frequent type of bladder cancer in adults is the one derived from transitional cells. The main method of treatment is selected according to the extensiveness and aggressiveness of the tumor. It was estimated that approximately 70% of all new cases of bladder cancer are non-muscle invasive, and the other 30% are muscle-invasive. Therefore, the gold standard in the treatment of the superficial form of bladder cancer is the TURBT, followed by additional type of therapy in order to reduce its recurrence, while the muscle-invasive form requires cystectomy in addition with chemotherapy. Despite this, urinary bladder cancer remains to be a healthcare burden because of its high rate of recurrence and a poor prognosis in those who develop metastases. That's why, some novel endoscopic techniques associated with the early detection of urinary biomarkers can significantly improve the results of diagnosis and treatment.

Aim of study. Evaluation of the utility of different diagnosis techniques which offer a wider understanding of the urothelial lesions and may provide an improved cancer control.

Methods and materials. This information is based on a literature review from the electronic database of PubMed for the terms "molecular markers in bladder cancer", "novel endoscopic diagnosis for bladder cancer", and Sciencedirect.

Results. Comparing cytology, the most popular noninvasive test for the diagnosis of bladder cancer, with 4 most available urinary biomarkers-Hemoglobin Dipstick, BTA Stat, NMP22 BladderCheck, and Immunocyt, showed the following results in sensitivity: cytology -48%, BTA Stat-61%, Hemoglobin Dipstick-51 %, NMP22-58%, Immunocyt-62%, but the specificity of cytology was higher: cytology-86%, BTA Stat-78%, Hemoglobin Dipstick-58 %, NMP22-85%, Immunocyt-79% . When combining cytology with urinary biomarkers the results for sensitivity and specificity were: cytology+ Hemoglobin Dipstick-85%/57%, cytology+ BTA Stat-91%/ 78%, cytology+NMP22-94%/84%, cytology+ Immunocyt-90%/78%. The same with novel endoscopic techniques, being compared with the standard white light cystoscopy: fluorescence cystoscopy which is performed by administration of a photosensitizing agent and using a blue-light endoscopy showed a better identification of papillary and flat bladder lesions. The same with optical coherence tomography, which offers information about the tumor invasiveness. Narrow band imaging provides information about the vascularization of abnormal tissue, this way defining the limits of the urinary bladder tumor.

Conclusion. According to the following results, the best combination, showing the highest sensitivity and specificity in detection of bladder cancer compared to other techniques is cystoscopy+ NMP 22 test. Also, new endoscopic techniques like: photodynamic diagnostic, narrow band imaging, confocal laser endoscopy, optical coherence tomography improves the sensitivity for the detection of bladder tumors. These techniques help in the earlier detection, offer more information about the limits, the invasiveness of the tumor and a better understanding of the treatment approach, also predicting the response to the systemic chemotherapy and immunotherapy.