The latest epidemiological data on cancers indicate that bladder cancer is in second place to do the incidence of the cancer within the urogenital system in men. In Poland, the incidence of tumors of the bladder in men account for about 7% of women 2% of cases. The risk of bladder cancer increases with age, wherein male is about 3-4 times higher than in women. The etiological factors for bladder cancer include environmental factors, ie. smoking, exposure to tobacco smoke, occupational exposure (chemical, rubber, dye), and schistosomiasis. The most common treatment of patients with bladder cancer is tumor transurethral resection (TUR) and further observation of the patient for a particular system time. Bladder cancer is characterized by very frequent recurrence that are observed following treatment TUR. Currently we make the most important prognostic factors include, among others, the number and size of tumors, the frequency of relapses and histopathology tumor stage and grade. Unfortunately, none of the above methods is not reliable in predicting the course of the disease and assessing the risk of recurrence in patients after TUR. Probably soon sensitive and objective predictors identified molecular methods, during monitoring of patients after TUR increase the effectiveness of treatment and extend the survival time of patients by supplementing routine cytology tests.

It is known that tumor recurrence and metastasis lead to make the wrong prediction of neoplastic diseases. Probably recurrent cancer of the bladder is related to the change in the expression of genes important in the weight of immunological processes. Tissue analysis of mRNA expression profile of proteins influencing the path of the MHCI antigen and examining the antigen concentrations MHCI and IFN gamma levels closer role of the immune system in the development of recurrence in patients after TUR treatment. The results also will introduce the importance of the performance of molecular assays as prognostic indicator in the monitoring of bladder cancer patients.