Purpose: In this study, the reliability of ThinPrep test (ThinPrep) was evaluated in comparison with routine urine cytology (RUC).

Materials & Methods: This study was conducted on 402 cases where all of RUC, ThinPrep and TURB were performed. TURB results were classified by WHO grade to compare sensitivity, specificity, positive predictive values and negative predictive values between the results.

Results: Of the 402 cases, RUC and ThinPrep were conducted during follow-up periods after the diagnosis as bladder cancer in 52.5% and the tests were conducted due to hematuria, lower urinary tract symptoms or abnormalities in urinary tract imaging studies in 47.5%. Bladder cancer was diagnosed in 82.7% of all the subjects. The values of sensitivity to bladder cancer of RUC and ThinPrep were 44.6% and 56.6% (p<0.001) respectively. The sensitivity of ThinPrep was higher than RUC in low grade transitional cell carcinoma (TCC), high grade TCC and carcinoma in situ (p=0.001, p=0.031, and p=0.021). When the subjects were divided into a group of known bladder cancer and those who had not been diagnosed, ThinPrep showed higher sensitivity compared to RUC (p<0.001, p=0.001). But, specificity did not show any significant difference between RUC and ThinPrep. The positive predicative value of RUC was 87.4% and that of ThinPrep was 92.5% while the negative predicative values of the two tests were 23.0% and 29.7% respectively.

Conclusions: ThinPrep showed higher sensitivity and positive predicative values in diagnosing bladder cancer compared to RUC.