Prediction of urinary tract involvement in patients with pulmonary tuberculosis

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Introduction and objectives:

The aim of the study was validation of hypothesis that patients with more expressed pulmonary tuberculosis or patients with deterioration of immunity are more likely to be diagnosed with urinary tract tuberculosis and should have urological examination.

Material and methods:

Design of the study - 2 year prospective study. Patients with newly diagnosed pulmonary tuberculosis were included. Pulmonary tuberculosis was diagnosed by routinely used clinical, radiological and laboratory examinations, patients were divided into groups according to pulmonary tract involvement grade (X-ray) and level of bacteriological positivity (microscopic, culture). Mycobacterium tuberculosis in urine by microscopic, cultivation and quick molecular methods (Bactec, PCR) was examined in all patients. Immunological profile (IgG, CD4) was tested. Individual variables between the group of cases (patients with detected Mycobacterium tuberculosis in urine) and controls (patients without detected Mycobacterium tuberculosis) were compared. Data was statistically evaluated.

Results:

102 patients with pulmonary tuberculosis were included. Mycobacterium tuberculosis in urine was detected in 7 patients (6.86%). The grade of pulmonary involvement in both groups was statistically insignificant (Wilcoxon test, p=0.5635).
No statistical difference in microscopic positivity of sputum between cases (28.57%) and controls (46%) was found (Fisher Exact test, p=0.4531).
Culture positivity of sputum was significantly more often in group of controls (69.78%) than in group of cases (28.57%) (Fisher Exact test, p=0.0396).
The difference of IgG and CD4 levels was statistically insignificant in both groups (Wilcoxon test 0.6297 and 0.5003 respectively).

Conclusion:

The study did not support the hypothesis that patients with more expressed pulmonary tuberculosis or patients with deterioration of immunity are more likely to be diagnosed with urinary tract tuberculosis. The risk of urinary tract involvement is not predictable by studied parameters and should be considered in all patients with pulmonary tuberculosis.