

SYMPTOMATIC URINARY TRACT INFECTIONS' RATE POST-URODYNAMIC STUDIES AND RISK FACTORS

Hypothesis / aims of study

Urodynamic study (UDS) is an invasive ambulatory procedure that carries a possibility for post-procedure urinary tract infection (UTI). AUA best practice policy statement on antimicrobial prophylaxis [1] concluded that antimicrobial prophylaxis before UDS is justified in this setting only in patients with risk factors: advanced age, anatomic anomalies of the urinary tract, poor nutritional status, smoking, chronic corticosteroid use, immunodeficiency, externalized catheters, colonized endogenous/exogenous material, distant coexistent infection and prolonged hospitalization. EUA guidelines on urological infections [2] justify antibiotics in a case of: bacteriuria, indwelling catheters, neurogenic lower urinary tract dysfunction and a history of UTI. However, all these statements were based on studies that used a rate of bacteriuria as a measure of post-procedure UTI. Studies that checked a rate of symptomatic UTIs and identified risk factors for post-UDS symptomatic UTI are lacking. Essentially, our study was the first to verify a symptomatic post-UDS UTI rate and identify possible risk factors for post-UDS symptomatic UTI.

Study design, materials and methods

398 patients were identified in an IRB-approved retrospective review of UDS clinic electronic charts' database. Patients with a negative urine culture didn't get antimicrobial treatment before UDS. However, positive urine culture required a three-day appropriate antimicrobial treatment before UDS. Patients who had symptoms of: dysuria, urinary frequency, urgency or fever and a positive urine culture was identified during 15 days after UDS considered to have post-UDS symptomatic UTI. Age above 70, male gender, past or current smoking, diabetes mellitus, neuropathic pathologies, use of indwelling or intermittent catheters, time interval between urine culture and UDS, and a presence of pre-UDS positive urine culture were checked as a possible risk factors for post-UDS symptomatic UTI by univariate and multivariate analyses.

Results

Mean age of a study population was 65.7 (range=19-95) years old. 243/398(61.1%) were male. 320(80.4%) patients had a negative urine culture prior to UDS with a significantly lower symptomatic UTI rate of 5% compared to 14.7% symptomatic UTI rate among patients who had prior to UDS appropriately treated positive urine culture ($p<0.02$). There was no significant difference found in a time interval between urine culture and a date of UDS in a group that developed UTI compared to a group that remained asymptomatic ($p=0.1$). In a univariate analysis, age >70 , appropriately treated urine culture before UDS, time interval between urine culture and UDS more than a week, male gender, diabetes mellitus and neuropathic conditions (Parkinson's, multiple sclerosis, CVA, spinal cord injury, etc.) were found significantly predict post-UDS symptomatic UTI ($p<0.0001$). However, in a multivariate analyses, only an appropriately treated positive culture before UDS (OR=2.75, 95%CI=1.04-7.27, $p=0.04$) and an interval of more than a week between urine culture and UDS (OR=2.83, 95%CI=1.16-6.91, $p=0.022$) were found significantly predicting symptomatic post-UDS UTI.

Interpretation of results

Two predictors for symptomatic post-UDS UTI episodes were found in a multivariate analyses: a long (more than a week) period of time between urine culture and UDS and a presence of an appropriately treated urine culture before UDS. These results suggest that any positive culture should be repeated after an appropriate antimicrobial treatment before UDS. We suggest that all urine cultures should be performed up till a week before UDS.

Concluding message

This is the first report that verified a symptomatic post UDS UTI rate and possible risk factors for post-UDS UTI. Prospective studies should be performed in order to verify these results.

References

1. BEST PRACTICE POLICY STATEMENT ON UROLOGIC SURGERY ANTIMICROBIAL PROPHYLAXIS
2. EAU Guidelines on Urological Infections

Disclosures

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