

PROPHYLACTIC ANTIBIOTICS IN URODYNAMICS: A SYSTEMATIC REVIEW OF EFFECTIVENESS AND SAFETY

Aims of study

To assess the effectiveness and safety of administering prophylactic antibiotics in reducing the risk of urinary tract infection in patients undergoing urodynamic studies.

Study design, materials and methods

We searched the Cochrane Central Register of Controlled Trials (*The Cochrane Library*, Issue 4, 2006), MEDLINE (1966 to January 2007), EMBASE (1980 to January 2007), CINAHL (1982 to January 2007), LILACS (Jan 2007), TRIP database, The National Library for Health, the citation lists of review articles, conference abstracts (2005-2006) and hand-search of reference lists to identify relevant reviews and articles.

The inclusion criteria were randomised controlled trials (RCTs) of the effect of prophylactic antibiotics versus placebo in patients having urodynamics studies on bacteriologically proven urinary tract infection. There was no language restriction applied. Studies which included other lower urinary tract instrumentation like cystourethroscopy and urethral dilatation were excluded.

Two reviewers extracted data on characteristics of the study quality and the population, intervention and outcome independently.

Results

Seven RCTs were included in the systematic review. The studies were methodologically poor. The concealment, randomization and blinding were adequate in 3, 2 and 2 studies respectively. Of the seven studies, 4 had calculated sample size and only one study described the results after intention to treat analysis. The follow up was adequate in 3/7 studies. On meta-analysis, there was 30% reduction in the risk of significant bacteruria with administration of prophylactic antibiotics (Peto odds ratio 0.3; 95% confidence interval 0.16-0.57). The antibiotics differed in dose, type and duration of use and 2/341 patients developed side effects.

Interpretation of results

There is sufficient evidence for the use of prophylactic antibiotics in urodynamics to reduce the risk of significant bacteruria. There is however limited information on the natural history of this bacteruria as well as ideal type, dose and duration of antibiotic to be used.

Concluding message

There is sufficient evidence for the use of prophylactic antibiotics in urodynamics to reduce the risk of significant bacteruria but whether this translates into clinically significant and cost effective reduction in symptomatic urinary tract infection is unknown. More evidence from adequately powered and robustly conducted RCTs are required to evaluate the efficacy of different types and doses of antibiotics in reducing symptomatic urinary tract infection.

References

Okorocho I, Cumming G, Gould I. Female urodynamics and lower urinary tract infection *BJU Int.* 2002 Jun;89(9):863-7

FUNDING: None

HUMAN SUBJECTS: This study did not need ethical approval because it is a systematic review but followed the Declaration of Helsinki. Informed consent was not obtained from the patients.