

## AB072. Antimicrobial agents for preventing urinary tract infections in patients undergoing cystoscopy

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**Background:** Cystoscopy is commonly performed in the outpatient clinic for diagnostic purpose which allows urologists to inspect the interior lining of the bladder. The main and most concerning disadvantage of cystoscopy is the risk of symptomatic urinary tract infection.

**Methods:** We included randomized controlled trials (RCTs) or quasi-RCTs that compared any prophylactic antibiotic versus placebo, no treatment, or other non-antibiotic prophylaxis. There was no restriction on the dose, frequency, formulation, duration, or mode of administration of the antibiotics. We used standard methodological procedures expected by The Cochrane Collaboration. Our primary outcomes were systemic UTI, localized UTI, symptomatic UTI and serious adverse events caused by prophylactic antibiotics. Secondary outcomes included minor adverse events, asymptomatic bacteriuria and bacterial resistance.

**Results:** Eighteen RCTs and two quasi-RCTs were included with a total of 7,400 participants, all of which compared antibiotics prophylaxis with placebo or no treatment control. We found no study comparing the antibiotic prophylaxis versus other non-antibiotic prophylaxis. Nine RCTs reporting bacteriuria as their primary outcome could not be pooled due to variations in definitions. Primary outcomes systemic UTI: We found low quality evidence suggesting antibiotic prophylaxis might not reduce the incidence of systemic UTI compared with control group [risk ratio (RR) 1.12, 95% confidence interval (CI): 0.38–3.32, 5 RCTs, 504 participants]. The absolute effect was two more people (95% CI: 12 fewer to 46 more) per 1,000 people having a systemic UTI when provided with antibiotic prophylaxis. Localized UTI: We were uncertain whether antibiotic prophylaxis reduce the incidence of localized UTI compared with control group because of the very low-quality evidence (RR 1, 95% CI: 0.06–15.77, 1 RCT, 200 participants). The

absolute effect was 0 more people (95% CI: 9 fewer to 152 more) per 1,000 people having a localized UTI when provided with antibiotic prophylaxis. Symptomatic UTI: we found low quality of evidence that antibiotic prophylaxis might reduce the incidence of symptomatic UTI compared with control group (RR 0.49, 95% CI: 0.28–0.86, 11 RCTs, 5,441 participants). The absolute effect was 30 fewer people (95% CI: 42 fewer to 8 fewer) per 1,000 people having a symptomatic UTI when provided with antibiotic prophylaxis. We found evidence of a subgroup effect, which suggested that antibiotic prophylaxis might be effective to prevent symptomatic UTI for rigid cystoscopy (RR 0.42, 95% CI: 0.19–0.91), but did not appear to be effective for flexible cystoscopy (RR 0.59, 95% CI: 0.31–1.10). Serious adverse events: No serious adverse events were reported in intervention group or control group. We found low quality of evidence that antibiotic prophylaxis might not increase serious adverse events compared with control group (RR not available, 4 RCTs, 630 participants). Secondary outcomes: we found low quality of evidence suggested that prophylactic antibiotic might result in little minor adverse events compared with placebo (RR 2.90, 95% CI: 0.54–15.66, 4 RCTs, 630 participants). Low quality of evidence suggested that antibiotic prophylaxis might reduce the incidence of asymptomatic bacteriuria compared with control group (RR 0.40, 95% CI: 0.30–0.53, 10 RCTs, 5,447 participants). Bacterial resistance was reported in 4 RCTs, these data could not be pooled together and we are uncertain as to whether the intervention has an important effect on bacterial resistance due to very low quality of evidence.

**Conclusions:** We found low quality of evidence suggesting antibiotic prophylaxis might not reduce the incidence of systemic UTI post cystoscopy, and we were uncertain whether antibiotic prophylaxis reduce the incidence of localized UTI. There was low quality of evidence suggested that antibiotics prophylaxis might reduce symptomatic UTI post cystoscopy, but subgroup effect of different types of cystoscope should be considered. Low quality of evidence suggested antibiotics prophylaxis might result in little serious adverse events.

**Keywords:** Cystoscopy; urinary tract infections (UTI)

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