PREVENTION OF CATHETER-ASSOCIATED URINARY TRACT INFECTION FOLLOWING GYNAECOLOGIC SURGERY: A SYSTEMATIC REVIEW

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*Table 3: Study design and outcomes of prospective studies of chemoprophylaxis for catheter-associated urinary tract infection following gynaecologic surgery.

Author	Study Design	Catheter (type and duration)	Treatment	Results (Treatment versus Control)		Conclusion
				Bacteriuria	Symptomatic UTI	
Rogers et al.[19]	RCT	Suprapubic Duration 10-12 days	Treatment (N=211): nitrofurantoin 100 mg, daily Control (N=224): placebo From catheter placement until removal	46% versus 61% (p=0.002)	18.9% versus 32.6% (p=0.002)	Significant decrease in bacteriuria and symptomatic UTI Side-Effects - no significant difference between groups (rash, nausea) Microbiology - fewer enterococcus UTIs in treatment (10.4% versus 19.3%)
Ghezzi et al.[18]	Prospective cohort	Transurethral Duration 24 hours	Treatment (N=54): prulifloxacin 600 mg, one dose before removal Control (N=60): no treatment (historical controls)	0% versus 23.3% (p<0.0001)	0% versus 26.6% (p<0.0001)	Significant decrease of bacteriuria and symptomatic UTI Side-Effects - one in treatment group, none in placebo (diarrhoea) Microbiology (Vaginal) - 81.5% of treatment group had normal vaginal lactobacilli flora 1 week after surgery (wet mount or culture)
Baertschi et al.[20]	RCT	Transurethral Duration Gynaecologic laparotomies 2 days Vaginal hysterectomy 4 days Urogynaecologic surgery 6 days	Treatment (N=143): trimethoprim-sulfamethoxazole 80/400 mg, twice daily Control (N=138): placebo From placement until 8 days after surgery	10% versus 32% (p=0.0005)	Not reported	Significant decrease in bacteriuria Antibiotic Resistance - higher rate of antibiotic resistance in positive cultures in treatment group compared to placebo (62% versus 24%) Side-Effects - more common in treatment group (rash, nausea/vomiting, GERD)
Murray et al.[21]	RCT	Transurethral Duration 5 days	Treatment A (N=42): methenamine hippurate 1 g, twice daily Treatment B (N=40): sulphamethizole 200 mg, five times daily From 2 days before surgery until removal	23.8% versus 20% (p=0.68)	Not reported	No significant decrease in bacteriuria at any time point
Schiøtz et al.[2]	RCT	Transurethral Duration 24 hours	Treatment (N=73): methenamine hippurate 1 g, twice daily Control (N=72): placebo From 1 day before surgery until 4 days after surgery	30.1% versus 50% (p=0.02)	2.7% versus 13.9% (p=0.03)	Significant decrease in bacteriuria and in symptomatic UTI Side-Effects - noted in both groups (nausea, rash)
Tyreman et al.[17]	RCT	Transurethral Duration 3 days	Treatment (N=45): methenamine hippurate 1 g, three times daily Control (N=49): no treatment From night prior to surgery until 5 days after surgery	11.1% versus 44.9% (p<0.001)	2.2% versus 28.5% (p<0.001)	Significant decrease in symptomatic UTI and bacteriuria Microbiology - fewer urine cultures with opportunistic infection in methenamine group Side-Effects None observed
Thomlinson et al.[16]	Prospective cohort	Transurethral Duration not defined	Treatment (N=49): methenamine hippurate 1 g, twice daily (+ urinary acidification) Control (N=51):	28.5% versus 29.4% (p=0.93)	N/A	No significant difference in bacteriuria
Knoff et al.[14]	RCT	Transurethral Duration Gynaecologic laparotomy 1 day Urogynaecologic surgery 3 days	Treatment (N=31): methenamine hippurate 1 g, twice daily Control (N=29): placebo From 1 day prior to surgery until 7 days after surgery	3.2% versus 41.4% (p<0.01)	3.2% versus 27.5% (p<0.01)	Significant decrease in bacteriuria and in symptomatic UTI Side-Effects -Gastric side-effects observed in both groups
Ladehoff et al.[15]	RCT	Transurethral Duration Urogynaecologic surgery 5 days Radical hysterectomy 10 days	Treatment (N=109): methenamine hippurate 0.5 g, twice daily Control (N=123): no treatment From 1 day prior to surgery until 8 to 13 days after surgery	30.3% versus 45.5% (p<0.025)	N/A	Significant decrease in bacteriuria Side-Effects -one patient in treatment group (nausea), none in placebo group

RCT: randomised control trial; UTI: urinary tract infection; GERD: gastro-oesophageal reflux disease.

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