

Urinary catheter policies for long-term bladder drainage

The following questions were answered by a systematic review of the literature:

- 1) Is indwelling urethral catheterisation superior to suprapubic catheterisation in the prevention of urinary tract infections?
 2. Is indwelling urethral catheterisation superior to intermittent catheterization in the prevention of urinary tract infections?
 3. Is suprapubic catheterisation superior to intermittent catheterization in the prevention of urinary tract infections?
 4. Is antibiotic prophylaxis superior to giving antibiotics when clinically indicated in the prevention of urinary tract infections?
 5. Is antibiotic prophylaxis superior to giving antibiotics when microbiologically indicated in the prevention of urinary tract infections?
 6. Is giving antibiotics, if microbiologically indicated, superior to giving antibiotics if clinically indicated in the prevention of urinary tract infections?
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Abstract

Background

People requiring long-term bladder draining commonly experience catheter-associated urinary tract infection and other problems.

Objectives

To determine if certain catheter policies are better than others in terms of effectiveness, complications, quality of life and cost-effectiveness in long-term catheterised adults and children.

Search strategy

We searched the Cochrane Incontinence Group specialised trials register (searched 9 June 2003). Additionally, we examined all reference lists of identified trials.

Selection criteria

All randomised and quasi-randomised trials comparing catheter policies (route of insertion and use of antibiotics) for long-term (more than 14 days) catheterisation in adults and children.

Data collection & analysis

Data were extracted by both reviewers independently and compared. Disagreements were resolved by discussion. Data were processed as described in the Cochrane Handbook. If the data in trials have not been fully reported, clarification were sought from the authors. When necessary, the

incidence-density rates (IDR) and/or the incidence-density differences (IDD) within a certain time period were calculated.

Main results

Seven trials met the inclusion criteria involving 328 patients in four crossover and three parallel-group randomised controlled trials. Only two of the pre-stated six comparisons were addressed in these trials.

Three trials compared antibiotic prophylaxis with antibiotics when clinically indicated. For patients using intermittent catheterisation, there were inconsistent findings about the effect of antibiotic prophylaxis on symptomatic urinary tract infection. For patients using indwelling urethral catheterisation, one small trial reported fewer episodes of symptomatic UTI in the prophylaxis group.

Four trials compared antibiotic prophylaxis with giving antibiotics when microbiologically indicated. For patients using intermittent catheterisation, there was limited evidence that receiving antibiotics reduced the rate of bacteriuria (asymptomatic and symptomatic). There was weak evidence that prophylactic antibiotics were better in terms of fewer symptomatic bacteriuria.

Reviewers' conclusions

No eligible trials were identified that compared alternative routes of catheter insertion. The data from seven trials comparing differing antibiotic policies were sparse, particularly when intermittent catheterisation was considered separately from in-dwelling catheterisation. Possible benefits of antibiotic prophylaxis must be balanced against possible adverse effects, such as development of antibiotic resistant bacteria; these cannot be reliably estimated from currently available trials.