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INTERMITTENT CATHETERISATION: WHICH CATHETER DESIGNS, TECHNIQUES AND STRATEGIES AFFECT THE INCIDENCE OF UTI, OTHER COMPLICATIONS AND USER ACCEPTIBILITY? A COCHRANE SYSTEMATIC REVIEW

Hypothesis / aims of study

Do catheter designs or technique impact on incidence of UTI, other complications, user acceptability or cost-effectiveness? The following catheters or techniques were compared:

- single-use (sterile) versus multiple use (clean) catheters
- one catheter design versus another (e.g. hydrophilic coated versus uncoated)
- sterile versus clean catheterisation technique

Study design, materials and methods

We searched the Cochrane Incontinence Group Specialised Trials Register (updated Sept 2013), reference lists of relevant articles, conference proceedings and contacted other investigators for unpublished data. Inclusion criteria were randomised controlled trials or randomised crossover trials comparing at least two different catheter designs, catheterisation techniques or strategies. Two reviewers assessed the methodological quality of trials and abstracted data as per standard Cochrane methods.

Results

Thirty-one trials met the inclusion criteria (13 RCTs and 18 crossover trials) with 17 studies added since 2008. Most were small (less than 60 participants completed), although five trials had more than 100 participants. A total of 1737 participants were enrolled and 1388 completed (80%). 60% of subjects were male. There was considerable variation in length of follow-up and definitions of UTI. There were no significant differences in the number of UTIs between:

- single-use (sterile) catheters versus multiple use (clean) catheters (Figure 1)
- hydrophilic (single-use) vs uncoated (multi-use) (Figure 2)
- hydrophilic-coated vs uncoated (single use both arms) (Figure 3)
- sterile versus clean catheterisation technique

Nor were there any significant differences in other complications or user acceptability. In all but one trial that included hydrophilic coated products, the attrition rate was higher in the hydrophilic arm compared to the control arm (Figure 4).

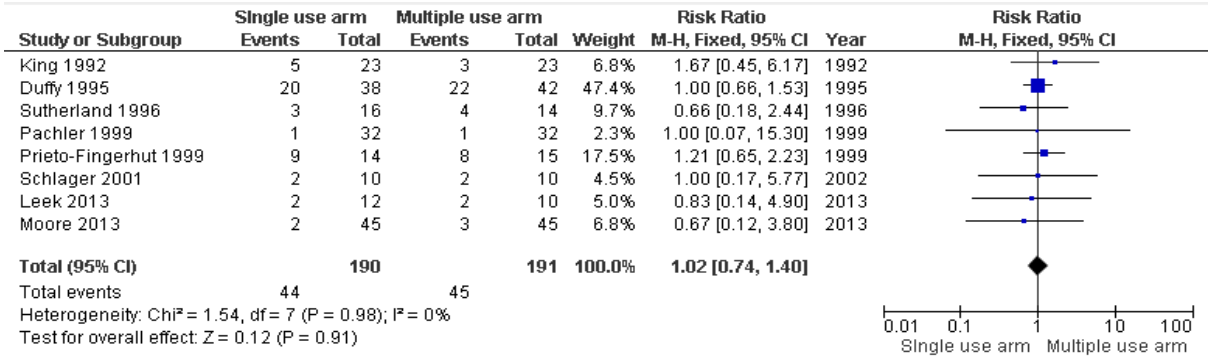

Figure 1. Single-use (sterile) vs multi-use (clean) catheters: No. with UTI

Figure 2. Hydrophilic (single-use) vs uncoated (multi-use): No. with UTI

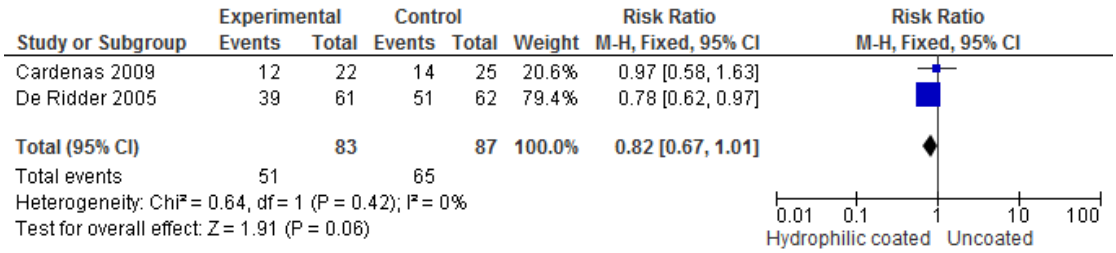

Figure 3. Hydrophilic-coated vs uncoated (single use both arms): No. with UTI

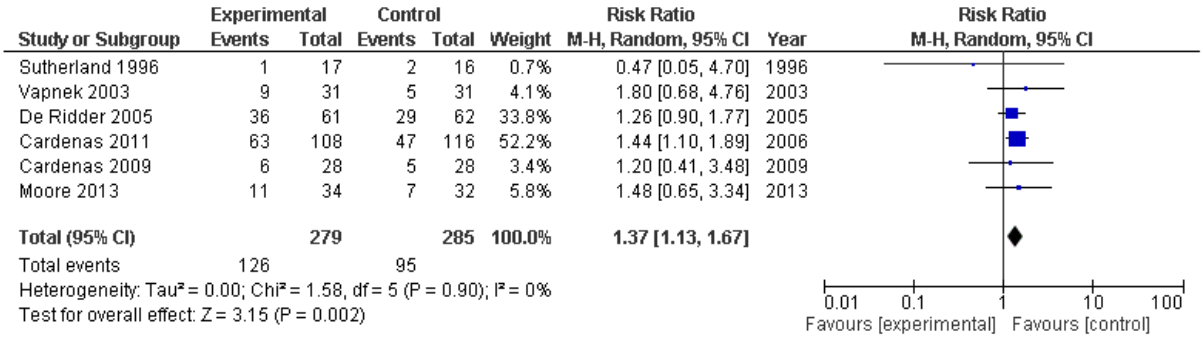

Figure 4. Attrition Rate: Hydrophilic-coated vs uncoated catheters

Interpretation of results

There were no significant differences between any of the comparisons for any outcome. Most studies were small and underpowered. Where there were data, confidence intervals were wide and hence clinically important differences in UTI could neither be identified nor reliably ruled out. Attrition was a problem which may have led to bias. There was considerable variation in length of follow-up and definitions of UTI. No studies addressed cost effectiveness.

Concluding message

Despite 31 randomised trials on intermittent catheterisation, there is still no convincing evidence that UTI are affected by the use of single use catheters, by catheters with specialised coatings or by the use of sterile technique. In particular cost-effectiveness has yet to be established.

Disclosures

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