Review: double bag or Y-set systems reduce peritonitis in patients on continuous ambulatory peritoneal dialysis


QUESTION: Do double bag and Y-set exchange systems reduce peritonitis in patients receiving continuous ambulatory peritoneal dialysis (CAPD) compared with standard systems?

Data sources
Randomised and quasi-randomised trials in any language were identified by searching Medline (1966 to September 1999), EMBASE/Excerpta Medica (1984 to October 1999), CINAHL (1982–96), BIOSIS (1985–96), Cochrane Library, SIGLE (1980 to June 1996), and National Research Register (14th consolidation September 1996); hand searching Kidney International (1980–97); reviewing bibliographies of studies and relevant book chapters; and contacting authors and relevant biomedical companies.

Study selection
Studies were selected if they included patients with end stage renal disease who were treated or expected to be treated with CAPD, and if they compared double bag and/or Y-set exchange systems with standard CAPD exchange systems or compared double bag with Y-set systems.

Data extraction
Data were extracted on study methods (allocation concealment, blinding, description of withdrawals and dropouts, duration of follow up, and whether intention to treat analysis was used), patients, interventions, and outcomes. Main outcome of interest was peritonitis. Secondary outcomes included exit site infections, switch to haemodialysis, and mortality.

Main results
12 trials (n=991) met the inclusion criteria. Meta-analysis showed that fewer patients using double bag or Y-set systems had peritonitis than those using standard systems (8 trials, n=626) (table). The double bag and Y-set systems did not differ from standard systems for exit site infections (3 trials, n=264), number switching to haemodialysis (3 trials, n=264), or mortality (6 trials, n=435).

Comparison of the double bag and Y-set systems showed that fewer patients using the double bag system had peritonitis (3 trials, n=292) (table). The double bag and Y-set systems did not differ for number switching to haemodialysis (2 trials, n=145) or mortality (2 trials, n=193).

Conclusions
Double bag and Y-set systems, compared with standard exchange systems, reduce peritonitis in patients with end stage renal disease who are on continuous ambulatory peritoneal dialysis. Double bag systems have an additional benefit over Y-set systems.
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