

9 PD and transplantation

Guidelines

A. Peritoneal dialysis is a good treatment prior to renal transplantation. Therefore, it should not be considered a contraindication for transplantation.

(Evidence level B)

B. Peritoneal dialysis can be used during delayed graft function after transplantation.

(Evidence level B)

C. The catheter can be left *in situ* 3–4 months despite a functioning graft; nevertheless, earlier removal after successful transplantation is advisable.

(Evidence level B)

D. Peritonitis and exit site infections in transplanted patients should be treated using the ISPD guidelines; the threshold for catheter removal should be low.

(Evidence level B)

Commentary to Guideline 9: PD and transplantation

Guideline A. PD prior to transplantation

Most published data on long-term outcomes of transplantation after treatment with peritoneal dialysis (PD) are single-centre studies. In these papers, the results obtained in PD patients are compared with those in haemodialysis patients transplanted in the same time period [1–10]. With the exception of one small study in 1984, patient survival and graft survival are similar in both patient groups. The numbers of patients in most studies are low, which reduces the statistical power. When the results of different studies are pooled, 1-year graft survival is better in PD patients (72.2 vs 65.5%, $P=0.02$) [11]. Analysis of a large US cohort again showed no differences in patient and graft survival, with the exception of a 15% increased risk of death-censored graft failure in PD patients [10]. In patients with simultaneous pancreas–kidney transplantation, also no differences in patient and graft survival were found between PD and haemodialysis patients [12].

PD before transplantation might be beneficial, as a lower incidence and severity of delayed recovery of renal function after transplantation has been reported in PD patients [13,14]. Although not analysed in the

previous studies, this could also have an impact on graft survival as delayed graft function decreases long-term graft survival [15,16].

Guideline B. PD after transplantation

In PD patients, a lower incidence and severity of delayed recovery of renal function after transplantation have been reported [9,10,13,14]. Nevertheless, dialysis support until the graft functions may be needed. Although routine catheter removal has been advised, post-operative PD is feasible providing the peritoneal cavity is not opened during the implantation procedure, and the majority of authors advise leaving the PD catheter *in situ* and starting PD when needed after transplantation [3,4,7,8,17–19]. The incidence of post-operative infectious complications such as peritonitis and exit site infection is reported to be similar or higher compared with the period before transplantation [19]. However, the common opinion is that these complications can be treated successfully with antibiotics and catheter removal when necessary [3,4,7,8,17–19]. The presence of a catheter for haemodialysis, especially during immunosuppressive therapy, is also a major risk factor for bacteraemia [20]. One study using a decision analytic model suggests that continuing transplant immunosuppression in a failing transplant until urine volume has declined to <100 ml/24 h prolongs life expectancy from 5.3 to 5.8 years [21].

Guideline C. Catheter removal

As discussed in guideline B, PD can be used when dialysis is needed during delayed graft failure or rejection episodes. Some cases of bowel perforation have been reported after transplantation [22–24], possibly due to erosion of the bowels by the indwelling catheter in an empty abdomen. However, the frequency of this complication is very low and most authors advise leaving the catheter *in situ* for 4–16 weeks [3,4,7,8,17–19].

Guideline D. PD related infections

The microorganisms responsible for peritonitis in transplanted PD patients have been found to be more or less similar to the period before transplantation [8], but a higher number of Gram-negative infections has been found [19]. The initial treatment of peritonitis

advised by the ISPD should be followed as well in transplanted ex-PD patients [25]. However, the threshold to remove the catheter in these immunosuppressed patients should be low.

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