Abstract:

BACKGROUND: European and U.S. guidelines emphasise that permanent vascular access in the form of arteriovenous fistulae (AVF) or grafts (AVG) are preferable to central venous catheters (CVC) in paediatric patients on long-term haemodialysis. We report vascular access choice and complication rates in 13 European paediatric nephrology units.


RESULTS: Information was complied on 111 patients in 13 participating centres with a median age of 14 (range 0.25-20.2) years. Central venous catheters were used in 67 of 111 (60%) patients, with 42 patients (38%) having an AVF and two patients (2%) having an AVG. Choice of vascular access was significantly related to patient age, with patients with AVF/AVG having a median age of 16 years compared to 12 years for patients with CVCs (pâ€‰<â€‰0.001). Routine CVC exit site care and catheter lock solution use differed between centres. CVC infections requiring intravenous antibiotics were reported at a rate of
1.9 and exit site infections at a rate of 1.8 episodes/1000 catheter days. Overall infective complications necessitating CVC change occurred at a rate of 0.9 episodes/1000 catheter days. No infective complications were reported in patients with AVF/AVG access. The rate of CVC infections requiring intravenous antibiotics was significantly lower in patients in whom CVC exit sites were cleaned weekly as opposed to every dialysis session (relative risk with every session cleaning vs. weekly cleaning 2.58, 95% confidence interval 1.17-5.69). Catheter malfunction (inadequate blood flow) was a more prevalent complication necessitating 22.4 thrombolytic interventions/1000 catheter days and 2.1 CVC changes/1000 catheter days.

CONCLUSIONS: Central venous catheters remain the predominant choice of vascular access in Europe despite problems of malfunction and infection. AVF/AVG were predominantly used in adolescents without reported complications. More regular exit site cleaning may predispose to CVC infection, but this observation requires prospective evaluation.