Publication Brief

Impact of a quality improvement programme based on vascular access flow monitoring on costs, access occlusion and access failure

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BACKGROUND
Vascular access thrombosis is substantial source of morbidity in chronic haemodialysis patients. Periodical access flow measurements can predict the presence of vascular access stenosis and provide an opportunity for early intervention to prevent subsequent vascular access thrombosis. By this system of quality improvement, vascular access-related costs might be reduced.

OBJECTIVE
To analyze the cost impact of a quality improvement programme based on periodic access flow measurements

STUDY
- The number and costs of vascular access interventions were retrospectively compared between:
  a. Quality Improvement Period from 2001-2003 (218.6 patient-years observed)
  b. Reference Period from 1996-1998 (214.4 patient-years observed) during which no access flow was measured.
- Access flow measurements were performed on a regular basis during the Quality Improvement Period;
- Vascular access interventions included angiography, percutaneous transluminal angioplasty, catheter placement, hospitalization days and costs for surgery.
- Interventions were performed according to the Kidney Disease Outcome Quality Initiative.

RESULTS
- Surgical thrombectomy procedures were significantly less during the Quality Improvement Period (0.25 +/- 0.57 events/patient-year) compared with the Reference Period (0.63 +/- 1.06 events/patient-year; P = 0.000)
- Access loss was not significantly different.
- During the Quality Improvement Period, 205 radiological interventions were performed (0.88 +/- 1.16 events/patient-year); in the Reference Period around 48 (0.33 +/- 0.65 events/patient-year; P = 0.000).
- Access-related costs tended to be lower during the Quality Improvement Period compared with the Reference Period.
  Arteriovenous Graft Patients: access-related costs were significantly lower during the Quality Improvement Period (2360.95 euro +/- 2838.17 euro patient-year) compared with the Reference Period (4003.96 euro +/- 3810.92 euro patient-year).
  Arteriovenous fistula Patients: access-related costs were not lower between the two periods.

CONCLUSIONS
A quality improvement programme based on periodical access flow measurement reduced the number of acute vascular access failures due to thrombotic events and also significantly reduced health care costs in patients with arteriovenous grafts, but not in patients with arteriovenous fistulas. The quality improvement programme had no effect on access survival.

REFERENCE