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CARDIOVASCULAR DISEASE

Patients with ESRD are at increased risk of complications and death after major elective vascular surgery

A new study published in *Annals of Surgery* reports that the risk of postoperative complications and death after a major elective vascular surgical operation is significantly increased in patients with end-stage renal disease (ESRD), particularly in those aged ≥65 years.

> “...the older patients had worse 30-day outcomes...”

Gajdos *et al.* used the American College of Surgeons National Surgical Quality Improvement Program database to analyse postoperative morbidity and mortality data from 36,222 patients (1,409 with ESRD) who underwent major elective vascular surgical procedures for abdominal aortic aneurysm, carotid artery occlusive disease, or peripheral disease between 2005 and 2008. They used multivariable logistic regression analysis to examine the impact of ESRD on 30-day surgical outcomes adjusted for factors including age, sex, race and type of anaesthesia.

Gajdos and co-workers found that patients with ESRD undergoing major elective vascular surgery were significantly more likely to require unplanned intubation, develop ventilator dependence, develop a surgical site infection, or require a return to the operating room within 30 days compared with patients without ESRD. Those with ESRD were also at increased risk of a composite pulmonary outcome (pneumonia, failure to wean from a ventilator for >48 h, or reintubation for cardiorespiratory failure), an overall composite outcome (surgical site infection, vascular complications and pulmonary complications) or death within 30 days after surgery.

When the researchers further stratified the patients with ESRD according to age (<65 years [$n = 682$] and ≥65 years [$n = 727$]), they found that the older patients had worse 30-day outcomes (risk of unplanned intubation, composite pulmonary outcome and mortality) than the younger patients.

Gajdos and colleagues also analysed the effect of ESRD on postoperative outcomes by anatomical sites and found that open aortic operations carried the highest risk of complications and death, followed by peripheral revascularizations and then carotid revascularization.

“Surgeons should strongly consider the increased risk of adverse postoperative outcomes in patients with ESRD requiring major elective vascular intervention—particularly for asymptomatic indications,” say the authors.

Rebecca Kelsey

Original article Gajdos, C. *et al.* The risk of major elective vascular surgical procedures in patients with end-stage renal disease. *Ann. Surg.* **257**, 766–773 (2013)