As confirmed in the study of Ali et al., patients undergoing open abdominal aortic aneurysm repair are at high perioperative and long-term cardiac risk. Therefore, these patients should ideally be identified at the preoperative screening visit. This offers a golden opportunity for clinicians to address both unfavourable lifestyle habits as well as instituting aggressive medical risk factor management. Several risk factors that predict adverse perioperative as well as adverse long-term outcome can be identified and treated at this stage.

According to the Customized Probability Index by Kertai et al. the type of surgery is a strong risk factor; patients with a ruptured abdominal aortic aneurysm have the worst outcome, followed by elective thoracoabdominal and abdominal aortic surgery.1 Risk factors based on medical history, ordered in descending risk, were: renal dysfunction, congestive heart failure, ischemic heart disease, cerebrovascular event, hypertension, and pulmonary disease. Interestingly, these factors also predict long term outcome in vascular surgery patients.

In addition to clinical risk factors biomarkers such as hsCRP have emerged as potential predictors of adverse cardiovascular events after vascular surgery. As shown by Owens et al. in a group of 91 vascular surgery patients, a preoperative hsCRP level >5 mg/l was associated with a 2.3-fold increased risk for adverse cardiovascular events during a mean follow-up of 12 months.2

Another well known biomarker, in the current study assessed after the stress of surgery, is troponin release. It was already shown in 2003 that patients with a perioperative troponin T release >0.03 ng/ml and/or a troponin I release >0.6 ng/ml had a significant independent 2-fold increased risk for long-term mortality during a mean follow-up of 32 months.3 This was confirmed in a study of 393 vascular surgery patients by Kertai et al.: an increase in troponin T level >0.1 ng/ml was associated with a 1.9-fold increased risk for all-cause mortality during a median follow-up of 4 years.4

Although the combination of clinical cardiac risk factors and biomarkers offers a unique opportunity to stratify patients according to the long-term risk, outcome in patients with peripheral arterial disease remains poor. The 5-year event rate of cerebrocardiovascular events is approximately 20% with mortality rates of up to 30%. The Reduction of Atherothrombosis for Continued Health (REACH) Registry, including 55,814 patients with known atherosclerotic disease showed that patients with PAD or a combination of PAD and CAD have a significant worse outcome compared to patients with CAD only.5 An explanation for the high event rate is the medical undertreatment of patients with PAD. This was also recently confirmed in a report from Denmark. There is substantial evidence that medical risk factor management is associated with an improved event-free survival. In fact, current guidelines recommend the aggressive use of statins, antiplatelet therapy, and blood pressure lowering agents in these patients.6 Yet implication of these guidelines into clinical practice is time-consuming.

For the improvement of long-term prognosis of patients with AAA it is advisable that current guidelines on lifestyle changes and treatment targets of cardiac risk factors are fully disseminated among physicians involved in care of these patients. The routine perioperative measurement of troponins might further
guide clinicians in selecting patients that require more aggressive medical treatment.

References


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