The Impact of a Well Structured Vascular Registry in Assessing the Long-Term Survival After Repair of Abdominal Aortic Aneurysms

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Over the last 2 decades, the treatment of infrarenal abdominal aortic aneurysms (AAAs) has been characterized by significant improvement in patient outcomes. Many important contributions have been made in assessment of the natural history, improvement in patient selection, effective preoperative risk factor modifications, and development and introduction of new therapeutic options in the management of patients with this potentially fatal condition. Endovascular aneurysm repair (EVAR) was initially recommended by Parodi and collaborators for patients not suitable for open AAA repair. The Food and Drug Administration approval of 2 endoluminal devices for the treatment of AAA in 1999 began a new era of less invasive treatment for patients with this condition. This new therapeutic approach has been accepted widely in the United States, with nearly 60% of Medicare-eligible patients with elective AAA repair being treated by this less invasive technique. This new technique has been adopted widely by variable-volume hospitals throughout the world. Anderson and colleagues reported on the impact of EVAR in the state of New York. In a period of 3 years (2000–2002), 50% of patients who underwent elective AAA repair were treated by EVAR. More importantly, EVAR had a statistically significant decrease in 30-day mortality postoperative complications and hospital length of stay compared with conventional open repair. Analysis of Medicare and Nationwide Inpatient Sample databases has found similar results, demonstrating not only an overall increase of AAAs treated but also the impact that EVAR has had in decreasing 30-day mortality and overall short-term outcomes. The increasing use of EVAR for AAAs has also had a significant impact on the management of older and higher-risk patients in whom open repair would be associated with a high operative mortality or rupture if no treatment option is offered. The impact of risk stratification in patient selection, as well as risk factor modifications, has led to improvement in perioperative outcomes for elective AAA repair. Better overall health by best medical therapy has most likely also affected the improved outcomes reported in the treatment of ruptured AAA. The introduction and ample application of EVAR to both intact and ruptured AAAs has further affected the early mortality and morbidity associated with this less invasive treatment. Randomized trials, registries, and single-center reports comparing EVAR and conventional open repair have consistently demonstrated a significant decrease in 30-day mortality and perioperative mortality. Other US nationwide databases have also noted the advantage of EVAR over conventional open repair in terms of early in-hospital mortality. These national databases are limited by their lack of analysis of the impact of one therapy versus the other on long-term survival for either intact or ruptured AAA repair. Neither the EVAR Trial I nor the Dutch Randomized Endovascular Aneurysm Management (DREAM) trial demonstrated an advantage of EVAR over conventional open repair in long-term survival.

In this issue, Mani and collaborators very effectively report the impact of open repair and EVAR in the treatment of both intact and ruptured AAAs based on an accurate and validated Swedish aneurysm registry. This long-term analysis of postoperative and long-term crude and relative survival in Swedish citizens treated for AAA is based on verifiable patient outcomes. Within this homogeneous patient population, their analysis clearly demonstrates an improvement in long-term survival over the 2 periods evaluated (1987–1999 and 2000–2005). Interestingly, over the same period, there was an increase in overall life expectancy in the Swedish population. Similar findings have been reported by investigators in the United States. Giles and collaborators demonstrated that despite the many factors that can affect long-term survival in aneurysm patients, the introduction of EVAR has been associated not only with an overall increase in the elective treatment of AAA but also a decrease in rupture of AAA and overall patient survival. Many factors, including reduction in smoking, better treatment of hypertension, and better lipid control, have been thought to have affected the overall improvement in patient survival.

The use of auditable registries is becoming an important tool for evaluating the impact of new therapies in patient outcomes, as well as providing guidelines for outcomes improvement. These registries can collect real-world data without inclusion and exclusion criteria. The best registry has a verifiable auditing system and also provides transparency to physicians, healthcare agencies, and patients. The Agency for Healthcare Research and Quality has recently published a user’s guide that delineates the components of an effective registry. A well-structured registry can influence practice...
guidelines, as well as healthcare decision-based outcomes analysis.

Because EVAR is used more frequently for the treatment of AAA in the Swedish population, the real impact of this new technology in improving long-term crude and relative survival will make the Swedish aneurysm registry a very useful outcomes tool in guiding the treatment of patients with AAA.

**Disclosures**

None.

**References**


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