Prophylactic Endovascular Repair of Small Abdominal Aortic Aneurysm

We read with great interest the article by Zarins et al.1 They reviewed all patients with small abdominal aortic aneurysm treated with a stent graft in the multicenter AneuRx clinical trial. A subgroup of patients who met the age and aneurysm size inclusion criteria of the UK Small Aneurysm Trial (EVARmatch) were compared to the published results of the surveillance patient cohort of the UK Small Aneurysm Trial. While EVAR trials 1 and 2 suggested endovascular repair may have no advantage over open repair (for patients considered fit for open repair) or no intervention (for patients of poor health status considered unfit for open repair) with regard to overall survival, this form of treatment has been advocated for small abdominal aortic aneurysms.2–4 Zarins et al. made every effort to match the AneuRx small aneurysm patient population to the inclusion criteria of the UK Small Aneurysm Trial, but there were important differences between the EVARmatch and UK surveillance groups with respect to age, comorbidities and gender distribution. It would be interesting to know morbidities, including total or fatal ruptures and aneurysm-related deaths, adjusted for age, comorbidities, and gender. Although we greatly appreciate the ‘virtual’ randomized controlled trial by Zarins et al., we strongly support an ‘actual’ trial of open versus endoluminal repair of small aortic aneurysms.

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Accepted 23 December 2005
Available online 14 February 2006
aneurysms than UK surveillance patients and these differences would tend to balance the analysis in favor of surveillance. On the other hand, there were proportionately twice as many women in the UK surveillance group and women had a four fold higher risk of rupture in the UK experience, thus possibly skewing the analysis in favor of EVAR. We adjusted our analysis of fatal rupture and all-cause mortality for differences in gender and length of follow up and the statistically significant differences in favor of EVAR persisted. Since the published UK data was not stratified by gender, age or comorbidities for the other endpoints, we could not adjust for them.

Since the UK small aneurysm trial was focused on all-cause mortality as the primary endpoint the published data allowed us to stratify patients by age groups and gender for this end-point. The overall age-adjusted comparison of all-cause mortality revealed a higher mortality in UK surveillance (8.3 deaths per 100 patient years) than in EVARmatch (6.0 deaths per 100 patient years, \( p = 0.005 \)). The overall gender-adjusted comparison for all-cause mortality revealed a higher mortality in UK surveillance (8.3 deaths per 100 patient years) than in EVARmatch (5.9 deaths per 100 patient years, \( p = 0.003 \)). Thus, early endovascular repair appears to reduce all-cause mortality in patients with small aneurysms.

Although the prospective, randomized EVAR-1 trial of good risk patients with aneurysms larger than 5.5 cm did not show a survival advantage over open repair, it did show a significant reduction in operative mortality and a significant reduction in AAA related death which was maintained over the 4 year follow up period. These endpoints are the most relevant endpoints in evaluating aneurysm treatment strategies and support the continued use of EVAR in good risk patients. Our finding that operative mortality and AAA related death were significantly reduced in patients treated with EVAR compared to surveillance supports its use in selected patients with small aneurysms and calls for a confirming prospective, randomized trial.

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Accepted 23 December 2005
Available online 13 February 2006