

Mid-Term (Up to 3-Year) Results of the Randomized Prospective DREAM Trial Comparing Endovascular Aneurysm Repair with Open Abdominal Aortic Aneurysm Repair

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Two randomized trials have shown better outcomes with elective endovascular repair of abdominal aortic aneurysms (AAAs) than with conventional open repair in the first month after the procedure. We investigated whether this advantage is sustained beyond the perioperative period.

We conducted a multicenter, randomized trial comparing open repair with endovascular repair in 351 patients who had received a diagnosis of an AAA of at least 5 cm in diameter and who were considered suitable candidates for both techniques. Survival after randomization was calculated with the use of Kaplan-Meier analysis and compared with the use of the log-rank test on an intention-to-treat basis. The causes of death were scrutinized through the first 24 months after randomization.

There were 322 men and 29 women, with a median age of 70 years (quartile range: 66–75 years); 178 patients were randomized to open repair and 173 to endovascular repair. Two years after randomization, the cumulative survival rates were 89.6% for open repair and 89.7% for endovascular repair (difference, –0.1 percentage points; 95% CI, –6.8 to 6.7 percentage points). The cumulative rates of aneurysm-related death were 5.7% for open repair and 2.1% for endovascular repair (difference, 3.7 percentage points; 95% CI, –0.5 to 7.9 percentage points). This advantage of endovascular repair over open repair was entirely accounted for by events occurring in the perioperative period, with no significant difference in subsequent aneurysm-related mortality. The rate of survival free of moderate or severe complications was also similar in the two groups at 2 years (at 65.9% for open repair and 65.6% for endovascular repair; difference, 0.3 percentage points; 95% CI, –10.0 to 10.6 percentage points) (Figure 1).

Of 25 patients who had died within 18 months of randomization, 2 had died before surgery (one in each trial group), 8 patients had died perioperatively after OR, and 2 after endovascular aneurysm repair (EVAR). During follow-up 4 patients in the EVAR group had died of non-AAA-related cardiovascular events versus none in the OR group ($p = .044$). Of the remaining 9 deceased patients, 4 had died in the OR group (1 of graft-infection, 1 of pulmonary disease, 1 of carcinoma, and 1 of unknown cause), and 5 had died in the EVAR group (3 of carcinoma, and 2 of other or unknown causes).

In conclusion, the perioperative survival advantage with endovascular repair as compared with open repair is not sustained after the first postoperative year.

Figure 1. Rate of survival free of moderate or severe complications was similar in the two groups at 2 years.