

Strategy of endovascular versus open repair for patients with clinical diagnosis of ruptured abdominal aortic aneurysm: the IMPROVE RCT

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Plain English summary

The IMPROVE RCT

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Plain English summary

Rupture of a swelling of the aorta (abdominal aortic aneurysm), the main blood vessel in the body, causes massive bleeding and leads to the death of about 6000 people annually in the UK. Many of these people do not reach hospital. The only hope is an emergency operation to repair the aorta and, even then, < 60% of people survive. The Immediate Management of the Patient with Rupture: Open Versus Endovascular repair (IMPROVE) trial compared two different methods for repairing the aorta, endovascular repair (the newer keyhole approach via a small cut in the groin, if the aorta is the right shape for this) and open repair (via a big cut in the belly).

A total of 613 participants (nearly one-quarter of them women) with a diagnosis of ruptured abdominal aortic aneurysm were randomised, half to an endovascular strategy and half to open repair, and followed for survival, further operations, recovery and quality of life, and treatment costs.

At 30 days after rupture (standard surgical reporting), almost two-thirds of each group were still alive, but those in the endovascular strategy group recovered quicker and went home sooner. The endovascular strategy appeared to be slightly more effective in saving lives in women than in men.

By 1 year after rupture, just over half of both the endovascular strategy group and the open repair group were alive, with no difference between the groups in the number of further operations needed. However, quality of life was better in the endovascular strategy group at both 3 and 12 months.

By 3 years after rupture, slightly more participants in the endovascular strategy group (54%) were alive than in the open repair group (46%); quality of life was good for both groups and the number of further operations was small.

At all time points, the endovascular strategy had non-significantly lower health-care costs.

Overall, the endovascular strategy was likely to be more cost-effective than open repair, with benefits observed for participants and health-care providers.

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