The UK resuscitative endovascular balloon occlusion of the aorta in trauma patients with life-threatening torso haemorrhage: the (UK-REBOA) multicentre RCT

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Plain language summary

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Plain language summary

Trauma (physical injury) is a major cause of death and disability. The most common cause of *preventable* death after injury is uncontrolled bleeding. Resuscitative endovascular balloon occlusion of the aorta is a technique whereby a small balloon is inflated in the aorta (main blood vessel) which aims to limit blood loss until an operation can be done to stop the bleeding.

In this study, which is the first randomised trial in the world of this technique, we investigated whether adding resuscitative endovascular balloon occlusion of the aorta to the standard care received in a major trauma centre reduced the risk of death in trauma patients who had life-threatening uncontrolled bleeding.

The study took place in 16 major trauma centres in the United Kingdom. Ninety adult trauma patients with confirmed or suspected uncontrolled bleeding took part and were randomly divided into two groups: (1) those who received standard care and (2) those who received standard care plus resuscitative endovascular balloon occlusion of the aorta. We followed participants for 6 months using routinely collected data from the National Health Service and from the Trauma Audit Research Network registry. We also contacted surviving patients at 6 months to ask about their quality of life.

In the standard care group, 42% of participants died within 90 days of their injury compared to 54% of participants in the standard care plus resuscitative endovascular balloon occlusion of the aorta group. Risk of death was also higher in the standard care plus resuscitative endovascular balloon occlusion of the aorta group at all other time points (3, 6 and 24 hours, in hospital and at 6 months). Overall, the study showed that the use of resuscitative endovascular balloon occlusion of the aorta in hospital increased the risk of death.

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