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**Anti-fibrinolytic drugs reduce blood loss during
cardiac surgery without increasing the risk of
heart attack and stroke**

The amount of blood loss that occurs during major complex surgery is limited by the body's ability to form blood clots. These close off small vessels and prevent more blood leaking out of the patient's circulatory system. One problem is that the body also has mechanisms that break down blood clots.

This Cochrane Review concludes that drugs that slow down the rate at which these blood clots are dissolved, called anti-fibrinolytics, can significantly reduce blood loss, particularly during cardiac surgery, and reduce the need for re-operation because of continued bleeding. One of the effective drugs, tranexamic acid, is quite cheap and is likely to be cost effective, particularly in cardiac surgery.

The big question is whether the benefits of treatment with these drugs are offset by adverse effects, in particular thrombosis leading to an excess risk of heart attack and stroke. This has been a particular concern with aprotinin and some studies that did not use randomisation found an increased risk of these complications with this drug. However, this Cochrane Review of randomised controlled trials found no increase in the risk of thrombosis with aprotinin or tranexamic acid.

"Our review of over 200 clinical trials found that using anti-fibrinolytic drugs during surgery reduced bleeding and reduced the need for transfusions of red blood cells. Importantly they did not appear to increase the risk of serious adverse effects," says lead researcher Professor David Henry, of the University of Newcastle, Waratah, Australia.

"This is an extremely important finding," says Professor Mike Clarke, the UK Cochrane Centre Director. "It shows very strongly that anti-fibrinolytics, which are cheap, can dramatically reduce the need for blood transfusion. Blood is scarce, expensive and transfusions can be dangerous, so this is likely to be a very important finding globally."

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Notes for editors

1. Full citation: Henry DA, Carless PA, Moxey AJ, O'Connell D, Stokes BJ, McClelland B, Laupacis A, Fergusson D. Anti-fibrinolytic use for minimising perioperative allogeneic blood transfusion. *Cochrane Database of Systematic Reviews* 2007, Issue 4. DOI: 10.1002/14651858.CD001886.pub2.
2. Dr Henry now works at the Institute for Clinical Evaluative Sciences in Toronto, Canada. E-mail address david.henry@ices.on.ca; Phone 1-416-371-6947
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^a Jadad AR, Cook DJ, Jones A, Klassen TP, Tugwell P, Moher M, et al. Methodology and reports of systematic Reviews and meta-analyses: a comparison of Cochrane Reviews with articles published in paper-based journal.