

TASTE trial challenge current practice of blood clot aspiration after heart attack

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Aspiration of the blood clot or "thrombus" that causes a heart attack before re-opening a patient's artery with a balloon catheter does not improve survival compared to performing balloon dilation and stenting alone according to the results of the Thrombus Aspiration in ST-Elevation myocardial infarction in Scandinavia (TASTE) trial.

"We believe that TASTE questions the usefulness of thrombus [aspiration](#) as a routine adjunct and the recommendation for its general use in international guidelines should probably be down-graded," said lead author Ole Fröbert, MD, PhD, from the Department of Cardiology at Örebro University Hospital, in Örebro, Sweden.

The multicenter, prospective, randomized, controlled open-label trial enrolled 7244 [patients](#) with STEMI from Sweden, Denmark and Iceland who had a diagnosis of ST-elevation [myocardial infarction](#) (STEMI).

Half of the patients were assigned to balloon treatment only (known as percutaneous [coronary intervention](#), or PCI) and the other half had their blood clot aspirated before PCI.

The mortality rate at 30 days post-surgery procedure was not statistically different between the groups (3.0% versus 2.8% respectively).

Similarly, there was no difference between the two groups for secondary endpoints including risk of [new heart](#) attack, stroke and complications related to the treatment.

Even high risk groups such as smokers, patients with diabetes or patients with large clots had similar results with either approach.

"Our findings do not support a role for this additional procedure as a routine future treatment," said Dr. Fröbert.

The study results will likely have an immediate impact on clinical practice, he added.

Current European Society of Cardiology guidelines on treatment of patients with ST-elevation myocardial infarction (STEMI) recommend that thrombus aspiration should be considered and "most opinion leaders advocate its use," said study co-chair Stefan James MD, PhD, from the Department of Cardiology and Uppsala Clinical Research Center at Uppsala University Hospital in Uppsala, Sweden.

Since the presentation of the TAPAS trial that suggested a mortality benefit (*N Engl J Med* 2008;358:557-67) thrombus aspiration has "gained an enormous popularity," he explained. "The therapy is so popular among interventional cardiologists because it intuitively feels beneficial to aspirate the clot that closes the artery."

But recent research has suggested that thrombus aspiration also carries risks. In 2012, a meta-analysis associated the procedure with a borderline significantly higher rate of stroke (*Int J Cardiol* 2012;166:606-12.) and another study showed that systemic embolization can occur as result (*Circ J* 2009;73:1356-8).

The TASTE trial is the first large-scale randomized trial of thrombus aspiration for STEMI to be large enough to reveal meaningful findings on mortality and morbidity.

It enrolled more patients than all previous randomized trials of this

procedure combined and included a much broader range of patients in order to make the results relevant to everyday clinical practice.

"An even more far-reaching impact is that our trial is the first trial ever to use the registry based trial concept, which we invented, " added Dr. Fröbert.

The study's unique Registry-Based Randomized Clinical Trial (RRCT) protocol used national registries as on-line platforms for randomization, case record forms and follow-up, making the trial economically and administratively feasible.

"This concept reduces costs to 1% or less of a conventional randomized trial and enables the testing of treatments that have no revenue potential. since commercial interest is often the main incentive behind large-scale randomized clinical trials," he said. "In general fewer of these trials are being performed because of the huge costs involved. This trial concept can help to break the deadlock of clinical [trials](#)."

Provided by European Society of Cardiology

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