

Stroke risk clarified following routine clot removal after heart attack

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Clearing blood clots from arteries during treatment for an acute myocardial infarction was a relatively common practice until a recent, large-scale study showed that the technique, known as thrombectomy, might actually increase the risk of stroke. Now, new insights from the TOTAL trial, presented here at EuroPCR 2015, indicate that the risk of stroke with thrombectomy during angioplasty, compared to angioplasty alone is evident very early following the procedure.

Dr. Sanjit Jolly, the study's lead author and an interventional cardiologist and Associate Professor at McMaster University in Hamilton, Ontario, Canada, said: "Given that thrombectomy has become a part of clinical practice, we felt it was very important to understand the [stroke](#) findings in the TOTAL trial."

The TOTAL trial compared the use of thrombectomy versus PCI alone in more than 10,000 patients hospitalized for a severe heart attack (ST-Elevation MI). For the study as a whole, the rate of cardiovascular death, MI, shock, or severe heart failure within 180 days were no different between the two groups. For the safety end point, looking at stroke within 30 days, TOTAL investigators saw a significant increase in the rate of strokes in the clot removal group than in the angioplasty-only group. This unexpected finding prompted Jolly and colleagues to dig deeper into the timing, severity, subtype, and predictors of stroke in TOTAL.

They found that the risk of a composite of stroke or transient ischaemic

attack (TIA) was significantly higher in thrombectomy-treated patients than the angioplasty-only patients at 30 days (0.8% vs. 0.4%, $p=0.003$). This difference was also seen in the analysis that excluded minor events (TIAs) and focused solely on stroke. Investigators also saw a trend towards an increased risk of stroke with thrombectomy between 90 and 180 days, but this increase lacks "a plausible explanation" and may be due to chance, the authors say. Of note, there were no differences in anticoagulant or antiplatelet therapy at 30 days or 180 days to help explain the different stroke rates. A detailed landmark analysis, shows the highest risk period was within 48 hours.

Stroke severity as measured by modified Rankin scale also tended to be greater in the clot-removal group, and both ischaemic as well as haemorrhagic strokes were statistically more common in the thrombectomy-treated patients. Numbers were small, however, leading Jolly and colleagues to believe that the excess in [haemorrhagic stroke](#) may have occurred by chance.

"Given the findings of TOTAL, future device trials to remove thrombus from the coronary artery need to carefully collect and examine stroke outcomes in addition to efficacy outcomes," Jolly said.

Commenting on the study, Prof. Jean Marco, PCR Honorary Chairman, pointed out that the numbers of patients experiencing a stroke at 30 days (33 patients vs. 16, out of a total of 10,063) were very low, so the findings "may really be a matter of chance." As for the accumulation of additional strokes in both groups between 30 days and 180 days (19 additional strokes in the thrombectomy arm vs. 9 in the angioplasty-only group, "This is difficult to understand and again is probably a matter of chance."

Dr. Marco added, "The risk of stroke is a reality when performing thrombectomy, particularly if the basic rules for the correct use of the

procedure are not followed. All tips and tricks for efficiency and safety with this procedure must be clearly explained, disseminated and implemented if this procedure is to be performed."

Provided by EuroPCR

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