

The Dark Side of Aspiration Thrombectomy in Patients with Acute STEMI Treated by Primary PCI

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Background: Aspiration thrombectomy (AT) improves myocardial blush and ST-segment resolution, and decreases 1 year mortality in STEMI patients treated by primary PCI. Complications related to AT use have not been sufficiently studied.

Methods: Angiographic results and MACE after one year of follow up were evaluated in 76 patients with STEMI that underwent provisional AT followed primary PCI between Jan 2008 – Jan 2009. Patients that underwent conventional PCI with additional AT were excluded. Pronto LP and Export AP 6F aspiration catheters were used.

Results: Eighty-three (33%) of all patients with STEMI treated by primary PCI were planned for provisional AT. In 7 (8.4%) cases AT was aborted due to failure to pass device through culprit artery. Thirty-nine pts underwent AT followed by direct stenting; 37 pts underwent AT followed by additional balloon predilatation before stenting.

Immediately after AT, in 43 (56.5%) pts TIMI flow score was improved; in 30 (39.6%) there was no change; in 3 (3.9%) cases it deteriorated. Twenty-five (37.3%) patients were still with TIMI 0-I flow after AT.

AT was complicated by serious dissection in 3 (3.9%) patients, however was completely resolved after stent implantation. In 13 (17.1%) pts AT the complication was distal embolization; in 10 (13.1%) side branch compromise or obstruction due to plaque shifting; in 3 (3.9%) retrograde embolisation to proximal side branch or another artery.

Final angiographic success in this group was 93.4%. In a one-year follow up period, mortality rate was 3.9% and re-infarction was 3.9%. 10.5% patients underwent re-intervention due to in-stent thrombosis (n=1), restenosis (n=1) and non culprit revascularization (n=6).

Conclusions: Use of AT is associated with high rate of angiographic success, and relatively rare but significant procedural complications such as deterioration of coronary flow, dissection, distal embolization, side branch occlusion and retrograde embolization.