Thrombus Aspiration and Pre-Hospital Ticagrelor Administration in ST-Elevation Myocardial Infarction: Findings from the ATLANTIC Trial

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Background: Adjunctive devices and early pharmacological therapies are potential options to improve myocardial reperfusion and clinical outcomes in patients (Pts) with ST-elevation myocardial infarction (STEMI) treated with primary percutaneous coronary intervention (PCI).

Purpose: To evaluate the potential benefit of thrombus aspiration (TA) and pre-hospital (pre-H) ticagrelor treatment in patients enrolled in the ATLANTIC trial (NCT01347580).

Methods: This analysis included 1630 Pts who underwent primary PCI. Multivariate analysis was used to explore the potential association of TA and pre-H treatment to myocardial reperfusion post-PCI and clinical outcomes.

Results: A total of 941 (57.7%) Pts underwent TA. Pts treated with TA were younger (60 ± 12 vs 62 ± 12 years, p<0.001), more frequently men (83% vs 78.4%, p=0.019), less frequently had a previous myocardial infarction (MI) (6.6 vs 9.6%, p=0.027) or transient ischemic attack (0.4% vs 1.5%, p=0.026), more frequently had radial access (70.4% vs 64.7%, p=0.015), less frequently had stent implantation (93.2% vs 95.6%, p=0.003) and more often received glycoprotein IIb/IIIa inhibitors (GPIs) before PCI (37.2 vs 25.4%, p<0.001) compared with patients treated without TA.

Conclusions: In Pts enrolled in the ATLANTIC trial, TA was left to physicians’ discretion and was not associated with improvement in myocardial reperfusion or 30-day clinical outcomes. Pre-H ticagrelor treatment predicted both lower 30-day ST and new MI without significant interaction with TA.