Transradial Primary PCI for STEMI: Balancing Reperfusion Time and Bleeding Complications

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Background: Primary percutaneous coronary intervention (PPCI) for STEMI is associated with increased bleeding complications, impacting clinical outcome. Transradial PPCI could decrease the risk of bleeding but concerns about technical difficulties and longer reperfusion times limit its adoption.

Aim: To compare reperfusion times and bleeding complications in a large cohort of STEMI treated by PPCI through the transradial (TR) or transfemoral (TF) approach.

Methods: Retrospective comparison between 672 STEMI patients treated with TR-PPCI and 547 patients treated with TF-PPCI (1/05-12/09). End points were door to balloon time, access site bleeding, non access site bleeding and total bleeding.

Results. Patients treated with TR-PPCI were younger than those having TF-PPCI, (57± 13 vs. 62± 14 years, p<0.01, respectively), more frequently males (85% vs. 73%, p<0.01) and had less renal failure (9% vs. 16%, p<0.01) or hemodynamic compromise [pulmonary edema or cardiogenic shock 1% vs. 4%, p=0.01]. Angiographic and angioplasty characteristics, including the angiographic success rate were similar, with the exception of a higher use of aspiration devices in the TR-PPCI group (31% vs. 15%. p<0.01). The door to balloon time was similar in both groups (69 ± 57 vs. 66 ± 57 min. , p=ns). Significant lower rates of overall bleeding (5% vs. 24%, p<0.01) , access site bleeding (4% vs. 22%, p<0.01), non access site bleeding (1% vs. 3%, p=0.01) and need for blood transfusion (1% vs. 4%, p=0.01) were observed in the TR-PPCI group.

Conclusion: TR-PPCI is associated with a significantly lower rate of bleeding as compared to TF-PPCI. This benefit can be achieved without compromising reperfusion time.