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Distal transradial approach for primary percutaneous coronary intervention for patients with acute myocardial infarction: a multicentre study

Authors:
T Izumikawa¹, S Takeshita², T Yamada³, Y Mizuguchi³, N Taniguchi³, S Nakajima³, T Hata³, A Takahashi³,
¹Izumikawa Hospital - Minamishimabara - Japan, ²Nagasaki Harbor Medical Center - Nagasaki - Japan,
³Sakurakai Takahashi Hospital - Kobe - Japan,

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Background

The distal transradial approach (dTRA) for coronary catheterisation is a newly introduced alternative to the conventional transradial approach. This technique is expected to decrease the incidence of haemorrhagic complications and improve patient comfort. However, limited data are available regarding the application of this technique in patients with acute myocardial infarction (AMI). This study investigated the feasibility and safety of the dTRA for primary percutaneous coronary intervention (PCI) in patients with AMI.

Methods

This study included patients with AMI who underwent primary PCI via the distal radial artery across 3 Japanese hospitals between January 2018 and January 2019. Patients’ background, procedural characteristics, and clinical outcomes including the incidence of haemorrhagic complications were analysed.

Results

This study enrolled 95 consecutive patients with AMI, including 68 patients (71.6%) with ST-segment elevation myocardial infarction (STEMI), in whom distal radial artery puncture was attempted for primary PCI. The patients included 70 men (73.7%), and the mean age was 72.2 ± 12.4 years. Among these patients, cannulation was successfully performed in 89 patients (93.7%). A 5-, 6-, or 7-French sheath (conventional or slender) was used in this study. Cannulation was performed using a forearm radial artery approach in patients in whom dTRA failed.

PCI was successfully performed in all patients. The meantime to achieve haemostasis was 6.3 ± 5.3 hours, and no major bleeding complications occurred. Based on The Early Discharge After Transradial Stenting of Coronary Arteries trial haematoma scale, grade I, II, and III subcutaneous haemorrhages were observed in 16 (16.8%), 4 (4.2%), and 1 patient (1.1%), respectively. No patient developed a haematoma > grade IV.

In patients with STEMI, the mean door-to-balloon time was 39.4 ± 31.9 min, and the mean puncture-to-balloon time was 19.7 ± 14.2 min.

Conclusions

The distal radial approach is feasible and safe for primary PCI in selected patients with AMI. The application of the dTRA may serve as a less invasive strategy for the treatment of patients with AMI.