

Should Radial Access Be the Preferred Approach in the Elderly?

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Randomized trials of radial vs. femoral access support the concept that radial access should be the preferred approach. The recently published Radial Vs. femoral (RIVAL) trial (n = 7,021) demonstrated that radial access was associated with similar rates of primary outcome of death, myocardial infarction, stroke or major bleeding but was associated with a more than 60% reduction in major vascular complications [1.4% vs. 3.7%, hazard ratio (HR) 0.37, 95% confidence interval (95% CI) 0.27-0.52; P < 0.0001]. In the subgroups of highest volume radial centers and ST elevation myocardial infarction (STEMI) there was a benefit observed for the primary outcome.¹

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THE ELDERLY

The proportion of elderly patients who undergo percutaneous coronary intervention (PCI) has increased in recent decades. Studies have shown that advanced age is an important predictor of procedural failure with radial access and is associated with an increased need for access site cross-over.² In the elderly, there is a higher incidence of radial and brachiocephalic trunk tortuosity.³ On the other hand, advanced age is important risk factor for procedural related major bleeding and vascular complications.^{4,5} While radial arterial access is an attractive PCI approach in the elderly given its potential to reduce vascular complications and thus reduce bleeding, the frequently encountered technical challenges of the radial approach and the potentially reduced procedural success in the older patient group may discourage the interventionalist from using this approach in the elderly.

CLINICAL SCENARIO

An 88 year old elderly male with STEMI is referred for primary PCI, should the interventionalists' default approach be radial or femoral approach?

In the study published by Andrade et al.⁶ in this issue of *Revista Brasileira de Cardiologia Invasiva*, the outcomes of 635 patients over the age of 60 undergoing PCI via the radial approach were reported. Of note 50% of the population was presenting with a non-ST elevation acute coronary syndrome and 22% with STEMI.

The angiographic success was 96.8% and the access site cross-over rate of radial to femoral approach was only 2.8% suggesting that these operators were highly experienced at radial access. The rate of major bleeding was very low at 0.8% with a rate of 1.6% for hematomas.

Of interest, they did not find a significant difference in the cross-over rate between patients age 60-74 and ≥ 75 (2.3% vs. 4.2%, respectively). As well, they did not find a significant difference in access site cross-over in females compared to males over the age of 60 (3.9% vs. 2.1%, respectively). The study may not have had sufficient power to detect differences in cross-over rates between these groups.

The limitation of this analysis is the lack of femoral control group and observational nature of the study. However, a randomized trial has been conducted (n = 377) in patients over the age of 80 comparing radial vs. femoral access which showed a reduction in vascular complication (1.6% vs. 6.5%; P = 0.03). The fluoroscopy time was longer with radial access (6 ± 4.4 minutes vs. 4.5 ± 3.7 minutes). The angiographic procedural success rates were similar.⁷

The current evidence suggests that in the elderly, radial compared to femoral access prevent major vascular complications with similar PCI success rates despite the technical challenges in this population. In operators with expertise, we advocate that the radial approach should be the default approach in the elderly population.

CONFLICT OF INTEREST

Sanjit S. Jolly has received speaker/consulting honoraria from Sanofi Aventis, GlaxoSmithkline, and Boehringer Ingelheim, and grant support from Medtronic. Victor Hsieh has no conflict of interest to declare.

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