

Letters

TO THE EDITOR

Transradial PCI in Women: Zeroing in on Crossovers



We congratulate Rao et al. (1) for a comprehensive study, related to a much needed grey area in the management of cardiovascular disease in an overtly underrepresented cohort.

The authors have identified radial artery spasm (RAS) as the major reason for conversion of radial to femoral access in women (crossovers [COs]), which is a well-recognized and inevitable complication of transradial interventions (TRIs) (RIVAL [Radial versus Femoral Access for Coronary Intervention] trial). Smaller radial artery diameter (in women) has been postulated (2) and discussed by Rao et al. (1) as a possible cause for RAS and higher COs encountered in the SAFE PCI for Women (Study of Access Site for Enhancement of PCI for Women) trial.

However, the authors have not mentioned the size of sheaths and catheters used for their procedures, which may help clarify the presence or absence of possible confounding arterial/sheath size mismatch as the culprit for high rates of RAS, commonly encountered in small access arteries (AA).

We recently established (3) that attempting TRI in 1.4-mm arteries has a high rate of puncture failure (PF), AA spasm, COs, and high post-procedure radial artery occlusion (RAO) rates. Additionally, “small arteries,”—the precise diameter of which still remains undefined in published scientific reports, and the measurement of which pre-procedurally is usually considered unnecessary, but broadly defined by us as any AA <1.7 mm in internal diameter on pre-procedure ultrasound (PPU)—have been shown to be associated with higher COs, PFs, and AA occlusion (2–4).

Until the availability of improvised hydrophilic-coated catheters and extremely slender 3-F to 4-F technology, RAS that correlates well with short stature, low body mass index and female sex (5) will remain a limitation for TRIs in small-caliber arteries compared with access through “adequately sized arteries” (arbitrarily defined by us as any artery with internal diameter ≥ 1.7 mm on PPU) (2–4).

These preliminary data clearly support the need for triaging patients pre-operatively on the basis of

their arterial dimensions, and for pre-selecting the biggest and straightest AA, which could be either the radial, or failing that, the ulnar or femoral artery. This may in turn reduce high rates of PFs/COs that are due to RAS, such as encountered in the SAFE PCI trial, as was seen in our study (3). It is also mentionable that the crossover rates and numbers in the study were from centers and operators that were experienced in the radial approach (suggesting room for further learning in even the most experienced operators).

We have shown (2–4) that women more commonly only have a single adequate forearm artery of the 4 available forearm arteries as compared with men (26.7% women [n = 264] vs. 11.6% men [n = 846] [p < 0.001]), who more commonly have multiple adequately sized AAs. Hence, the greater need for pre-selecting adequate AAs in women.

Additionally, the use of a novel “compression of the other artery (COOA) technique” (radial for ulnar artery access and vice versa) helped increase the AA diameter, via collateral palmar arch flow, before puncturing them, thus aiding in reducing puncture failures in small (<1.7 mm) AAs, although this needs further evaluation in a randomized setting (2).

Clearly, there is still hope for improving transradial access even in women.

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