



## Mr. Left Main and Mrs. Radial: A Happy Couple?



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Despite the conflicting and highly debated results of 2 major clinical trials, NOBLE and EXCEL [1,2], stenting of unprotected left main stenosis is on the rise around the world thanks to advances in percutaneous coronary intervention (PCI), and better imaging and adjunctive techniques.

Since Kiemeneij and Laarman [3] first demonstrated that transradial PCI is possible and safe, radial artery access is becoming the first approach for almost every kind of intervention in both the coronary and peripheral fields. Transradial PCI has been postulated to have several advantages, including a reduction in access-site bleeding, early ambulation, and mortality in ST-elevation myocardial infarction patients. Over the past decade, despite the increased use of transradial PCI, very few clinical studies have assessed the impact, or benefit, of transradial PCI compared with transfemoral PCI for unprotected left main stenosis on clinical outcomes [4,5].

In this issue of *Cardiovascular Revascularization Medicine*, Bajaj et al. [6] present a systematic review and meta-analysis of transradial vs. transfemoral unprotected left main PCI. This meta-analysis included 8 non-randomized studies of 2858 patients from around the world with in-hospital outcomes reported. Procedural success was similar in both groups of patients (97.7% for transradial access [TRA] vs. 97% for transfemoral access [TFA]). The TRA group had lower rates of access-site complications, major bleeding, all-cause mortality and contrast agent volume. There was no difference in major adverse cardiovascular events (MACE), cardiovascular mortality, myocardial infarction, and long-term outcomes between the 2 groups. However, reducing the heterogeneity between the groups by removal of one study

showed that MACE rates are lower in the TRA group (OR 0.26 [CI 0.11, 0.66],  $I^2 = 21\%$ ). Contrary to other studies, fluoroscopy time and total procedure time did not differ between the 2 groups.

There are limitations of this meta-analysis, particularly its lack of randomized studies and non-uniform definition of MACE and major bleeding amongst the studies. There is a large discrepancy of reduction in MACE, bleeding and mortality when all the 8 studies are included vs. not to eliminate heterogeneity. Furthermore, the number of patients is less than 500 in both the groups when access-site complications were lower in the TRA group. The mean duration of studies was variable as well.

Despite these limitations, the results of the systematic review and meta-analysis by Bajaj et al. bring forward that TRA PCI of the left main is safe, feasible, and associated with similar outcomes.

It is always like that, or are there any clinical situations in which the femoral approach may or should be selected first? Radial The Radial artery usually can easily accommodate a Slender 7 F or even, a Slender 8F sheath even in small ladies; thus, someone can argue that there is no need anymore for femoral access [7]. However, sometimes, tortuosity, calcification, or even unexpected disease [8] may cause procedural delays and reduce the stability of the guiding catheter with too deep or insufficient intubation of the left main ostium, which is important when treating the ostium. Moreover, the treatment of distal left main bifurcation disease requiring a planned double-stenting approach from the start is sometimes problematic because of the need of a larger sheath, and this may become an issue when using a radial access due to the increased risk of spasm. In such cases a step by step double-stenting technique like Nano crush or the T And small Protrusion may be preferable over double-kissing crush or classical crush, which usually implies simultaneous stenting [9]. Finally, in cardiogenic shock situations in

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which the left main has a good probability to be involved, delay in radial access may delay the time of reperfusion and the chance of survival [10].

As a result, for someone not proficient in radial access or unprotected left main PCI, it would be a double jeopardy to embark on this approach. Hence, transradial training has to start early, with gradual progression to complex PCI, during fellowship training. At the same time, we should teach our fellows how to perform safe femoral access simply because sometimes, you may still need it and it is intelligent to do.

In conclusion, this study brings to our attention that there is a need for a large, randomized, multicenter (including the United States of America) trial evaluating transradial vs. transfemoral PCI of the unprotected left main.

Yes, Mr. Left Main and Mrs. Radial are a very nice and apparently compatible couple but, as married men and women we know, we have to overcome our shortcomings to be a happy and successful couple.

### Declaration of Competing Interest

The authors have no conflict of interest to declare.

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