Nature Reviews Cardiology **9**, 66 (2012); published online 10 January 2012; doi:10.1038/nrcardio.2011.210

INTERVENTIONAL CARDIOLOGY

Transradial access less risky than transfemoral access in PCI

Patients with ST-segment elevation myocardial infarction (STEMI) who undergo percutaneous coronary intervention (PCI) are at high risk of bleeding complications and, therefore, of other adverse events, such as death, reinfarction, and stroke. Authors of a new meta-analysis assessing the impact of access site on patient outcomes have shown reduced adverse events when radial access is used for STEMI PCI.

Although a previous meta-analysis suggested that radial access is associated with various benefits, Mamas *et al.* felt that "many of the enrolled studies had a suboptimal (and often nonrandomized) design." Because of this, and because "recent publication of the RIVAL study has provided substantial new data," they performed a new meta-analysis "to better define best practice in this high-risk group".

Data from nine published, randomized, controlled studies that compared the outcomes for 2,977 patients with STEMI who had undergone PCI via a radial or femoral access site were incorporated into the analysis. RIVAL was the largest of the included trials, with 1,958 individuals (that is, 66% of all included patients); the other eight studies each involved between 50 and 200 patients.

Access-site complications were 70% less likely in the radial-access group than in the femoral-access group (OR 0.30; 95% CI 0.19–0.48; $P<0.0001$). In line with this finding, major bleeding events (1.2% vs 2.3%; OR 0.55; 95% CI 0.31–0.99; $P=0.049$), major adverse cardiac events (3.2% vs 5.1%; OR 0.62; 95% CI 0.43–0.90; $P=0.012$), and mortality (1.9% vs 3.6%; OR 0.52; 95% CI 0.33–0.83; $P=0.006$) were all significantly lower with transradial PCI. No heterogeneity was found between the included studies.

The authors point out that "adoption of the transradial route would only be expected to reduce bleeding complications from the access site," and highlight that, "risk of major bleeding, even if performed through the transradial route, ... still remained significant."

Mamas *et al.* thus conclude that "PCI patients will benefit from the adoption of safest access-site practice (use of the transradial approach) in combination with an antithrombotic regimen optimized to preserve anti-ischemic efficacy but minimize systemic bleeding." They caution, however, that an urgent need exists for a single adequately powered, randomized, controlled study, and that (in the meantime) "the radial approach is associated with an important learning curve. Before embarking on a transradial STEMI program, operators and institutions must develop their skills in less-challenging patient populations."

Bryony M. Mearns

Original article Mamas, M. A. *et al*. Influence of access site selection on PCI-related adverse events in patients with STEMI: meta-analysis of randomised controlled trials. *Heart* doi:10.1136/heartjnl-2011-300558