



Lecture Notes

American College of Cardiology 60th Annual Scientific Session & i2 Summit

RIVAL Trial: A Randomized Comparison of Radial vs. Femoral Access for Coronary Angiography or Intervention in Patients with ACS

Sponsor: Population Health Research Institute

Clinical Trial #: NCT01014273

Background

Small trials have suggested that radial access for percutaneous coronary intervention (PCI) reduces vascular complications and bleeding compared with femoral access. The aim of this trial was to assess whether radial access was superior to femoral access in patients with acute coronary syndromes (ACS) who were undergoing coronary angiography with possible intervention.

Methods

- Randomized, parallel group, multicenter trial
- n= 7021

Primary outcome

- A composite of death, myocardial infarction, stroke, or non-coronary artery bypass graft (non-CABG)-related major bleeding at 30 days

Secondary Outcomes

- Death, myocardial infarction, or stroke; and non-CABG-related major bleeding at 30 days

Results

- 3507 patients were randomly assigned to radial access and 3514 to femoral access
- The primary outcome occurred in 128 (3.7%) of 3507 patients in the radial access group compared with 139 (4.0%) of 3514 in the femoral access group (HR, 0.92; 95% CI, 0.72 to 1.17; p=0.50)
- Rate of death, myocardial infarction, or stroke at 30 days was 112 (3.2%) of 3507 patients in the radial access group compared with 114 (3.2%) of 3514 in the femoral access group (HR, 0.98; 95% CI, 0.76 to 1.28; p=0.90)
- The rate of non-CABG-related major bleeding at 30 days was 24 (0.7%) of 3507 patients in the radial access group compared with 33 (0.9%) of 3514 patients in the femoral access group (HR, 0.73; 95% CI, 0.43 to 1.23; p=0.23)



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- At 30 days, 42 of 3507 patients in the radial access group had large hematomas compared with 106 of 3514 in the femoral access group (HR, 0.40; 95% CI, 0.28 to 0.57; $p < 0.0001$)
- Pseudoaneurysm requiring closure occurred in 7 of 3507 patients in the radial access group compared with 23 of 3514 in the femoral access group (HR, 0.30; 95% CI, 0.13 to 0.71; $p = 0.006$)

Conclusions

Both radial and femoral approaches are safe and effective for PCI. However, the lower rate of local vascular complications may provide justification for employing the radial access approach.

Further Reading

Jolly SS et al. *Lancet* 2011.