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Radial, femoral access for PCI found equal in terms of survival

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Doctors can use either an artery in the arm (the radial approach) or in the groin (the femoral approach) to safely perform percutaneous coronary intervention (PCI) on patients presenting with a heart attack, according to research presented at the American College of Cardiology's 68th Annual Scientific Session. The research, which was stopped early, suggests the radial and femoral approach are equivalent in terms of the risk of death at 30 days.

"Based on these findings, we feel you can achieve similar results with either approach if you have an efficient system for getting patients into the procedure quickly and a good team to perform it," said Michel Le May, MD, director of the STEMI program at the University of Ottawa Heart Institute and the study's lead author. "Furthermore, we believe it is important for interventionists to be familiar with both radial and femoral access in order to be able to shift gears from one strategy to the other without hesitation."

Le May said that while some operators may have a preference for the radial or the femoral approach, it can become necessary to switch approaches for certain patients, sometimes in the middle of a procedure. For this reason, it is valuable for operators to routinely practice both methods.

"I think it will be important for medical training programs to emphasize the need to be proficient at both the radial and femoral access," Le May said. "It is possible to become deskilled at doing one of the procedures,

and a consistent emphasis on one approach over the other can lead to an increase in complications."

PCI is performed to clear blocked arteries responsible for a heart attack. During the procedure, a doctor threads a narrow tube through the artery until it reaches the heart. The operator then uses the tube to manipulate small surgical tools and insert a stent to prop open the artery, thereby restoring blood flow.

When PCI was first developed, doctors accessed the heart using the femoral approach. With the advent of smaller surgical equipment, it became feasible to use smaller-diameter arteries, leading some doctors to use the radial approach instead. Previous trials have suggested the radial approach may reduce the risk of bleeding and improve survival. However, no large, randomized trial has provided definitive evidence on which approach is superior in terms of survival in patients presenting with an acute heart attack.

This study, which sought to fill that void, aimed to enroll nearly 5,000 patients at five medical centers across Canada but stopped after enrolling 2,2929. All patients underwent PCI after ST-elevation myocardial infarction (STEMI), the most severe type of heart attack. Half were randomly assigned to radial access and half to femoral access. Most of the patients received bivalirudin and ticagrelor, medications commonly used to prevent blood clots during and after PCI, respectively.

The study was stopped early after an analysis indicated it would not be possible to reach the primary endpoint, an expected 1.5 percent difference in mortality at 30 days, as survival rates between the radial and femoral approaches were roughly equal (1.5 percent in the radial access group and 1.3 percent in the femoral access group, an absolute difference of 0.2 percent). Rates of other outcomes including subsequent heart attack, blood clotting at the stent and bleeding complications were

not significantly different between the two groups either.

One unique aspect of the design of this study was the inclusion of a homogenous population of STEMI patients, according to researchers. It is possible that patients without STEMI, or certain STEMI patient subgroups, may see different benefits from the two approaches. The trial also used updated procedure protocols in terms of medications and surgical equipment compared to previous trials.

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