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Heart Catheterisation: Arm Is Safer Access Point

A new study shows that patients with acute coronary syndrome undergoing coronary angiogram, a procedure used to assess blockages in the heart's arteries, had a significantly lower risk of major bleeding and death if their interventional cardiologist accessed the heart through an artery in the arm rather than the groin.

Researchers said the results, presented at the American College of Cardiology's 64th Annual Scientific Session, should prompt a re-evaluation of clinical guidelines and that the arm, currently used in a minority of cases in the United States, should be the preferred approach for most catheter-based heart procedures.

The study did not show a significant reduction in one of its two primary endpoints, a composite rate of death, heart attack or stroke 30 days after a catheterisation procedure. However, the second primary endpoint, which included those events plus major bleeding, showed a significant reduced risk in patients receiving a catheter via the arm (known as the radial approach) rather than the groin (the femoral approach).

The study, called the Minimising Adverse Haemorrhagic Events by Transradial Access Site and Systemic Implementation of AngioX Programme (MATRIX), randomised more than 8,400 angiogram patients at 78 hospitals in four European countries to receive angiogram via the arm or the groin. All patients had acute coronary syndrome, a condition that includes the two types of heart attack: ST-elevation myocardial infarction and non-ST elevation myocardial infarction, or unstable angina (a type of severe chest pain that is due to the buildup of plaque in the heart's arteries). Key findings of the study include:

- Overall, 9.8 percent of patients receiving radial access suffered major bleeding, death, heart attack or stroke within 30 days (vs. 11.7 percent in those receiving femoral access).
- Major bleeding occurred in 1.6 percent of patients receiving radial access and 2.3 percent of patients receiving femoral access.
- Death occurred in 1.6 percent of patients receiving radial access and 2.2 percent of patients receiving femoral access.

The researchers attributed the fact that the study did not meet its other co-primary endpoint to a higher-than-usual bar for statistical significance, a result of the inclusion of two co-primary endpoints in the study rather than only one. The study found no differences with respect to rates of heart attack or stroke.

"I believe the evidence from our study should compel a switch to the radial approach as the preferred method," said lead author Marco Valgimigli, MD, PhD, associate professor of cardiology and senior interventional cardiologist at the Erasmus University Medical Center in the Netherlands. "I hope that a new generation of interventional cardiologists will be specifically trained in the radial approach and that more medical centres will build up their expertise in this procedure."

MATRIX is the first large trial to show radial access improves patient outcomes and that it reduces dangerous bleeding beyond the bleeding that can occur near where the catheter is inserted. U.S. interventional cardiologists currently use the arm for catheter-based heart procedures in less than 15 percent of cases, while their counterparts in Europe use the radial approach in nearly 50 percent of cases.

Interventional cardiologists have typically favoured catheter access through the groin because it involves a larger artery that is less prone to spasm, an event that can limit the ability to move medical equipment through the catheter. Although the artery in the arm is closer to the surface and thus easier to access, the artery's smaller size makes the radial approach more technically difficult and requires the use of smaller equipment.

Source: American College of Cardiology
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