

Management of Patients Undergoing Percutaneous Coronary Interventions

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The full report is titled "Management of Patients Undergoing Percutaneous Coronary Revascularization." It is in the 15 July 2003 issue of *Annals of Internal Medicine* (volume 139, pages 123-136). The authors are G.N. Levine, M.J. Kern, P.B. Berger, D.L. Brown, L.W. Klein, D.J. Kereiakes, T.A. Sanborn, and A.K. Jacobs, for the American Heart Association Diagnostic and Interventional Catheterization Committee and Council on Clinical Cardiology.

What is the problem and what is known about it so far?

In coronary artery disease, blockages in the blood vessels that supply the heart (coronary arteries) lead to angina (chest pain) or heart attacks (death of heart muscle). Treatments for coronary artery disease include medication, heart surgery, and percutaneous coronary interventions (PCIs). PCIs are procedures that use small inflatable balloons and other devices to open blocked blood vessels. Doctors insert these balloons and other devices through the skin in the groin area and thread them up through blood vessels into the coronary arteries. Doctors then use small balloons, expandable metal cylinders called stents (which are mounted on expandable balloons), or other devices to open blockages. PCIs are easier on patients than heart surgery, and they are effective for many but not all patients. The American Heart Association formed a committee to research issues related to PCIs and educate nonspecialist physicians about them. While specialists (interventional cardiologists) perform PCIs, other types of physicians are often involved in caring for patients before and after the procedure.

Why did the authors do this review?

To educate physicians about the prevention, diagnosis, and treatment of complications related to PCIs.

How did the authors do this review?

The authors reviewed published studies about PCIs and recommendations from the American College of Cardiology, American Heart Association, and Society for Cardiac Angiography and Interventions.

What did the authors find?

Before PCI, patients with allergies to contrast dye (the solution injected into the blood vessels so that blockages show up on x-ray) should receive medications (prednisone [steroids] and diphenhydramine [Benadryl, Pfizer, New York, New York]) to prevent allergic reactions. Patients need plenty of fluid before and after PCI to decrease the chances that the dye will damage the kidneys. During the procedure, blood clots can form at the site of the blockage that is being treated. Aspirin and other medications that make the platelets in the body less "sticky" help to decrease this complication. Doctors should use symptoms, electrocardiography (ECG), and blood tests to monitor patients for signs of complications during the procedure. They should also be alert for signs of internal bleeding, which can include a drop in blood count or blood pressure or pain in the groin, flank, abdomen, or back. Tenderness or a lump in the groin, or an abnormal sound heard through a stethoscope placed over the groin, may indicate that the small puncture in the artery in the groin made during the PCI procedure has not healed properly (pseudoaneurysm or arteriovenous fistula). About 5 to 10 of every 100 patients who undergo PCI will show some sign of heart damage if this is carefully screened for. However, most of the time, this heart damage is very small, and patients experience no symptoms. Less common complications of PCI include stroke and the need for emergency surgery. Fewer than 1 out of every 100 patients who have PCI die as a result of a PCI complication. After the procedure, physicians should prescribe drugs (aspirin and clopidogrel [Plavix, Bristol-Myers Products, New York, New York]) to prevent a blood clot from forming at the site in the heart where the coronary stent was placed.

What are the implications of this review?

Doctors should inform patients of the risks of PCI and provide care aimed at decreasing the risk for complications and providing early treatment of complications.

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