

Study suggests coronary stents not harmful to patients with history of metal allergy

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Cardiologists have long grappled with how to best manage patients with coronary artery disease who report skin hypersensitivity to nickel or other metal components found in stents -- small tubes placed in narrowed or weakened arteries to help improve blood flow to the heart. But new Mayo Clinic research, published in the April 16, 2012, issue of *Circulation: Cardiovascular Interventions*, may help allay these concerns.

"Most interventional cardiologists will, at some stage, have to decide whether to place a [coronary stent](#) in a patient with a history of skin allergy to one of the [metal components](#), most commonly nickel. Our study found no evidence of an increased risk of heart attack, death or restenosis, which is a recurrent narrowing within a stent, in patients who reported themselves to be allergic to metal prior to implantation," says Rajiv Gulati, M.D., Ph.D., an interventional cardiologist at Mayo Clinic in Rochester, Minn. "These findings should provide some reassurance to clinicians and patients who are faced with this clinical issue, especially as there has been scarce and conflicting information in the literature."

Researchers at Mayo Clinic conducted a retrospective evaluation of early and long-term clinical outcomes in 29 patients with a history of metal allergy who subsequently underwent coronary [stent implantation](#), and compared them with a closely matched control group of 250 nonallergic patients. Data revealed no significant differences in the rates of heart attack, death at 30 days and four years, or repeat revascularization of the originally treated coronary artery between these groups.

The research team also looked at markers of an [allergic response](#) before and after stent placement, and found that white blood cell, eosinophil and lymphocyte counts did not change after the stents were placed. This lends weight to the idea that there is no worrisome systemic [immune reaction](#) in

those with a history of skin allergy to metal components.

While previous studies have examined metal allergy and stent placement, this earlier research primarily focused on the risk of [restenosis](#). These studies had some limitations in design and yielded conflicting results, according to Dr. Gulati.

Coronary stents used in the United States since 1997 have been constructed using 316L stainless steel, cobalt-chromium alloy, or platinum-chromium alloy platforms. In varying amounts, all stents contain nickel (10 percent to 35 percent) and chromium as chromate (18 percent to 20 percent).

Nickel allergy is one of the most common causes of allergic contact dermatitis and is thought to affect about 8 percent of the population. Nickel allergy is more common in women and is often triggered by exposure to earrings and other nickel-containing jewelry or body piercings. Patients with known or suspected [skin allergy](#) usually report a skin rash, itching, redness or dry patches within 12 to 48 hours after initial contact with the metal. In this study, hypersensitivity to nickel was reported in 26 of 29 cases and to chromium in nine of 29 cases. Patch testing performed in 11 of 29 patients was positive in all; the remaining patients were presumed to have allergies by history alone. Still, it is unknown how many patients with [coronary artery disease](#) might be affected. "We do not routinely test for nickel allergy, so we don't know how many people coming to the cath lab have this problem," Dr. Gulati adds. "Still, our findings would suggest that the mechanism of skin reaction to metal exposure might differ from that within the arterial wall."

Currently, product labeling for stents marketed in the U.S. must include warnings about potential contraindications in people with metal allergies. However, Dr. Gulati says that while there is not much data to support these warnings, caution is still

advised and further research is needed.

Provided by Mayo Clinic

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