

# Blood transfusion for PCI associated with increased risk of cardiac event

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In an analysis that included more than two million patients who underwent a percutaneous coronary intervention (PCI; procedures such as balloon angioplasty or stent placement used to open narrowed coronary arteries), there was considerable variation in red blood cell transfusion practices among hospitals across the U.S., and receiving a transfusion was associated with an increased risk of in-hospital heart attack, stroke or death, according to a study in the February 26 issue of *JAMA*.

Red blood cell transfusion among patients with coronary artery disease is controversial. A growing body of evidence suggests that transfusion in the setting of [acute coronary syndromes](#) (ACS; such as [heart attack](#) or unstable angina) and in hospitalized patients with a history of coronary artery disease may be associated with an increase in risk of heart attack and death. Current guideline statements are cautious about recommending transfusion in hospitalized patients with a history of [coronary artery disease](#) and make no recommendation on transfusion in the setting of ACS, citing an absence of definitive evidence, according to background information in the article.

Matthew W. Sherwood, M.D, of Duke Clinical Research Institute, Durham, N.C., and colleagues examined transfusion practice patterns and outcomes in a population representative of patients undergoing PCI across the United States with data from a registry on patient visits (n = 2,258,711) from July 2009 to March 2013 for PCI at 1,431 hospitals.

Overall rate, 2.1 percent of patients undergoing PCI had a transfusion. The researchers found a broad variation in patterns of transfusion across hospitals. Overall, 96.3 percent of sites gave a transfusion to less than 5 percent of patients and 3.7 percent of sites gave a transfusion to 5 percent of patients or more.

Compared to no transfusion, receiving a transfusion was associated with a greater risk of heart attack (4.5 percent vs 1.8 percent), stroke (2.0 percent vs 0.2 percent), and in-hospital death (12.5 percent vs 1.2 percent), irrespective of bleeding complications.

Patients more likely to receive a transfusion were older, were women, and were more likely to have hypertension, diabetes, advanced renal dysfunction, and prior heart attack or heart failure.

The authors speculate that the variation seen in transfusion practice patterns in this study may be related to several factors, including previously held beliefs about the benefit of transfusion and recently published data indicating the lack of benefit and potential hazard associated with transfusion.

"These data highlight the need for randomized trials of transfusion strategies to guide practice in patients undergoing PCI. Until these trials have been completed, operators should use strategies that reduce the risk of bleeding and [need for] [transfusion](#)."

**More information:** *JAMA* [DOI: 10.1001/jama.2014.980](https://doi.org/10.1001/jama.2014.980)

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