

# The risk factors for deep and superficial chest surgical-site infections after coronary artery bypass graft surgery are different

Margaret A. Olsen, MPH, PhD, Patricia Lock-Buckley, Diane Hopkins, RN, BSN, CIC, Louis B. Polish, MD, Thoralf M. Sundt, MD\*, Victoria J. Fraser, MD

From the Division of Infectious Diseases and Department of Surgery, Washington University School of Medicine, and the Department of Infection Control, Barnes-Jewish Hospital, St Louis, Mo.

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**Objective:** We sought to determine risk factors for deep and superficial chest wound infections after coronary artery bypass graft surgery to develop predictive models.

**Methods:** We retrospectively analyzed data collected on 1980 consecutive patients undergoing coronary artery bypass surgery at our institution between January 1, 1996, and June 30, 1999, by using the Society of Thoracic Surgery database. Independent risk factors for surgical-site infection were identified with multivariate logistic regression.

**Results:** There were 37 (1.9%) deep chest and 46 (2.3%) superficial chest surgical-site infections. Obese diabetic patients had a 7.7-fold increased risk of deep chest infections after controlling for intra-aortic balloon pump use (odds ratio, 3.1) and postoperative transfusion (odds ratio, 2.3). Independent risk factors for superficial surgical-site infections included obesity (odds ratio, 3.1), diabetes in persons 65 years of age or older (odds ratio, 2.7), and current smoking (odds ratio, 2.5). Use of antiplatelet drugs was associated with a lower risk of superficial infections (odds ratio, 0.4). Predicted operative mortality as a marker of severity of illness was not clearly predictive of deep or superficial surgical-site infection. Mortality in the year after the operation was increased in patients with deep chest infections compared with that seen in uninfected control subjects (8/37 [21.6%] vs 114/1612 [7.1%],  $P = .004$ ) but not in patients with superficial chest infections (7/47 [15.2%] vs 114/1612 [7.1%],  $P = .075$ ).

**Conclusions:** Risk factors for deep and superficial chest surgical-site infections after coronary artery bypass surgery differ, suggesting different mechanisms of pathogenesis. Appropriate risk stratification models specific to these important outcomes must be developed.