Fibrin glue in coronary artery bypass grafting operations: casting out the Devil with Beelzebub?.

Authors: Lamm P, Adelhard K, Juchem G, Weitkunat R, Milz S, Kilger E, Gotz A, Reichart B

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Abstract:

OBJECTIVE: Fibrin sealants are frequently used in aortocoronary bypass operations. Although they are considered to be clinically safe, we performed a retrospective analysis of our data to examine the possible side effects of Tissucol fibrin sealant, namely the acute thrombosis of grafts and native coronary arteries resulting in severe myocardial damage and patient deaths.

METHODS: The data of 2716 patients (2001 male, 715 female) who received an aortocoronary bypass operation from November 1995 to December 1999 were studied retrospectively. Two groups (group 1: received Tissucol, group 2: no sealant used) were compared with respect to an a priori selected set of demographic and clinical variables and with respect to their effect on the outcome using bivariate tabulation. Multiple exploratory assessments of factors possibly related to fatal outcome were done by multiple logistic regression.

RESULTS: Nine hundred ninety patients (group 1) received Tissucol, 1726 patients (group 2) did not receive it. Mean patient age was 64+/-9.1 years. Group 1 had a higher risk of death (7.8% vs 2.8%, $p<0.001$). The peak values of creatine kinase >500 and creatine kinase-myocardial band >50 were higher in group 1 than in group 2, $p<0.001$. Adjusted odds ratios for the risk of fatal outcome were: 2.01 for the use of Tissucol, 2.71 for patient age >70 years, 2.02 for aortic cross clamp time >90 min, 3.95 for postoperative ventricular fibrillation, 6.35 for postoperative cardiopulmonary resuscitation, 4.55 for postoperative aortocoronary reoperation.

CONCLUSION: In our analysis an increased risk of myocardial injury or even death was found in coronary artery bypass grafting patients when Tissucol fibrin sealant was used intraoperatively.