THE RELATIONSHIP BETWEEN BODY MASS INDEX AND MORTALITY AMONG 60,000 CORONARY ARTERY BYPASS GRAFT PATIENTS; DOES THE OBESITY PARADOX EXIST?

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Background: Obesity is a well known risk factor for coronary artery disease. However, in previous studies of coronary artery bypass graft surgery (CABG), overweight and obese patients (pts) had better early outcomes than pts with normal body mass index (BMI). Using a state wide database, we investigated whether this paradox pertains to long term survival of CABG pts.

Methods: Pts who underwent CABG from 1998 to 2007 were identified using the New Jersey (NJ) Cardiac Surgery database. Mortality was ascertained from NJ death files up to 2009.

Results: Of a total of 60,635 pts, 27.3% were women and 85.2% White. 21.9% had normal BMI, 42.3% were overweight and 35.8% were obese. Average age was 66. Overweight and obese pts were younger, less likely to be women or smokers and to have myocardial infarction, left main disease, heart failure, chronic renal disease, cerebrovascular disease and chronic lung disease. They were more likely to have diabetes and hypertension. Post CABG mortality at 30 days, 90 days and between 90 days and 2 years was higher (p <0.0001 for all) in normal BMI pts than in either the overweight or obese group. Multivariate analyses indicated that mortality among normal BMI pts was significantly higher at 90 days and even more so at 2 years after CABG surgery (see figure).

Conclusion: In this state wide study, the obesity paradox persists up to 2 years after CABG surgery.

![Figure: Post-CABG Mortality Rates by BMI Categories](chart.png)

*Adjusted for year of surgery, age, gender, current smoking status, history of diabetes, chronic renal disease, hypertension, cerebrovascular disease, chronic lung disease, congestive heart failure, myocardial infarction, left main disease, and ejection fraction percent.