



Congenital Heart Disease

EFFECT OF OBESITY AND UNDERWEIGHT STATUS ON PERIOPERATIVE OUTCOMES IN PATIENTS WITH CONGENITAL HEART DISEASE: AN ANALYSIS OF DATA FROM THE SOCIETY OF THORACIC SURGEONS CONGENITAL HEART SURGERY DATABASE

Moderated Poster Contributions

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Authors: *Michael L. O'Byrne, Sunghee Kim, Christoph Hornik, Babatunde Yerokun, Roland Matsouaka, Jeffrey Jacobs, Marshall Jacobs, Richard Jonas, Children's National Medical Center, Washington, DC, USA, Duke University School of Medicine, Durham, NC, USA*

Background: Obesity is increasingly prevalent in the congenital heart disease population. The effect of obesity and body-mass index (BMI) on perioperative outcomes has not been evaluated. We sought to study the association between BMI and perioperative outcomes following congenital heart operations in children and young adults.

Methods: A multicenter retrospective cohort study was performed using data from the Society of Thoracic Surgeons Congenital Heart Surgery Database of children and young adults between 10-35 years undergoing any cardiac operation from 1/2010 to 12/2015. The primary exposure was BMI percentile, adjusted for age and sex. The primary outcomes were operative mortality and composite outcome (operative mortality, major complications, post-operative hospital length of stay >14 days, and wound infection/dehiscence). The association between BMI percentile and primary outcomes was assessed using multivariate mixed effects models adjusting for demographic, preoperative and operative factors including STS-EACTS Mortality Category.

Results: Of 18,337 subjects undergoing index operations at 118 centers, 16% were obese (BMI percentile>95%), 15% overweight (85-95%), 53% normal weight (15-85%), 7% underweight (5-15%), and 9% were severely underweight (5th percentile). The observed risks of operative mortality ($p=0.04$) and composite outcome ($p<0.0001$) were higher in severely underweight and obese subjects than in normal weight subjects. Risk of unplanned cardiac operation and reoperation for bleeding was higher with severely underweight BMI. Risk of wound infection/dehiscence was higher in obese subjects. In multivariate analysis, the association between BMI and operative mortality was not significant. Obese (OR: 1.21, 95% CI: 1.05-1.39), underweight (OR: 1.33, 95% CI: 1.11-1.60), and severely underweight subjects (OR: 1.53, 95% CI: 1.31-1.79) were at increased risk of the composite outcome.

Conclusions: Obese and underweight BMI were associated with increased risk of composite adverse outcome independent of other risk factors. Further research is necessary to determine whether BMI represents a modifiable risk factor for perioperative outcome.