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Response to Letter "Regarding 'Effect of Obesity and Underweight Status on Perioperative Outcomes of Congenital Heart Operations in Children, Adolescents, and Young Adults: An Analysis of Data From the Society of Thoracic Surgeons Database"

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We thank Dr. Galyfos and Filis for their letter regarding our manuscript[1]. We acknowledge the tremendous effort to study the association of body mass index (BMI) and outcomes following surgery in older adults. The population of young patients with congenital heart disease (CHD), while diverse, is distinctly different from older adults with acquired cardiovascular disease. The natural histories of these populations differ considerably, as do the disease processes that affect them. We were motivated to study the association between BMI and perioperative outcome in CHD patients because of these differences and were not surprised that our findings departed from conventional wisdom regarding older patients with acquired heart disease.

While heart defects are the most common congenital defects, they collectively have far lower incidence and prevalence than coronary artery disease. Thanks to the Society for Thoracic Surgeons Congenital Heart Surgeons Database, we were able to perform a multicenter retrospective cohort study encompassing >90% of surgical cases in the United States over the study period, ensuring generalizability. Hierarchical multivariable models were used to evaluate the association of BMI with both mortality and other major perioperative adverse events, adjusting for subject-level covariates. This approach has several advantages over

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comparing the observed rates without statistical adjustment. That being said, evaluation of rare events is challenging and risks type II error, making inferences for individual adverse events problematic. Further research beyond this type of observational study is necessary to not only understand the biological mechanisms of these findings, but also and to determine if interventions targeting BMI affect perioperative risk in this population.

References

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