Correspondence

Letter by Lowenthal et al Regarding Article, “BNP Levels Predict Outcome in Pediatric Heart Failure Patients: Post Hoc Analysis of the Pediatric Carvedilol Trial”

To the Editor:

We read with interest the post hoc analysis of plasma BNP levels and outcomes in pediatric heart failure patients from the Pediatric Carvedilol Trial by Auerbach et al.1 We agree that BNP cutoff values obtained from the adult population, mainly with ischemic heart disease, cannot be used in managing children with structurally abnormal hearts and secondary myocardial dysfunction. Extrapolation from the adult population to the diverse congenital heart defect population, ranging from “simple” ventricular septal defects to univentricular hearts, disregards the complex and heterogeneous physiologies found in these patients. However, we also believe that clustering patients with a biventricular heart and systemic right ventricle together with patients with single-ventricle physiology may result in overestimation of the BNP cutoff and that these groups should be analyzed separately.

In our recently published analysis of BNP levels in 29 young children with single-ventricle physiology, a cutoff value of \( \geq 30 \) pg/mL showed both sensitivity and specificity for heart failure,2 which is significantly lower than the value of 140 pg/mL reported for the heterogeneous population studied by Auerbach et al.1 In our study, a doubling of plasma BNP was associated with an odds ratio for heart failure of 2.17. The area under the receiver operating characteristic curve was 80.3%.2

Both the prospective Pediatric Carvedilol Trial3 and the post hoc analysis reported by Auerbach et al1 are major contributions to the field of pediatric cardiology, bringing evidence-based medicine to the treatment of heart failure in complex pediatric congenital heart disease patients. Consideration of our data2 reinforces the admission by Auerbach et al that their “heterogeneous subject population may have introduced variability in the values of BNP levels that limited the sensitivity and specificity analysis,” as well as their conclusion that further study is needed to validate cutoff values for BNP in specific cohorts.1

Disclosures

None.

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References


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