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Reply to the Editor:

We thank Drs Evora and Rodrigues for their interest in our case report and their comments. The clinical improvement as described in the series by Leyh and associates and the case reports by Grayling, Sparicio, and their colleagues, was not evident in our case. Those authors described dramatic improvements in mean arterial pressure with methylene blue administration to septic shock patients. Their descriptions of MB when used as a “last minute vasoressor.” The evidence for use of MB as anything other than the “last minute vasoressor” in such situations does not exist for children. We, therefore, reiterate the need for clinical trials to answer this question.

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References


Assumed oxygen consumption in the determination of cardiac output in children after cardiac surgery

To the Editor:

We read with interest the article by Fakler and associates titled “Assumed oxygen consumption frequently results in large errors in the determination of cardiac output.” However, we were surprised that our previous article was not cited. We used respiratory mass spectrometry to continuously measure oxygen consumption (V\textsubscript{O\textsubscript{2}}) and compared these direct measurements with estimated V\textsubscript{O\textsubscript{2}} values using 4 equations, including that of Lafarge and Miettinen. We studied ventilated children with congenital heart disease both during cardiopulmonary bypass and in the intensive care unit early after cardiopulmonary bypass surgery. We showed an overestimation of V\textsubscript{O\textsubscript{2}} in children during cardiac catheterization and an underestimation in the postoperative children, with all 4 equations being particularly unreliable in the postoperative group.

As rightly pointed out by Fakler and colleagues, use of assumed V\textsubscript{O\textsubscript{2}} will result in large errors in the calculation of hemodynamic variables, such as cardiac output and systemic and pulmonary vascular resistance. This issue becomes particularly important in patients during the early postoperative period, when V\textsubscript{O\textsubscript{2}} is not only increased as a result of systemic inflammatory response syndrome but is also highly dependent on temperature, the use of inotropes and vasoactive drugs, and ventilatory manipulation. Thus although the conclusions of Fakler and colleagues support our previous observations regarding the use of estimated V\textsubscript{O\textsubscript{2}} during cardiac catheterization, we believe our data suggest the need for even greater caution in the more highly dynamic hemodynamic milieu of the postoperative cardiac intensive care unit.

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