The Baroresponse and Cardiovascular Depression by Halothane in Infants

To the Editor.—Differences in cardiovascular physiology exist between neonatal and adult mammals.\textsuperscript{1} Many of these differences are well-understood, while others require further investigation. The recent article by Wear, Robinson, and Gregory,\textsuperscript{2} reporting their study of the baroresponse of adult and baby rabbits, is an important contribution in this field.

One of the conclusions made by the authors, however, is not supported by their data. They concluded that, because of the marked depression of the baby's baroresponse by halothane, the baby's ability to compensate for hypotension would be limited. The authors studied the animals' heart rate response to hypertension (the depressor baroresponse), not the response to hypotension (the pressor baroresponse). While the two are undoubtedly related, the authors present no evidence to indicate that studying one response enables an investigator to draw conclusions about the other.

Their data do indicate that halothane depresses systolic blood pressure more in baby than in adult rabbits. Similar observations with humans and other mammals have been reported, as have possible contributing factors.\textsuperscript{3-6} An age-related difference in the baroresponse may indeed be an important contributing factor in the infant's cardiovascular depression by halothane. The data from this study, however, only suggest this to be a hypothesis and do not support it as a conclusion.

This point should be clarified, as it detracts from what was obviously a well-designed and executed experiment.

Perhaps Drs. Wear, Robinson, and Gregory will pursue their investigation further and examine age-related differences in halothane's effect on the response to hypotension.

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REFERENCES

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In reply.—Dr. Friesen is correct; we did study the depressor response. We attempted to study the pressor response by administering nitroprusside, but the computer program would not handle the data without considerable revision. Hand calculation of data from a few animals plus the data of Abboud and associates\textsuperscript{1} show that the pressor response is similar to the depressor response but is much flatter. In addition, we recently have shown that there is no change in heart rate in a group of preterm infants anesthetized with halothane who became hypotensive and had systolic blood pressure below 45 mmHg.\textsuperscript{2} Both show that the ability of infants to respond to hypotension is less than their ability to respond to an increase in pressure. Therefore, we believe the statement we made that the baby's ability to compensate for hypotension is true based on the above data.

We appreciate Dr. Friesen's remarks. We agree that more information is required to better define the pressor response in young animals and humans.

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