CORRESPONDENCE

To the Editor—I read with great interest the study by Parlow et al. concerning baroreflex activity in hypertensive patients and the apparently beneficial effect of clonidine in reversing the impaired heart rate control found in these patients.

The authors state in their introduction “By contrast, cardiac baroreflex sensitivity has not previously been studied ... in surgical patients with concomitant hypertension.” This statement comes in the same paragraph as a reference to my first article on studies of anesthesia in relation to hypertension. On page 132 of our article, Table 5 summarizes assessments of baroreflex activity in three groups of patients: 7 normotensive patients, 7 untreated hypertensive patients, and 12 treated hypertensive patients. All were studied awake before anesthesia and during stable anesthesia before surgery. Our values for baroreflex slope in the awake untreated hypertensive patients (4.1 ms/mmHg, SD 3.0) were very similar to those presented by Parlow et al., and the decreased values during anesthesia in our patients (0.9 ms/mmHg, SD 1.8) were also very similar to the values in Parlow et al.’s placebo group. For various reasons, we were only able to achieve satisfactory baroreflex slopes for six of the patients in the postoperative period and therefore did not include those data in our report. Those six patients had baroreflex slopes that were not significantly different from their preoperative values.

In rereading our report after reading that by Parlow et al., I was struck by a fact that I had not previously given much thought to but that may be very relevant in light of Parlow et al.’s findings. Seven of our 12 treated hypertensive patients were receiving methyldopa (500–1,500 mg total daily dose) either alone or in combination with bethanidine. Methyldopa is metabolized to α-methylnoradrenaline, now known to be a weak(ish) α2-adrenoceptor agonist. Could it be that the relative postoperative cardiovascular stability that we described for our treated hypertensive (as opposed to the untreated hypertensive) patients was the result of residual effects of the methyldopa that they had received up to and including the morning of surgery?

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Baroreflex Activity in Hypertensive Patients

References


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viation reinforcing the slow kinetics of the windkessel, with the cardiac parasympathetic system unable to rapidly buffer these surges. Clonidine patients (fig. 3D in our article) shows little lability in pressure linked to a reduced number or amplitude of bursts of sympathetic activity combined with a large sinus arrhythmia at resting pressures.

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Hemodilution: Fewer Keystrokes, Greater Accuracy

To the Editor.—I found the article by Monk et al.1 a valuable contribution to the transfusion literature, especially because they included timely cost-effectiveness data. I am pleased to see the increasing interest in perioperative acute normovolemic hemodilution, evidenced by recent articles in Anesthesiology1 and elsewhere.2,3 Perioperative acute normovolemic hemodilution can spare many surgical patients exposure to allogeneic blood.4 Articles discussing hemodilution frequently refer to Gross’s formula for estimating allowable blood loss5:

\[
\text{Allowable blood loss} = (\text{Estimated blood volume}) \times \left\{ \frac{\text{Hct}_{\text{start}} - \text{Hct}_{\text{final}}}{\text{Hct}_{\text{average}}} \right\}
\]

This formula was an ingenious approximation to the original formula described in 1974.6 The original theoretical equation, which has been verified in several clinical studies,7–7 involved the solution of a differential equation that resulted in a formula requiring the computation of natural logarithms:

\[
\text{Allowable blood loss} = (\text{Estimated blood volume}) \times [\ln(\text{Hct}_{\text{start}}/\text{Hct}_{\text{final}})]
\]

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In 1974, computing natural logs was inconvenient for the practicing clinician. However, now virtually everyone has access to inexpensive, solar-powered, lightweight, hand-held calculators that easily compute natural logs. Therefore, anyone can use the theoretical formula rather than an approximation. And it actually requires fewer keystrokes to compute a more accurate result.