

dysfunction is the suspected cause and other drugs such as octreotide, clonidine, and loperamide have failed.

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## DDAVP, Thromboelastography, and Uremia

To the Editor:

1-Deamino, 8-D-arginine vasopressin (DDAVP) releases factor VIII:C and von Willebrand factor (vWF) from the endothelium, improving platelet function in uremic patients (1). Evaluation of DDAVP has not been reported with the thromboelastograph (TEG), a viscoelastic measure of whole blood clotting (2).

A 42-yr-old male, after having undergone a renal transplant, presented for open renal biopsy with a blood urea nitrogen of 29 mg/dL and creatinine 2.8 mg/dL. The platelet count was  $99 \times 10^3/\text{mm}^3$ , the bleeding time 13.5 min, with normal prothrombin and partial thromboplastin times and normal hematocrit. DDAVP and fresh frozen plasma administration had been advised because of the uremia and laboratory abnormalities.

After induction of anesthesia with thiopental, fentanyl, rocuronium, and esmolol, ultrasound revealed a dilated ureter causing a 45-min delay for radiology consultation. Anesthesia was maintained with isoflurane (0.5%-0.7%) and  $\text{N}_2\text{O}/\text{O}_2$ . A TEG was performed before and 45 min after DDAVP administration (28  $\mu\text{g}$  intravenously) (Figure 1) during the delay. The post-DDAVP trace showed significant improvement in R time (fibrin formation), K time and alpha angle (fibrinogen-platelet interaction), and maximum amplitude (platelet function) without change in fibrinolysis. A percutaneous nephrostomy was performed without complication.

The TEG changes were compatible with the expected shortened bleeding time and increased vWF levels after DDAVP administration in uremic patients (3) in the absence of surgically induced increases in factor VIII:C and vWF (4). The TEG may be valuable in the perioperative assessment of these patients.

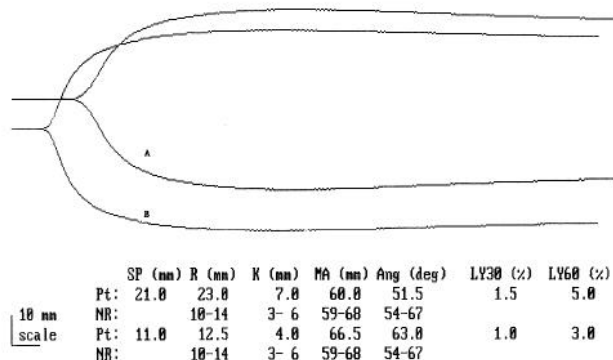


Figure 1. Thromboelastograph traces. A = pre-1-deamino, 8-D-arginine vasopressin (DDAVP). B = post-DDAVP. Measured (Pt) and normal (NR) variables include maximum amplitude (MA), angle in degrees (Ang), and percentage fibrinolysis at 30 and 60 min (LY30 and LY60, respectively).

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## Cost-Benefit Analysis Study Contains Serious Deficiencies

To the Editor:

I agree that cost-benefit analysis studies are necessary; however, it is essential that your readers be informed that some serious deficiencies exist in the study of Woda et al. (1) as it relates to the NAZORCAP™ product. When comparing products that function in similar fashions, those comparisons must be based on features that are as similar as possible. In this respect, the NAZORCAP™ product is distinctly different from the other three products tested. The NAZORCAP™ is the only product capable of sampling gases respired through both the nose and mouth singularly or simultaneously. This permits capnographic data to be obtained regardless of whether nasal or oral breathing is occurring (2).

The investigators incorrectly positioned the stopcock of the NAZORCAP™ to properly evaluate and compare it with the other products. Since they were comparing the quality of capnographic data generated at the nostrils, the stopcock of the NAZORCAP™ should have been set to sample nasal breathing only instead of both the nose and mouth simultaneously as indicated in Table 1 of the article. Not only would this improper setting affect the quality of data generated (Figure 5) by the NAZORCAP™, it would also negatively influence the statistical analysis provided in Figures 2 and 3. Under the circumstances described, the cost-benefit ratio would obviously be negatively impacted as well. Similarly, the cost-benefit analysis is also negatively impacted by the fact that the NAZORCAP™ is available for purchase at about one third of the cost shown in Figure 4.

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In Response:

Mr. Derrick states that both the cost and benefit side of our study is flawed in regard to his NAZORCAP™ sampler. We disagree. First, let us consider the benefit side of the argument. Mr. Derrick, in his advertisement (*Turning Art into Science: NAZORCAP™ Illuminates MAC Capnography*, 1991), promotes his product as being superior to other cannulae in that it can monitor carbon dioxide ( $\text{CO}_2$ ) from the nose or mouth, separately, or from the nose and mouth simultaneously, depending on the position of a stopcock on the device. He emphasizes that, in the simultaneous mode, his device optimizes the accuracy of end-tidal  $\text{CO}_2$  monitoring. Since this is the chief selling point of his device, we chose to test it in the simultaneous mode, as it is packaged. Our data show that, in fact, end-tidal  $\text{CO}_2$  (Figure 2) is not accurately monitored when a subject is receiving supplemental oxygen through the device. The device exhibits an oxygen flow-dependent relationship with end-tidal  $\text{CO}_2$ . Furthermore, the  $\text{CO}_2$  waveform, another important respiratory feature, monitored from