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## Taking it to the bar: Medicolegal ramifications of perioperative steroid coverage

**I**N A 1-MINUTE CONSULT in this issue (page 9), Dr. Marianne Shaw summarizes the limited data on the use of “stress doses” of corticosteroids in patients with a history of steroid use who are about to undergo surgery.

Many patients on long-term corticosteroid therapy have a diminished adrenal reserve, characterized by a submaximal response to adrenocorticotrophic hormone (ACTH). The ACTH stimulation test can be cumbersome to perform in the outpatient or emergency setting, so internists, surgeons, and anesthesiologists often give stress doses of steroids to patients who have taken 10 mg or more of a corticosteroid for more than 1 week during the past year.

The evidence to support this usual and customary practice is anecdotal, and the few reports of adverse surgical outcomes in patients who had not received supplemental corticosteroids preoperatively failed to make a clear association between diminished adrenal reserve and adverse outcome. Additionally, a few small outcome studies showed *no* adverse outcome in patients who received either their baseline corticosteroid dose or no corticosteroids perioperatively. And to make clinical matters more complicated, some physicians taper the stress dose of hydrocortisone over several days after surgery, a practice that carries the risk of induced hyperglycemia and antipyretic effects, as well as diagnostic confusion in the evaluation of potentially steroid-induced postoperative leukocytosis.

Dr. Shaw and others propose giving hydrocortisone at the time of induction of anesthesia, with an immediate return to baseline dosing after surgery, as long as features suggestive of adrenal insufficiency do not arise: eg, volume-resistant unexplained hypotension, hypo-

glycemia, unexplained hyponatremia, or hyperkalemia. Is this simply defensive medicine? In part, yes, but it is also a reasonable, middle-of-the-road approach: it is not likely to cause complications and has the potential to benefit the rare patient with true adrenal insufficiency.

The truth is that most patients do fine with or without stress doses. Yet this practice raises questions about the medicolegal interface between what is usual and customary and what is evidence-based. Will a jury side with the expert witness who cites published evidence? Or will it side with the gray-haired expert witness who says that the usual and customary practice is to use stress doses because “you just can’t predict” the outcome?

### ■ EVIDENCE-BASED PRACTICE: LEGAL PERSPECTIVES CHANGING

In most jurisdictions, physicians are held to the standard of a reasonably prudent physician, of ordinary skill, care, and diligence, practicing under similar conditions.<sup>1</sup> They are to do those things that such a physician would do, and to refrain from doing those things that such a physician would not do.<sup>2</sup>

Following “usual and customary” medical practice would, therefore, seem to be defensible, if not defensive, medicine. But that is not to say that physicians who eschew traditional medical practices in favor of evidence-based practice will be at a disadvantage in a court of law. Quite the contrary is to be expected.

In federal courts<sup>3</sup> and an increasing number of state courts,<sup>4</sup> judges look for and favor the testimony of medical experts and other scientific and technical witnesses based on:

- Sufficient facts and data
- Theories that have been reliably tested

Expert testimony should be backed by medical peer review



- Conclusions that have been subjected to a rigorous peer review and publication process.

In more and more courts, judges are asked to exclude expert evidence that is nothing more than the unsupported personal opinions and preferences of a witness hired to testify for one side or the other. Therefore, a physician called on to defend his or her treatment decisions is better off citing treatises, not tradition, and journal articles, not anecdotes.

Comfortable, tried-and-true medical practices may not stand up to a judge's legal scrutiny any better than they do to rigorous medical scrutiny. And when defending the correctness of care to the ladies and gentlemen of the jury, who are, after all, patients themselves from time to time, a physician and his or her counsel ought not to feel hesitant about explaining the choice of practicing a progressive, evidence-based form of medicine. Just as patients come to expect advanced medical care from doctors in the treatment room, so too should juries expect—and accept—that same offering from doctors in the courtroom.

#### Recent courtroom examples

Here are two sample cases of “experts” who have tried to support a claim of medical malpractice by offering what amounted to a personal, biased opinion without any legitimate scientific support from the medical literature, research, or their own personal experience.

**Case 1.** In a wrongful death case involving a young man who contracted bacterial meningitis, the patient's family sued the emergency room staff of a hospital for alleged failure to institute antibiotics in a timely fashion, and for mismanaging the patient's airway. The expert tried to convince the jury that a different course of treatment would have assured the patient of a full recovery. However, the “expert” was a young emergency medicine physician, less than 3 years out of residency, who had never participated in any type of research or study assessing the treatment or prognosis of bacterial meningitis in patients. His “causation” opinions, suggesting that earlier treatment would have probably made a difference to the patient's outcome, had never been tested in a research or clinical study; had never been published or subjected to peer review; were unsupported by other medical lit-

erature and studies; and were based on a manner of practice that had not gained general acceptance in the medical community.

At trial, the expert was subjected to a harsh cross-examination intended to discredit his qualifications and opinions. The verdict favored the physician defendants.

**Case 2.** Another example of an overeager but underqualified expert occurred in a case of severe viral encephalitis in a 10-year-old boy. At the time of the event (February 1989), the infection was determined to be viral, but the exact cause was unknown. Nevertheless, the plaintiffs argued their theory that, in retrospect, the child had herpes encephalitis. The plaintiffs claimed that the defendants (a hospital neurologist and a pediatric neurologist) were negligent for not giving acyclovir, even prophylactically, as soon as the child came to the emergency room or, at the latest, when he developed slight neck stiffness and a lumbar puncture performed later that day showed an elevated white count. Acyclovir was given on day 2 of the admission, after the child became febrile and went into status epilepticus. However, his neurologic condition worsened, and he ultimately suffered cortical blindness and severe neurologic deterioration.

The family's hired pediatric neurology expert claimed that giving acyclovir earlier would have reversed the child's condition and that he would have recovered completely without neurologic deficit. However, she had no experience in the diagnosis and treatment of viral herpes encephalitis. Further, she had no experience in the use of acyclovir in children at the time of the events of 1989. She had no scientific data or experience to support the assertion that earlier use of acyclovir would have made a difference to the child's course. As in case 1, the verdict was in favor of the defendants.

#### REFERENCES

1. *Bruni v Tatsumi*, 46 OH2d 127, 131–132 (1976).
2. Ohio Jury Instructions 331.02; *Bruni v Tatsumi*, 46 OH2d 127 (1976).
3. *Daubert v Merrell Dow Pharm. Inc.*, 509 US 579 (1993); *Kumho Tire Co V Carmichael*, 526 US 137 (1999).
4. *Miller v Bike Athletic Co.*, 80 OH3d 607 (1998).

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More courts are excluding unsupported personal opinions of hired witnesses