

Anesthesiology
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In reply:—The cylinder valve wrench supplied with the Ohmeda Modulus™ II Anesthesia machine is a ratchet type and is intended to permit easier and more rapid opening of a yoke-mounted cylinder. Although this wrench may be less convenient for “cracking the valve,” the speed and ease of use should be more advantageous than a traditional handle in the event of an emergency, such as the loss of a gas supply from the wall outlet.

The wrench is clearly labeled as to the appropriate side to use. One side states “To Open—This Side Up,” while the reverse side states “To Close—This Side Up.” The wrench is also addressed in the Modulus™ II Operation and Maintenance manual.

Although Ohmeda has had no previous reported incidents involving this wrench, a more conventional cylinder valve wrench has been considered. The major reason for this consideration is that Ohmeda would like to make available a more readily available and economical wrench.

In conclusion, Ohmeda believes this wrench provides considerable advantages and that the labeling contains sufficient information to eliminate potential incidents such as those reported. As with most equipment, user review of the machine, labeling, and manuals may be required to become more familiar and comfortable with the Modulus™ II System and its accompanying components.

For additional information, contact the local Ohmeda representative or contact Ohmeda in Madison, Wisconsin at (608)221-1551.

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Pancuronium and Myocardial Ischemia

To the Editor:—The recent article by Thomson and Putnins¹ clearly demonstrates the different hemodynamic effects of the drug regimens studied. Unfortunately, the authors appear to have omitted the presence of a positive stress test as a criterion for patient selection. Such an error would invalidate the authors' conclusions concerning the statistical significance of the different incidences of ischemia.

Statistical tests are valid only when the populations are similar with respect to the variable being measured. In this study, the occurrence of myocardial ischemia was identified by ST-segment depression in the CS₅ lead; however the authors do not indicate that all subjects possessed a positive stress test. In fact, 20–30% of patients with coronary artery disease may have negative stress tests,² and the results regarding ischemia might be substantially different depending on the distribution of the patients who lack CS₅ abnormalities in response to stress. If only three of the 21 patients in the metocurine and metocurine–pancuronium groups lack positive stress tests, the incidence of ischemia is no longer significant ($P = 0.054$ by Fisher's Exact test); however, other possible distributions retain the statistical significance of the findings. Thus, because the actual distribution of patients

having positive stress tests is not reported, it is presumptuous to report the presence of a statistically significant difference in the incidence of changes in the electrocardiogram. Information regarding the preoperative stress tests of the subjects would be welcome, since it might validate the conclusions presented. Considerable care must be used in the statistical analysis of clinical data, otherwise statistics, a field that is well known to produce headaches, may begin to produce myocardial ischemia as well.

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REFERENCES

1. Thomson IR, Putnins CL: Adverse effects of pancuronium during high-dose fentanyl anesthesia for coronary artery bypass grafting. *ANESTHESIOLOGY* 62:708–713, 1985
2. Parisi AF: The noninvasive evaluation of the coronary artery disease patient. *Circulation* 66:(Suppl 3)66–71, 1982

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In Reply:—We appreciate the opportunity of responding to Dr. Levy's critique of our study design. Briefly, he suggests that the statistical analysis of our ECG data may have been invalidated by our failure to make a positive exercise-ECG response a criterion for admission to our study. His assumption is that patients with negative stress ECGs could not subsequently develop ischemic ST segment depression during anesthesia and surgery. We do not feel that that is a valid assumption. First, the two types of "stress" are not comparable. Secondly, a patient's exercise response may be limited by factors such as fatigue, respiratory disease, claudication, and patient cooperation. These factors are not operative in the anesthetized patient.

Assuming, for purposes of argument, that there were some validity to Dr. Levy's assumption, the process of randomization should have distributed patients with "negative" tests equally among the three treatment groups. Assuming an incidence of negative tests of up to 30% does not alter the significance of our results as long as the patients with negative tests are distributed equally among treatment groups. Only when one assumes, as Dr. Levy has done, that patients with negative tests would be confined almost exclusively to the metocurine and metocurine-pancuronium groups does the actual *P* value

slightly exceed 0.050. Such hypothetical considerations should not alter the way in which an informed reader interprets the results of our study.

We cannot report on the distribution of negative stress tests in our study because our patients were not systematically stressed according to a rigid protocol during the period immediately preceding surgery. We will not be instituting such a program as part of future investigations.

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Anesthetic Management of Patients with AIDS

To the Editor:—Several reports on the risk of acquired immune deficiency syndrome (AIDS) in health-care workers have appeared recently.* In a recent report on 300 health-care workers who worked with AIDS patients at San Francisco General Hospital no cases of AIDS were reported.† Seventy-five per cent of these workers had been caring for AIDS patients for more than 1 yr. More than one-third of those interviewed had been exposed to contaminated fluids, and 89 had accidentally punctured their skin with a needle from an AIDS patient.

Although the AIDS virus does not seem extremely vir-

ulent based on this information, we recognize that the disease has a relatively long incubation time (possibly 5 yr), and that data on transmissibility of AIDS is still being accumulated. Two cases of probable HTLV/LAV transmission to a health-care worker by exposure to blood products have been reported in this country.* While transmission of the virus is extremely rare (two cases of 1,785 workers studied), measures for the protection of health-care workers must be taken. At the same time, this must be balanced by a concern with maintaining a rational and empathetic physician-patient relationship.

The Centers for Disease Control (CDC) has provided guidelines for the protection of health-care workers,‡ although little information directly related to anesthesia is available. AIDS patients who come to surgery at San Francisco General Hospital are treated using precautions

* CDC. Update: Evaluation of human T-lymphocyte virus type III/lymphadenopathy-associated virus infection in health-care personnel—United States. *Morbidity and Mortality Weekly Report* 34:575-578, 1985.

† Gerberding JL, Moss AR, Bryant CE, Levy J, Sande MA: Risk of acquired immune deficiency syndrome (AIDS) virus transmission to health care workers. Presented at the 25th Interscience Conference on Antimicrobial Agents and Chemotherapy, American Society for Microbiology, Minneapolis, MN, 1985.

‡ CDC. Acquired immune deficiency syndrome (AIDS): Precautions for health-care workers and allied professionals. *Morbidity and Mortality Weekly Report* 32:450-52, 1983.