a separate anesthesia gas machine leak test should be performed with each vaporizer individually dialed to a concentration setting of 0%. A dialed setting of 0% is required because the self-sealing valve ports on the manifold are not open unless the vaporizer is dialed to a concentration (ON). If a significant leak is discovered, the vaporizer should be checked for proper positioning.

Procedures for anesthesia gas machine leak tests that help ensure Ohmeda TEC 4® vaporizer mounting integrity appear in both the Ohmeda 8000® and Modulus II™ Operation and Maintenance manuals. They do not, however, appear in the earlier Fraser Harlake Boyle System® instruction manuals.

In summary, it is always important, when mounting an Ohmeda TEC 4® vaporizer to ensure correct positioning. Proper positioning is essential for a properly functioning vaporizer. For additional information, contact Ohmeda at (608)221-1551.

RAYMOND T. RIDDLE
Product Compliance Administrator
Ohmeda
P.O. Box 7550
Madison, Wisconsin 53707

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Beta-adrenergic Blocking Drugs and Apnea

To the Editor:—With interest I read the report on “Timolol and Postoperative Apnea in Neonates and Young Infants” by Bailey.¹

Recent research concerning overdoses of beta-adrenergic blocking drugs (propranolol, timolol, and sotalol) in experimental animals was performed in the National Institute of Public Health and Environmental Hygiene, Bilthoven, The Netherlands. These experiments showed the primary cause of death to be respiratory arrest. When death from respiratory arrest was prevented by artificial ventilation the survival time, using the same doses of the drugs, was significantly prolonged.* When much larger doses of the drugs were used in ventilated animals, death occurred from hemodynamic and cardiac failure.

Some beta-adrenergic blocking drugs are rapidly absorbed when applied topically to the eye, which might easily lead to overdosage, especially in children. In addition, there may be an increased susceptibility in the neonate to this type of drug or immaturity of the blood brain barrier. Any or all of these factors may have been responsible for the apnea reported by Dr. Baily, which would seem to confirm our finding that overdosage of certain beta blockers produces respiratory arrest. It would be interesting to know whether there were other observed signs that can be ascribed to beta-adrenergic blockade such as a decrease in heart rate and blood pressure.

J. J. M. LANGMEIJER, M.D.
Department of Anesthesiology
University Hospital
Catharijnesingel 101
Utrecht
The Netherlands

* Langemeijer JJM, De Wildt DJ, De Groot G, Sangster B: Respiratory failure as main determinant of toxicity due to overdose with different beta-blocking drugs in rats, unpublished data.

REFERENCE

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Cortisol Following Etomidate Administration: Should We Give It the Time of Day?

To the Editor:—The excellent studies by Wagner and White¹ and by Fragen et al.² document that etomidate decreases adrenocortical response to surgery. However, neither group of investigators considered the possible effect of the circadian rhythm in plasma concentration of cortisol. During a normal circadian rhythm, plasma concentrations of cortisol may vary by a factor of five or more (e.g., typically from a nadir of 3 μg/dl at midnight to a peak of 15 μg/dl at 6:00 A.M.).³ These circadian-related alterations in cortisol levels are similar

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