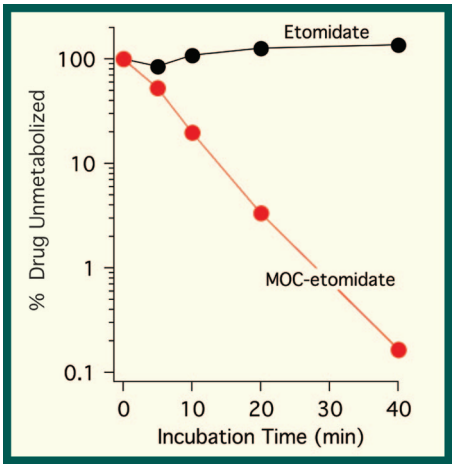
THIS MONTH IN *Anesthesiology*



Etomidate, has limited clinical utility due to suppression of adrenocortical steroid synthesis. The first etomidate analogue, (R)-3-methoxy-3-oxopropyl1-(1-phenylethyl)-1H-imidazole-5-carboxylate (MOC-etomidate), was designed to be susceptible to ultra-rapid metabolism to reduce this effect. MOC-etomidate potently enhanced γ-aminobutyric acid type A receptor function and demonstrated first-order metabolism in human liver homogenates with an *in vitro* half-life of 4.4 min compared with > 40 min for etomidate. A rapid, brief loss of righting reflex and minimal hemodynamic changes were observed in rats without adrenocortical suppression MOC-etomidate, is rapidly metabolized, ultra–short-acting, and does not produce prolonged adrenocortical suppression and maintains the favorable pharmacologic properties of etomidate. *See the accompanying Editorial View on* **page 229**

Blood transfusion may have an adverse effect on long-term health. A prospective observational study assessed long-term survival in patients undergoing coronary artery surgery who received a perioperative allogeneic blood transfusion. Health outcomes of 1,841 consecutive patients with isolated nonemergency first-time coronary artery surgery and survival > 60 days after surgery were determined. Of the 1,062 patients transfused, 266 died (mean follow-up of 8.1 yr). A new malignant condition was recorded on the death certificate of 27% of patients who were transfused, compared with 43% who were not. Transfusion of blood products was not associated with long-term survival. Patients undergoing coronary artery surgery who have received moderate amounts of blood (≤ 6 units) should be reassured that they are unlikely to experience a reduction in long-term survival.

To assess the prognostic value of elevated brain natriuretic peptide (BNP) or *N*-terminal pro-brain natriuretic peptide (NT-proBNP) levels in predicting mortality and major adverse cardiovascular events (MACE), a meta-analysis was performed of studies in patients undergoing noncardiac surgery using unrestricted MEDLINE and EMBASE searches. Preoperative BNP elevation was significantly associated with an increased risk of short-term MACE (< 43 days postsurgery), all cause mortality, and cardiac death. Elevated NT-proBNP levels were also predictive. Preoperative BNP elevation was also significantly associated with an increased risk of long-term MACE (> 6 months) and all cause mortality. These data suggest that elevated BNP and NT-proBNP levels may identify patients undergoing major noncardiac surgery at high risk of cardiac events.

Growing evidence suggests that microvascular dysfunction is the key element of the pathogenesis of septic shock. This retrospective study assessed the outcome and muscle tissue oxygenation (StO_2) of septic shock patients after early resuscitation using early goal-directed therapy. StO_2 was monitored in septic shock patients using a tissue spectrometer. No difference was observed between groups with the exception of pulse oximetry saturation (SpO_2; 94% *vs.* 97%, $P = 0.04$). The StO_2 values were significantly lower in nonsurvivors than in survivors (73% *vs.* 84%, $P = 0.02$). Further investigations are required to determine if correction of an impaired level of StO_2 improves patient outcomes.