

sion and nausea and vomiting after spinal doses of bupivacaine generally exceeding 8 mg, but there was no evidence that it reduced other maternal or neonatal morbidities.

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## Anesthetic induction with etomidate, rather than propofol, is associated with increased 30-day mortality and cardiovascular morbidity after noncardiac surgery

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### ABSTRACT

**Background:** Because etomidate impairs adrenal function and blunts the cortisol release associated with surgical stimulus, we hypothesized that patients induced with etomidate suffer greater mortality and morbidity than comparable patients induced with propofol. **Methods:** We evaluated the electronic records of 31,148 ASA physical status III and IV patients who had noncardiac surgery at the Cleveland Clinic. Among these, anesthesia was induced with etomidate and maintained with volatile anesthetics in 2616 patients whereas 28,532 were given propofol for induction and maintained with volatile anesthetics. Two thousand one hundred forty-four patients given etomidate were propensity matched with 5233 patients given propofol and the groups compared on 30-day postoperative mortality, length of hospital stay, cardiovascular and infectious morbidities, vasopressor requirement, and intraoperative hemodynamics. **Results:** Patients given etomidate had 2.5 (98% confidence interval [CI], 1.9-3.4) times the odds of dying than those given propofol. Etomidate patients also had significantly greater odds of having cardiovascular morbidity (odds ratio [OR] [98% CI]: 1.5 [1.2-2.0]), and significantly longer hospital stay (hazard ratio [95% CI]: 0.82 [0.78-0.87]). However, infectious morbidity (OR [98% CI]: 1.0 [0.8-1.2]) and intraoperative vasopressor use (OR [95% CI] 0.92: [0.82-1.0]) did not differ between the agents. **Conclusion:** Etomidate was associated with a substantially increased risk for 30-day mortality, cardiovascular morbidity, and prolonged hospital stay. Our conclusions, especially on 30-day mortality, are robust to a strong unmeasured binary confounding variable. Although our study showed only an association between etomidate use and worse patients' outcomes but not causal relationship, clinicians should use etomidate judiciously, considering that improved hemodynamic stability at induction may be accompanied by substantially worse longer-term outcomes.

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## Comparison of the effects of albumin 5%, hydroxyethyl starch 130/0.4 6%, and Ringer's lactate on blood loss and coagulation after cardiac surgery

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### ABSTRACT

**Background:** Infusion of 5% human albumin (HA) and 6% hydroxyethyl starch 130/0.4 (HES) during cardiac surgery expand circulating volume to a greater extent than crystalloids and would be suitable for a restrictive fluid therapy regimen. However, HA and HES may affect blood coagulation and could contribute to increased transfusion requirements. **Methods:** We randomly assigned 240 patients undergoing elective cardiac surgery to receive up to 50 ml kg<sup>-1</sup> day<sup>-1</sup> of either HA, HES, or Ringer's lactate (RL) as the