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Clemmesen C G, et al. Effect of a Single Pre-operative 125 mg Dose of Methylprednisolone on Postoperative Delirium in Hip Fracture Patients; a Randomised, Double-Blind, Placebo-Controlled Trial.

Anaesthesia. 2018; 73:1353-1360. 43 references.

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Abstracted by L Easley, who has nothing to disclose.

Objective:

Determine whether a single, pre-operative, high dose of intravenous 125 mg methylprednisolone given on admission to the hospital could reduce the incidence of postoperative delirium (POD) and improve pain and fatigue, postoperatively in elderly patients after a hip fracture.

POD, a common complication among elderly patients after hip fracture surgery, is associated with increased morbidity and mortality and impaired functional recovery. The authors determine whether a single, preoperative, high dose of intravenous 125 mg methylprednisolone given on admission to the hospital could reduce the incidence of POD and improve pain and fatigue, postoperatively in elderly patients after a hip fracture.

All patients admitted acutely after hip fracture, who could speak and understand Danish, could provide informed oral and written consent, were aged ≥ 65 years of age and had a Danish social security number were eligible for inclusion into the study. One-hundred and twenty patients were assigned randomly to either methylprednisolone or placebo. Delirium was screened for daily, and standardized non-pharmacological and pharmacological methods were used to prevent and treat POD. The primary outcome was the cumulative POD severity for each patient on each of the first three postoperative days.

No significant between-group difference was observed for the primary outcome. There were significantly more patients with POD in the placebo group compared with the methylprednisolone group. Patients administered methylprednisolone had significantly less postoperative fatigue than the placebo group, but there were no significant between-group differences in postoperative pain, the administration of antipsychotic drugs, infection, length of inpatient stay or 30- and 90-day mortality.

This study showed no between-group difference in the median Confusion Assessment Method-Short (CAM-S) score. Significantly fewer instances of POD and fatigue occurred in patients receiving methylprednisolone. A single dose of 125 mg methylprednisolone might decrease the incidence of POD and reduce postoperative fatigue in elderly patients after hip fracture. There were also no major adverse reactions or increased incidence of infection in the methylprednisolone group.

Important Points:

A single dose of 125 mg methylprednisolone before restorative surgery does not reduce the severity of POD among hip fracture patients but may reduce the prevalence of postoperative or subsyndromal delirium and fatigue in elderly patients with hip fracture, enabling remobilization and recovery.

7 de Kam P-J, et al. Sugammadex Hypersensitivity and Underlying Mechanisms: A Randomised Study of Healthy Non-Anaesthetised Volunteers.

Br J Anaesth. 2018;121(4):758-767. 26 references.

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Abstracted by L Easley, who has nothing to disclose.

Objective:

Determine specific signs/symptoms of hypersensitivity and the potential of sugammadex to induce hypersensitivity at different doses and explore the underlying mechanism of any hypersensitivity reaction.

Sugammadex is generally well tolerated; however, hypersensitivity has been observed in non-anesthetized healthy volunteers and surgical patients. The authors determine specific signs/symptoms of hypersensitivity and the potential of sugammadex to induce hypersensitivity at different doses and explore the underlying mechanism of any hypersensitivity reaction.

A total of 448 non-pregnant, non-breastfeeding healthy subjects aged 18-55 yr. were included in this randomized, double-blind, parallel-group, placebocontrolled, multicenter study. Subjects without suspected hypersensitivity signs/symptoms were randomized to treatment with sugammadex 4 mg kg⁻¹, 16 mg kg⁻¹, or placebo and received three repeat double-blind i.v. bolus administrations of their assigned treatment during Weeks 1, 5, and 11. A follow-up visit was scheduled for Week 12. Suspected hypersensitivity signs/symptoms were systematically scored based on a pre-determined list. The primary safety endpoint was the number of subjects with adjudicated hypersensitivity signs/symptoms for each study drug administration. The secondary endpoint was the number of subjects with adjudicated anaphylaxis. Skin-prick testing (SPT) and intradermal testing (IDT) were performed for subjects with adjudicated hypersensitivity signs/symptoms.

Hypersensitivity was adjudicated for one subject in the sugammadex 4 mg kg⁻¹ treatment group, the highest recommended dose for routine reversal of neuromuscular block; and for seven subjects in the sugammadex 16 mg kg⁻¹ treatment group, a dose recommended only for potentially life-threatening emergency situations when rapid reversal of neuromuscular block is deemed necessary. Most observed signs appeared within 10 min of sugammadex administration and resolved within 5 h without treatment. Treatment-related adverse events were reported in nine, 16, and 56 subjects in the placebo, sugammadex 4 mg kg⁻¹, and 16 mg kg⁻¹ treatment groups, respectively.

Conscious healthy volunteers who have not been anesthetized or administered a neuromuscular blocking agent are at risk of hypersensitivity reactions with sugammadex. The incidence of hypersensitivity reactions did not increase after repeated sugammadex exposure with doses administered at least 4 weeks apart.

Important Points:

Hypersensitivity or anaphylaxis reactions to sugammadex were dose-dependent when administered without prior neuromuscular blocking agent.

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Dennis A T, et al. Echocardiographic Determination of Resting Haemodynamics and Optimal Positioning in Term Pregnant Women.

Anaesthesia. 2018; 73:1345-1352. 16 references.

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Abstracted by L Easley, who has nothing to disclose.

Objective:

Measure cardiac output using transthoracic echocardiograph, maternal physiological variables, fetal heart rate and maternal comfort scores in three positions: left lateral decubitus and ramped position with and without wedge in term pregnant women.

Optimal positioning for anesthesia in pregnant women is essential to ensure an adequate view at laryngoscopy and to minimize the risk of airway trauma or difficult or failed tracheal intubation. The authors measure cardiac output using transthoracic echocardiograph, maternal physiological variables, fetal heart rate and maternal comfort scores in three positions: left lateral decubitus and ramped position with and without wedge in term pregnant women.

Thirty healthy, term pregnant women with a singleton pregnancy were included in this prospective observational study. After performing baseline transthoracic echocardiography in the left lateral decubitus position, each woman was placed in the ramped position. A pelvic wedge was placed to provide an approximate 15-degree left lateral pelvic tilt. Measurements included left ventricular velocity-time integral and repeated measurements of left arm blood pressure, heart rate by electrocardiography, oxygen saturation, respiratory rate and fetal heart rate. Each woman was then placed in the ramped position without a wedge to provide tilt.

There was no change in mean cardiac output among the three positions. There were no mean differences in oxygen saturation, respiratory rate or fetal heart rate in the three positions; however, there was strong evidence of a difference in median comfort scores in the three positions in term pregnant women.

The study showed no evidence of a change in maternal cardiac output among the positions. There were no significant changes in maternal physiological variables or in fetal heart rate between the ramped positions with or without a wedge. The ramped position without a wedge is safe and acceptable in non-laboring, non-anesthetized healthy term pregnant women, and the left lateral tilt in the ramped position is unnecessary in term pregnant women.

Important Points:

The authors believe, "The ramped position without left lateral tilt in non-laboring, non-anesthetized term pregnant women is safe, feasible and acceptable. The left lateral tilt appears unnecessary in non-laboring nonanesthetized term pregnant women in the head elevated ramped position."

Assessment SAMPLE

1. **According to Ball, et al., which of the following is the most common ventilation mode in obese patients?**
 - a. Volume-controlled ventilation
 - b. Pressure-controlled ventilation
 - c. Assist-control ventilation
 - d. Noninvasive positive pressure ventilation

2. **Beattie, et al., found that postoperative myocardial injury is associated with which of the following?**
 - a. Decreased risk of short-term morbidity
 - b. Increased risk of long-term morbidity
 - c. Decreased risk of short-term mortality
 - d. Lower postoperative troponin concentrations

3. **From the study by Beccaria, et al., on brachiocephalic vein as an alternative to internal jugular vein for central venous cannulation, which of the following was a finding?**
 - a. More frequent procedural difficulties occurred with the brachiocephalic vein approach.
 - b. The presence of a coagulopathy of any kind increased the difficulty of placing either an internal jugular or brachiocephalic central venous catheter.
 - c. The ultrasound-guided BCV approach to CVC is an alternative to the IJV approach and had fewer complications in this study.
 - d. Pneumothorax occurred more frequently when the brachiocephalic vein was used for central venous catheter placement.

4. **According to Brown, et al., what is the most frequent complication for both noncardiac and cardiac-trained anesthesiologists?**
 - a. Intraoperative cardiac arrest
 - b. Intraoperative device malfunction
 - c. Thromboembolic event
 - d. Mean blood pressure <55 mmHg

5. **Christiansen, et al., found the ceiling effect of increasing volume of ropivacaine 0.2% was not clearly observed for which of the following?**
 - a. Duration of paralysis
 - b. Duration of anesthesia
 - c. Sensory block durations
 - d. Motor block durations

- 6. Clemmesen, et al., found that which of the following was reduced in patients administered methylprednisolone?**
- Postoperative pain
 - Postoperative fatigue
 - Length of inpatient stay
 - 30- and 90-day mortality
- 7. According to de Kam, et al., what is the highest recommended dose of sugammadex for routine reversal of neuromuscular block?**
- 4 mg Kg-1
 - 16 mg Kg-1
 - 20 mg Kg-1
 - 24 mg Kg-1
- 8. Dennis, et al., found strong evidence of a difference in which of the following in the three positions in term pregnant women?**
- Oxygen saturation
 - Respiratory rate
 - Median comfort scores
 - Fetal heart rate
- 9. According to Ellermann, et al., what is the association between IVI treatment and the change in Hgb levels and the use of RBCs and mortality in anemic patients?**
- IVI led to the greatest decrease in delta Hgb.
 - IVI treatment correlated with lower RBC transfusion rates in patients from the Department of Gynecology and Obstetrics.
 - ICD codes related to infections were more frequent in anemic patients with IVI treatment.
 - Anemic patients treated with IVI had a significantly higher survival rate.
- 10. According to Fang, et al., which of the following is lower in the group receiving ropivacaine to increase tolerance to the endotracheal tube?**
- Eye-opening time
 - Hypertension
 - Cough rate
 - Extubation time
- 11. According to Fenten, et al., how does FNB compare with LIA after TKA?**
- FNB patients had higher oxycodone use the first day and night after TKA.
 - FNB patients had higher maximum pain scores 3 and 12 months after surgery.
 - FNB provides less pain relief the first day and night after TKA.
 - FNB patients were significantly less likely to use any pain medication 12 months after surgery.