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"Does Magnesium Sulfate attenuate hypertensive response to laryngoscopy and intubation? "

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Abstract:

Endotracheal intubation can have serious deleterious hemodynamic changes. Hypertension and tachycardia are especially dangerous in coronary artery disease, intracranial hypertension. Magnesium sulfate is known for its vasodilating properties. Several studies have reported favorable protective hemodynamic properties of magnesium when used as a premedicant in cardiac or elderly patients. Our aim was to evaluate whether magnesium had the same properties if used just before laryngoscopy in young healthy subjects undergoing elective non-cardiac surgery. This double-blind study was done in Ahwaz university during a 6-month period starting at November 2000. 90 American Society of Anesthesia class I and II patients scheduled for elective surgery under general anesthesia were included. Premedication was excluded and patients were anesthetized with sodium thiopental 5 mg/kg, morphine 0.1 mg/kg, atracurium 0.6 mg/kg. Patients then received either 50 mg/kg (not exceeding 4 g) magnesium sulfate (n=45), or normal saline as placebo (n=45) in a double-blind (n=45), or normal saline as placebo (n=45) in a double-blind setting. Systolic and diastolic blood pressures and heart rate were recorded at 6 times: before induction, after induction 30 seconds and 1, 2, 3 minutes after intubation. Magnesium ion plasma levels were measured before induction and 5 minutes after intubation. Only diastolic pressure at 30 second after intubation had a significant lower value in magnesium group ($P < 0.002$) and other variables were statistically nonsignificant. In the magnesium group Mg^{++} plasma concentration was 5.936 ± 1.009 meq/l (mean \pm SD) at 5 minutes after induction. We concluded that magnesium sulfate had a very limited usefulness in the attenuation of blood pressure and heart rate in young healthy patients if given during induction of anesthesia.

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