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## **Effectiveness of Magnesium Sulfate on the Smoothness of Extubation in Patients undergoing General Anesthesia with Endotracheal Intubation: A Randomized Double Blind Controlled Trial**

### **Background and Objective**

Tracheal extubation remains a critical step in anesthetic management, and is supposedly associated with coughing, bucking, laryngospasm, and agitation. Physicians should make all possible efforts to allow optimal smooth extubation and attenuate the airway and circulatory responses. Several drugs have been discovered to attenuate the aforementioned reflexes. The popularity of magnesium sulfate ( $\text{MgSO}_4$ ) can be attributed to its sedative, analgesic, and antihypertensive properties. We aimed at study the effect of  $\text{MgSO}_4$  on the smooth accomplishment of tracheal extubation.

### **Methods**

We selected 60 patients, aged 18–65 years. All patients had undergone a standardized anesthetic technique. They were randomized to either the  $\text{MgSO}_4$  group (group M, 30 patients) or placebo group (control group C, 30 patients). We recorded and analyzed the smoothness of tracheal extubation, sedation score, hemodynamics, visual analogue scale pain score, the time of extubation, the duration of surgery, the amount of fentanyl consumption, and postoperative morphine consumption.

## Results

The above-mentioned two groups were homogenized to obtain their demographic information. There were no clinically significant differences between the groups, based on the average arterial pressure, heart rate, or oxygen saturation. However, the smoothness of extubation score was lower in the  $\text{MgSO}_4$  group (median=1, interquartile range (IQR): 1,2) than in the control group (median=3, IQR: 2,3) ( $p<0.001$ ). While the Ramsey sedation score was higher, the visual analogue scale was lower in the  $\text{MgSO}_4$  group, compared to the control group. The  $\text{MgSO}_4$  group revealed lower intraoperative fentanyl consumption than the control group.

Moreover, the  $\text{MgSO}_4$  group displayed lower postoperative morphine use.

## Conclusions

The  $\text{MgSO}_4$  group was associated with smooth extubation conditions, concomitant with less coughing, bucking, and laryngospasm than the control group.