DOSE-RESPONSE STUDY: MGSO₄ IN CARDIOVASCULAR RESPONSES AFTER LARYNGOSCOPY & ENDOTRACHEAL INTUBATION

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INTRODUCTION:

The effects of pre-treatment with magnesium on cardiovascular responses associated with intubation were studied previously. In this dose-response study we wanted to find optimal dose of magnesium that causes a decreased response after laryngoscopy & endotracheal intubation.

METHODS:

After approval of ethics committee of Isfahan university. In a double-blind, randomized clinical trial, 120 ASA-1 patients in ages between 15-50 years old, candidates of elective surgery were selected and classified in 6 groups (20 patients in each). The pulse rate and arterial blood pressure were measured and recorded at 5 min before taking any drugs and then according to different groups of magnesium sulphate (10, 20, 30, 40, 50 mg/kg) and lidocaine (1.5 mg/kg).

The induction of anesthesia was the same in all groups and the pulse rate and arterial blood pressure were measured and recorded at just before intubation and also at 1, 3, and 5 min after intubation (before surgical incision).

Statistical analysis was performed by use of ANOVA, post Hoc test (Duncan), Pearson correlation, and Chi square tests.

RESULTS :

The groups were well matched for demographic data and no statistically significant differences were found between groups in age, weight, sex and surgical position. After laryngoscopy and intubation statistically significant changes as percent base values were found between magnesium groups and lidocaine ($p < 0.05$) but between magnesium groups was not significant ($p > 0.05$).

In group C (30 mg/kg MgSO₄) changes in heart and mean blood pressure were lower from another groups. TOF at minute 45 after induction of anesthesia in all groups has been no statistically significant differences ($p > 0.05$).

Complications of magnesium, like hypotension, arrhythmia, nausea, sweating, flushing and hot sense has been no significant change between all groups ($p > 0.05$).

DISCUSSION:

There were no statistically significant differences in blood pressure, pulse rate, TOF and complications in and between groups who received magnesium but the significant differences were seen between magnesium and lidocaine in those parameters.

We concluded that pretreatment with different doses of magnesium sulfate have a safe decreasing effect on cardiovascular responses, that were more effective than pretreatment.

REFERENCES:

- 1- *British J of Anesth* . 89 ,:594-598.
- 2- *American J of cardiology*. 67:1435-7.