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Addition of magnesium sulfate to bupivacaine improves analgesic efficacy after tonsillectomy

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Abstract

INTRODUCTION/ PURPOSE: We aim to compare the wound infiltration (peritonsillar fossa) of magnesium sulphate combined with bupivacaine, bupivacaine alone and saline solution on post- tonsillectomy pain in children. The accessory goals were to assess how magnesium sulfate infiltration affected the incidence of nausea and vomiting as well as the prevention of laryngospasm.

MATERIALS and METHOD: This study is a prospective; double blinded and randomized clinical trial. Patients were randomized into three groups . Group 1 received saline solution (NaCl), group 2 received 0.25% bupivacaine (1 mg/kg) and group 3 received magnesium sulphate (5 mg/kg) and 0.25% bupivacaine (1 mg/kg) after tonsillectomy using three-point technique.The mCHEOPS scale was used to assess pain. The occurence of laryngospasm, nausea and vomiting was monitored.

FINDINGS: Seventy-five children undergoing tonsillectomy were enrolled. The mCHEOPS scores of the group 3 were significantly lower than those of the group 2 and 1 (P < 0.001).Group 3 took longer to administer the first analgesic than the groups 2 and 1 (P < 0.001). The mean consumption of additional analgesic drugs was lower for the group 3 than the other groups (P < 0.001). There were no episodes of laryngospasm in the group 3 in comparison with the other groups. There was no statistically significant difference in the incidence of nausea and vomiting (P = 0.628).

DISCUSSION / CONCLUSION: The adjunction of magnesium sulphate to bupivacaine proved to provide more efficient pain control than bupivacaine alone. However, the small number of participants and the absence of sampling at the P level of 0.005 do not allow to conclude with absolute certainty.

PURPOSE

- We aim to compare the wound infiltration (peritonsillar fossa) of magnesium sulphate combined with bupivacaine, bupivacaine alone and saline solution on post-tonsillectomy pain in children. The accessory goals were to assess how magnesium sulfate infiltration affected the incidence of nausea and vomiting as well as the prevention of laryngospasm.

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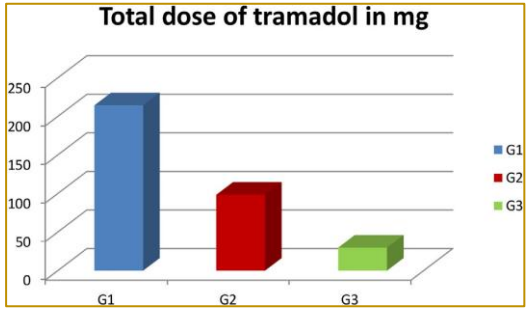
FINDINGS

Characteristics of patients.

	Group G1 (N = 24)	Group G2 (N = 25)	Group G3 (N = 26)
Age (years)	7.25	7.32	6.35
Gender (M/F)	5/15	5/15	4/16
Weight (Kg)	27.96 ± 5.668	28.6 ± 6.671	25.77 ± 4.403
ASA (I/II)	23/1	23/2	25/1
Duration of surgery (min)	30± 8	30± 6	31± 9

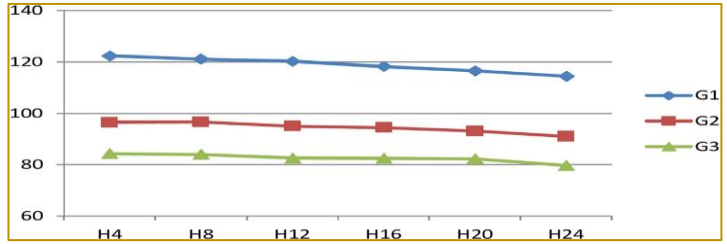
The mean consumption of Tramadol during postoperative 24 h period.



The mean consumption of additional analgesic drugs was lower for the group 3 than the other groups (P < 0.001)

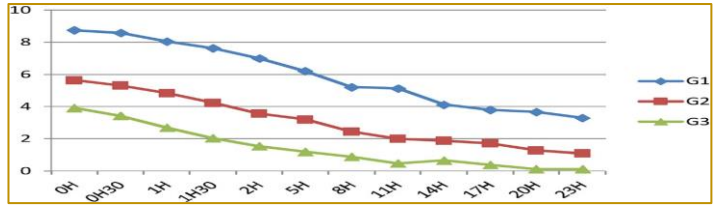
HR (heart rate) values of the groups during postoperative 24 h period.

HR values during postoperative 24 h period were lower in group2 than group 1 ($P < 0.001$). In addition, HR values were lower in group 3 when compared to group 2 ($P < 0.001$)



mCHEOPS score of the groups during postoperative 24 h period.

The mCHEOPS scores of the group 3 were significantly lower than those of the group 2 and 1 (P < 0.001)



DISCUSSION / CONCLUSION:

- ❑ The adjunction of magnesium sulphate to bupivacaine proved to provide more efficient pain control than bupivacaine alone.
- ❑ However, the small number of participants and the absence of sampling at the P level of 0.005 do not allow to conclude with absolute certainty.

Références

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