

## Efektivitas magnesium sulfat dalam mencegah emergence agitation pada anak yang menjalani anestesia dengan sevoflurane = Effectivity of magnesium sulphate to prevent emergence agitation in children undergoing anesthesia with sevoflurane.

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### Abstrak

**Latar belakang:** Emergence agitation (EA) merupakan gangguan perilaku sementara yang sering terjadi pascaanestesia dengan sevoflurane dan berpotensi membahayakan pasien. Pemberian magnesium sulfat 10 % 20 mg/kg bolus IV selama 15 menit, dilanjutkan 10 mg/kg/jam secara infus kontinyu selama pembedahan diketahui mencegah EA. Penelitian ini bertujuan mengetahui efektivitas magnesium sulfat 10% 20 mg/kg bolus IV selama 10 menit pada 10 menit sebelum anestesia selesai dalam mencegah EA pada anak yang menjalani anestesia dengan sevoflurane. Magnesium sulfat dinilai efektif jika dapat menurunkan kejadian EA.

**Metode:** Penelitian uji klinik acak tersamar ganda pada anak usia 1,5-12 tahun yang menjalani anestesia dengan sevoflurane di RSCM pada bulan September-Oktober 2018. Sebanyak 108 subjek didapatkan dengan metode konsekutif yang dirandomisasi menjadi dua kelompok. Kelompok Magnesium (n=54) mendapat magnesium sulfat 10% 20 mg/kg bolus IV selama 10 menit dengan pompa *syringe* pada 10 menit sebelum anestesia selesai, sedangkan kontrol (n=54) mendapat NaCl 0,9% 0,2 ml/kg bolus IV selama 10 menit dengan pompa *syringe* pada 10 menit sebelum anestesia selesai. Kejadian EA, waktu pulih, hipotensi pascaoperasi dicatat. EA dinilai dengan *Pediatric Anesthesia Emergence Delirium* (PAED). Analisis data menggunakan uji multivariat regresi logistik.

**Hasil:** Kejadian EA pada kelompok magnesium sebesar 25,9% sedangkan kontrol 16,7% (OR = 0,786; IK 95% 0,296-2,091; p=0,63). Waktu pulih memiliki nilai rerata 8,2  $\pm$  4,74 menit untuk kelompok magnesium dibandingkan kontrol 10,87  $\pm$  6,799 menit (OR = 2,667; IK 95% 0,431-4,903; p=0,02). Pada kedua kelompok, tidak didapatkan kejadian hipotensi.

**Simpulan:** Pemberian magnesium sulfat 10% 20 mg/kg bolus IV selama 10 menit pada 10 menit sebelum anestesia selesai secara statistik tidak efektif mencegah kejadian EA pada anak yang menjalani anestesia dengan sevoflurane.

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**Background:** Emergence agitation (EA) is a common transient behavioral disturbance after anesthesia with sevoflurane and may cause harm. Magnesium sulphate 10% 20 mg/kg as a slow intravenous bolus over 15 minutes, followed by 10 mg/kg/h as a continuous intravenous infusion during surgery can prevent EA. This study evaluated the effectivity of magnesium sulphate 10% 20 mg/kg as a slow intravenous bolus over 10 minutes at 10 minutes before anesthesia ended to prevent the incidence of EA in children undergoing anesthesia with sevoflurane. Magnesium sulphate was considered effective if could reduce the incidence of EA.

**Method:** This was a double-blind randomized clinical trial on children aged 1,5-12 years old underwent anesthesia with sevoflurane in RSCM on September until Oktober 2018. One hundred eight

subjects were included using consecutive sampling method and randomized into two groups. Magnesium group (n=54) was given magnesium sulphate 10% 20 mg/kg as a slow intravenous bolus over 10 minutes at 10 minutes before anesthesia ended while control group (n=54) was given NaCl 0,9% 0,2 ml/kg as a slow intravenous bolus over 10 minutes at 10 minutes before anesthesia ended. Incidence of EA, recovery time and postoperative hypotension were observed. *Pediatric Anesthesia Emergence Delirium* (PAED) scale was used to assess EA. Statistical tests used were logistic regression multivariate analysis.

**Result:** Incidence of EA in magnesium group was 25,9% while in control group was 16,7% (OR = 0,786; 95% CI 0,296-2,091; p=0,63). Mean recovery time in magnesium group was  $8,2 \pm 4,74$  minutes and control group was  $10,87 \pm 6,799$  minutes (OR = 2,667; 95% CI 0,431-4,903; p=0,02). Hypotension was not found in both groups.

**Conclusion:** Administration of magnesium sulphate 10% 20 mg/kg as a slow intravenous bolus over 10 minutes at 10 minutes before anesthesia ended was not effective to prevent the incidence of EA in children undergoing anesthesia with sevoflurane.