Pengaruh Lidokain Intravena Kontinyu Intraoperatif terhadap Luaran Pascabedah Kraniotomi: Kajian Terhadap Nyeri Pascabedah, Kadar TNF-alfa dan Lama Rawat = The effects of intraoperative continous intravenous lidocaine on postoperative craniotomy outcomes: A study on postoperative pain, TNF-alpha levels and hospitalization duration

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Abstrak

Latar belakang: Proses pembedahan seperti kraniotomi mengakibatkan inflamasi, dimulai sejak awal insisi dan berdampak pada kejadian nyeri pascabedah yang memengaruhi lama rawat pasien. Lidokain intravena intraoperatif memiliki efek analgesik dan antiinflamasi yang terbukti efektif sebagai terapi ajuvan dalam manajemen nyeri pasca pembedahan abdominal. Penelitian ini bertujuan untuk mengevaluasi efek pemberian lidokain intravena kontinyu intraoperatif pada kraniotomi, terhadap nyeri pascabedah, kadar TNF-alfa, dan lama rawat.

Metode: Randomized controlled trial ini menggunakan pengambilan sampel secara consecutive sampling. Sebanyak 50 subjek penelitian dengan tumor otak yang menjalani kraniotomi. Kelompok intervensi diberikan bolus intravena lidokain 2% dosis 1,5 mg/kgBB saat induksi, dilanjutkan rumatan 2 mg/kgBB/jam. Kelompok kontrol dengan pemberian NaCl 0,9% dengan volume sama. Luaran penelitian adalah skala nyeri pascabedah berdasarkan nilai NPS, kadar TNF-alfa dan lama rawat.

Hasil: Skor nyeri sesuai nilai NPS pada 1 jam pascabedah, 6 jam pascabedah, dan 24 jam pascabedah antara kelompok intervensi dengan kontrol ($p < 0,001$). Terdapat perbedaan bermakna antar dua kelompok mengenai selisih kadar TNF-alfa prainduksi dengan 1 jam pascabedah ($p = 0,001$). Sedangkan selisih kadar TNF-alfa prainduksi dengan 24 jam antar dua kelompok tidak menunjukkan perbedaan signifikan ($p = 0,334$). Luaran lama rawat tidak berbeda bermakna.

Simpulan: Pemberian lidokain intravena kontinyu intraoperatif dibandingkan plasebo pada kraniotomi berpengaruh terhadap nyeri pascabedah dan kadar TNF-alfa, namun tidak berpengaruh pada lama rawat.
.....Background: Surgery such as craniotomy causes inflammation which affects the incidence of postoperative pain and then affect hospitalization duration. Lidocaine has analgesic and anti-inflammatory effects which effective as an adjuvant in the management of postoperative pain in abdominal surgery. This study aims are to investigate the effects of the intraoperative continuous intravenous lidocaine during craniotomy on postoperative pain, TNF- levels, and hospitalization duration.

Methods: This randomized controlled trial uses consecutive sampling method. A total of 50 subjects with brain tumors underwent craniotomy. The therapy group was given lidocaine 2% intravenous bolus 1.5 mg/kg at induction followed by maintenance at 2 mg/kg/hour, the control group was given NaCl 0.9% with the same volume. The outcomes assessed were postoperative pain, TNF- levels, and hospitalization duration.

Results: There was a significant difference in NPS 1-hour postoperative, 6-hour postoperative NPS, and 24-hour postoperative NPS scores between the treatment group and the control group ($p < 0.001$). There was a significant difference between pre-induction TNF- levels and 1 hour postoperatively ($p = 0.001$) however pre-induction TNF- levels with 24 hours was not significantly different ($p = 0.334$). There was no significant difference in hospitalization duration between those groups.

Conclusions: Intraoperative continuous intravenous lidocaine administration compared to placebo at craniotomy had an effect on postoperative pain and TNF- levels but had no effect on hospitalization duration.