

Profil pemberian cairan perioperatif pada pasien anak di Rumah Sakit Cipto Mangunkusumo serta pengaruhnya terhadap keseimbangan asam basa, elektrolit, dan kadar glukosa darah = Perioperative fluid for pediatric patients in cipto mangunkusumo hospital and the effects on acid base balance, electrolyte, and blood glucose

Ratih Puspita, author

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Abstrak

Latar belakang. Pemberian cairan intravena pada pasien anak yang menjalani tindakan bedah berfungsi untuk mempertahankan keseimbangan metabolik tubuh. Pemilihan cairan perioperatif yang tidak tepat dapat menimbulkan komplikasi berupa asidosis metabolik, hiponatremia, hipoglikemi, atau hiperglikemia.

Tujuan. Mengetahui profil pemberian cairan perioperatif di Rumah Sakit Cipto Mangunkusumo (RSCM) serta pengaruhnya terhadap keseimbangan asam basa serta kadar elektrolit dan gula darah serum. Metode. Studi deskriptif kohort prospektif pada pasien anak (1 bulan ? 18 tahun) yang menjalani tindakan bedah elektif di RSCM. Jenis dan jumlah cairan perioperatif yang diberikan dicatat, serta dilakukan pemeriksaan laboratorium (analisis gas darah, elektrolit dan gula darah serum) sesaat sebelum tindakan bedah, setelah tindakan bedah, serta 6 jam setelah pemberian cairan postoperatif.

Hasil penelitian. Dari 61 subyek yang diteliti, 65,6% tidak mendapat cairan preoperatif. Cairan yang paling banyak digunakan sebagai cairan intraoperatif adalah Ringer asetat malat (RAM) yaitu 77% dan cairan postoperatif adalah kristaloid hipotonik (83,6%). Jumlah cairan preoperatif dan postoperatif sebagian besar sesuai formula Holliday-Segar. Subyek yang mendapat cairan preoperatif D10 1/5 NS + KCl (10) lebih banyak mengalami hiponatremia (13,4% vs 5%) dan gangguan kadar gula darah (20% vs 0%) dibandingkan dengan subyek yang tidak mendapat cairan. Asidosis metabolik terjadi pada kelompok cairan intraoperatif RAM (36,2%) maupun Ringer asetat (36,4%). Hiponatremia pasca pemberian cairan postoperatif terjadi pada 57,1% subyek yang tidak mendapat cairan, 44,4% pada kelompok KA-EN3B®, dan 21,9% pada kelompok D10 1/5 NS + KCl (10). Hiperglikemia terjadi pada 15,6% subyek yang mendapat D10 1/5 NS + KCl (10).

Simpulan. Pemberian cairan perioperatif di RSCM bervariasi. Angka kejadian hiponatremia pasca pemberian kristaloid hipotonik adalah 13,4 - 44,4%. Hiponatremia dan gangguan kadar gula darah terjadi pada subyek yang mendapat cairan D10 1/5 NS + KCl (10).

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Background. Intravenous fluid in pediatric surgery patients aimed to maintain acid-base balance and also normal serum electrolyte and blood glucose. Inappropriate perioperative fluid management may cause complications such as metabolic acidosis, hyponatremia, hypoglycemia, or hyperglycemia.

Objects. To study the profile of perioperative fluid for pediatric patients in Cipto Mangunkusumo Hospital (CMH) and its effects on acid-base balance, electrolyte, and blood glucose. Method. A descriptive prospective cohort study in children aged 1 month to 18 years old who underwent elective surgery in CMH. The intravenous perioperative fluid given to the patients and their amount were recorded. Laboratory examinations were done 3 times (right before surgery, right after surgery, and 6 hours after postoperative fluid was started), which are blood gas analysis, serum electrolyte, and blood glucose.

Results. Among 61 subjects, 65,6% did not receive any preoperative fluid. The most common intravenous fluid were Ringer's acetate malate (RAM) which is 77% as intraoperative fluid and hypotonic crystalloids (83,6%) as postoperative fluid. The amount of preoperative and postoperative fluid was mostly in accordance with Holliday-Segar formula. Subjects who had D10 1/5 NS + KCl (10) as preoperative fluid had more hyponatremia (13,4% vs 5%) and blood glucose disturbance (20% vs 0%) compared to subjects without preoperative fluid. Metabolic acidosis occurred in subjects who had either RAM (36,2%) or Ringer's acetate (36,4%) as intraoperative fluid. Hyponatremia 6-hours after postoperative fluid occurred in 57,1% subjects without intravenous fluid, 44,4% subjects who had KA- EN3B®, and 21,9% subjects who had D10 1/5 NS + KCl (10). Hyperglycemia occurred in 15,6% subjects who had D10 1/5 NS + KCl (10).

Conclusion. There is a variety in perioperative fluid in CMH. Hyponatremia incidence after receiving hypotonic crystalloid is 13,4 - 44,4%. Hyponatremia and blood glucose disturbances occurred in subjects who had D10 1/5 NS + KCl (10).