

children. This study was need based and addressed a very important and clinically relevant issue. However, we have few concerns related to the article which we would like to get the clarification from the author.

1. In Table I of the article, we were intrigued to note that patent ductus arteriosus (PDA) led to acute kidney injury on day 1, and that too requiring PD [1]. We would like to know the exact clinical/ laboratory criteria for doing peritoneal dialysis in that baby.
2. Many babies (50% of the study population) had undergone PD due to necrotizing enterocolitis (NEC) as one of the underlying causes (**Table I**) [1]. The result section also mentions that 5 (23.8%) of babies had perforated NEC (stage IIb) [1]. As the presence of NEC, particularly perforated NEC is a contraindication to do PD [2], why was it carried out in these babies? This is important, as approximately 80% of the babies who had undergone PD with NEC as underlying cause, ultimately died [1].

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## REFERENCES

1. Okan MA, Topcuoglu S, Karadag NN, Ozalkaya E, Karatepe HO, Vardar G, *et al.* Acute peritoneal dialysis in premature infants. *Indian Pediatr.* 2020;57:420-2.
2. Spector BL, Misurac JM. Renal replacement therapy in neonates. *Neoreviews.* 2019;20:e697-710.

## AUTHORS' REPLY

We would like to thank the authors for their interest in our article [1]. The comprehensive criticism of methodological and pathophysiological issues presented in their letters provides an illuminating framework for our study. We would like to offer some clarifications regarding the points they have raised.

Peritoneal dialysis was indicated according to the Neonatal RIFLE Criteria for acute kidney injury (AKI) [2] *i.e.*, oliguria/anuria (urine output of <0.7 mL/kg/h for 24 h or anuria for 12 h), failure of conservative treatment (furosemide or water restriction in cases without hypovolemia), signs of uremia (impaired cardiac and respiratory functions, or seizures), refractory hyperkalemia, metabolic acidosis or fluid overload. In our study, the patient who was started peritoneal dialysis (PD) at the earliest time had a gestational age of 27 weeks and weighed 1060 g, with a hemodynamically significant patent ductus arteriosus (PDA) and history

of anhydramnios. PD was initiated at the end of the first day of life for anuria, failure of conservative treatment, signs of uremia and was performed for four days. Urine output was obtained on the third day of life. The patient responded successfully to PD and survived thereafter. The literature on AKI in premature infants with a diagnosis of necrotizing enterocolitis (NEC) is limited. The incidence of AKI in NEC is very high and the mortality is two-fold higher than of infants with no AKI [3]. Downard, *et al.* [4] demonstrated in rat pups with NEC that the utility of direct peritoneal resuscitation (DPR) increases the intestinal blood flow significantly and speculated DPR may be a novel strategy to improve intestinal blood flow in NEC. Another study [5] reported that topical 1.5% dextrose solution enhanced significantly the blood flow in the terminal ileum to the same degree as 2.5% dextrose solution in Sprague-Dawley rats. Direct peritoneal resuscitation as a treatment modality is applicable in any disorder with decreased intestinal blood flow. The maintenance of intestinal blood flow takes control of the multi-system inflammatory response and decreases the overall risk of multiple organ dysfunction and death [5]. Peritoneal dialysis is also an alternative and rescue method to treat infants with NEC complicated with intestinal perforation. Peritoneal dialysis can be used as a type of peritoneal lavage in NEC for the removal of inflammatory cytokines, toxins, and may help in remodeling and healing of intestine [6]. We reiterate that initiation of early PD in sick extremely low birthweight infants with NEC and AKI may save lives [7].

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## REFERENCES

1. Okan MA, Topcuoglu S, Karadag NN, Ozalkaya E, Karatepe HO, Vardar G, *et al.* Acute peritoneal dialysis in premature infants. *Indian Pediatr.* 2020;57:420-2.
2. Ricci Z, Ronco C. Neonatal RIFLE. *Nephrol Dial Transplant.* 2013;28:2211-4.
3. Bakhoun CY, Basalely A, Koppel RI, Sethna CB. Acute kidney injury in preterm infants with necrotizing enterocolitis. *J Matern Fetal Neonatal Med.* 2019;32:3185-90.
4. Downard CD, Matheson PJ, Shepherd JA, Maki AC, Garrison RN. Direct peritoneal resuscitation augments ileal blood flow in necrotizing enterocolitis via a novel mechanism. *J Pediatr Surg.* 2012;47:1128-34.
5. Walker SK, Matheson PJ, Schreiner MT, Smith JW, Garrison RN, Downard CD. Intraperitoneal 1.5% Delflex improves intestinal blood flow in necrotizing enterocolitis. *J Surg Res.* 2013;184:358-64.
6. Canpolat FE, Yurdakok M, Yigit S. Can peritoneal dialysis be used in preterm infants with gastrointestinal perforation? *Pediatr Int.* 2010;52:834-5.
7. Kaul A, J Kapil Jadhav, Shah S. Peritoneal dialysis in an extremely low birth weight neonate with ileostomy. *Indian J Crit Care Med.* 2019;23: 232-3.