Journal of Nephrology & Renal Diseases

Short Communication

A SCITECHNOL JOURNAL

Clinical Effectiveness to Use of Peritoneal Dialysis in Children with ARF after Surgical Correction of Congenital Heart Defects

Mekenbaeva R.T

Key: congenital heart disease, children, surgical correction, acute renal failure, peritoneal dialysis.

The purpose of research - determine the clinical efficacy of peritoneal dialysis (PD) in children with acute renal failure after correction of complex congenital heart disease (CHD).

Methods: examined 52 patients aged 1 month. up to 4 years on the background with ARF after cardiac surgical correction of CHD, who were selected in 2 groups: group 1 - 30 children without PD, 2nd group - 28 children with PD. Children with oligoanuria in both groups conducted diagnostic tests of blood levels of urea and creatinine determination of creatinine clearance and urea clearance, echocardiography-control study to determine the hemodynamic status, determining the gas composition, and acid-base balance of blood electrolytes before and after intensive therapy (group 1), using PD (group 2).

Results: In group 1, the level of azotemia (creatinine clearance and urea clearance) persisted for more than 7 days, while in group 2, normalization of urea and creatinine clearance was observed even on the 4th day. Improvement of hemodynamic parameters (heart preload reduction by 22%) was observed in group 2. Improved gas exchange in lung function observed in the 2nd group.

Findings

1. Peritoneal dialysis can be used as a method of continuous renal replacement therapy makes it possible to control the level of azotemia in the postoperative period in patients with oligoanuria.
2. Indications for use of PD in patients with CHD are low weight patients (less than 10 kg), long IR (120 min) and the development of postoperative ARF.
3. Application PD in complex intensive therapy of children with ARF after surgical correction of complex CHD reduces cardiac preload level of 22%, which reduces the amount cardiotonical support.
4. Peritoneal dialysis improves gas exchange (R02/K02> 300) function (compliance, increase in lung tissue by 20%) in children after heart operations through continuous slow ultrafiltration.
5. Correction of electrolyte metabolism and acid-base status in children with ARF after surgical correction of congenital heart disease is significantly improved when using PD.

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Citation: Mekenbaeva R.T (2020) Clinical Effectiveness to Use of Peritoneal Dialysis in Children with ARF after Surgical Correction of Congenital Heart Defects . J Nephrol Ren Dis 4:2.

Author Affiliations
Royal Free Hospital, UK