Acute peritoneal dialysis with use of soft peritoneal dialysis catheter in infants <1500g (Pediatric Nephrol. 2023;38:1241-8)

Performing peritoneal dialysis (PD) is challenging in neonates, especially on low birth weight and extremely low birth weight babies. Insertion of standard cuffed Tenckhoff catheter (TC) and stylet-based rigid catheters (SRC) is difficult due to limited peritoneal space; hence, various improvisations have been attempted.

This retrospective study was conducted at 5 neonatal centers in India on very low birth weight (VLBW <1500g) and extremely low birth weight (<1000g) infants who under-went PD between May, 2012 and October, 2021. PD was per-formed using SRC in 10 infants (before August, 2018) and soft peritoneal dialysis catheter (SPDC) in 14 infants (after August, 2018). PD was initiated at a median (IQR) age of 4.5 (3-6) days and continued for a 3 (1.3-5) days. Resistant hyperkalemia, refractory acidosis and fluid overload were the commonest indication for initiating PD. SPDC was associated with significant lower rates of peritonitis (7%) as compared to SRC (40%). Nine out of ten (9/10) infants had catheter malfunction in SRC group compared to 7/14 in SPDC group. Also survival during PD improved by using SPDC from 50% to 93% (P=0.02). SPDC was associated with significant reduction of PD complications and deaths from PD- related complications, and is a viable option of kidney support therapy for small infants in low-resource settings.

Ceftolozane/tazobactam vs meropenem in neonates and children with complicated urinary tract infection (Pediatr Infect Dis J. 2023;42:292-8)

Ceftolozane/tazobactam, a cephalosporin-β-lactamase inhibitor combination is found to be effective and safe in adults with complicated urinary tract infection (cUTI). There is limited data in children regarding the use of ceftolozane/tazobactam combination; hence, this phase-2 randomized, double-blind study was conducted in neonatal and pediatric participants at 28 study sites in 8 countries across Western Europe, Eastern Europe, and North America between April, 2018 and December, 2020. Children from birth to <18 years of age were eligible for the study. This study group had a pretreatment baseline urine culture specimen obtained within 48 hours before the administration of the first dose of study treatment, and had pyuria with clinical signs and/or symptoms of cUTI. Children were excluded if they had a cUTI within the previous year caused by a pathogen known to be resistant to either intravenous antibiotic treatment, a concomitant infection that required non study systemic antibacterial therapy, received antibacterial therapy for >24 hours during the 48 hours preceding the first dose of study treatment or had estimated creatinine clearance <50ml/min/1.73m.^{2} Total duration of treatment was 7-14 days. Oral step-down therapy was permitted at the investigator's discretion after 3 days of intravenous therapy. Assessments were performed at the end of treatment (EOT) visit, test of cure (TOC) visit occurring 5-9 days after the last dose of treatment, and end of intravenous therapy (EOIV) visit. Among 95 participants, 71 received ceftolozane/tazobactam and 24 received meropenem. *E.coli* was the most common qualifying baseline uropathogen. Rates of clinical cure were high for both ceftolozane/tazobactam and meropenem at EOT (94.4% and 100%) and at TOC (88.7% and 95.8%). Also, rate of adverse event and microbial eradication were comparable in both the groups. Ceftolozane/tazobactam had a favorable safety profile in pediatric participants with cUTI, and was an effective antimicrobial.

Long term complications in patients with childhood-onset nephrotic syndrome (Pediatric Nephrol. 2023; 38:1107-13)

Data on long term complications in Indian children with childhood-onset nephrotic syndrome (NS) is limited. This observational study was conducted in 101 patients with childhood-onset NS with onset before 10 years of age (excluding congenital and infantile NS) who were 15 years or older at their visit in December, 2021. Long-term complications were assessed using anthropometric parameters, blood pressure measurement, dual-energy X-linked absorptiometry (DEXA) scan, and carotid intima-media thickness (cIMT). The mean (SD) age at the onset of disease was 4.8 (2.6) years and at the time of study was 17.6 (2.4) years. Most common disease phenotype was steroid dependent NS (58.4%), followed by frequently relapsing NS (18.8%), infrequently relapsing NS (15.8%)) and SRNS in 6.8% of patients. One or more steroid sparing agent was used in about two-thirds of the patients, whereas long term remission was achieved in only 38.6% patients at the time of study. Patients with infrequently relapsing NS had lower rate of obesity, growth failure, hypertension and abnormal DEXA scan compared to other phenotypes. The rate of these complications was higher in the group without longterm remission. Probability of long term remission was increased by sustained remission of ≥ 4 years after 10 years of age and decreased by the need to use more than one steroid sparing agent.

Since long-term complications were noted in most of these patients, focus should be on preventing these complications and reducing the long term morbidity in these patients.

Rachita Singh Dhull
rsd.pedia@gmail.com