THE KOREAN SOCIETY OF NEPHROLOGY
APCN & KSN 2024
June 13(Thu) - 16(Sun), 2024 Coex, Seoul, Korea
APSN
Promoting Sustainable Kidney Health: The Asia-Pacific and Beyond

Abstract Submission No.: A-0600

Therapeutic Plasma Exchange in Pediatric Patients: A Single-Center Retrospective Study

Reza Fahlevi, Eka Laksmi Hidayati, Henny Adriani Puspitasari, Sudung Oloan Pardede, Irawan Mangunatmadja
Department of Pediatrics-Nephrology, Cipto Mangunkusumo Hospital, Indonesia

Objectives : Therapeutic plasma exchange (TPE) is one of the extracorporeal therapy modalities to remove large molecules in blood plasma in various diseases. This study examines the clinical characteristics, indications, complications, and outcomes of patients undergoing TPE in our hospital.
Methods : This is a restrocpective cohort study. We review the electronic medical records of pediatric patients who underwent TPE in our hospital between July 2020 and January 2024. Patients' demographic, clinical, and laboratory data were obtained retrospectively from medical records. The number of TPE sessions for each patient was determined by indication and clinical improvement. Pediatric nephrologists and dialysis nurses performed TPE with Prismaflex® machine and filtered through temporal jugular or femoral vein access. Each TPE session used 5% albumin and/or fresh frozen plasma as a replacement and heparin as an anticoagulant with tight monitoring of vital signs and laboratory parameters.
Results : During the 3.5-year study period, 137 TPE sessions were performed in 32 patients (11 males/21 females). The median age was 12 years (1–17), and the median body weight was 38.9 kg (10–65). Neurology disorders were the most common indication (62.5%) including Guillain Barre Syndrome, NMDAR encephalitis, myasthenia gravis, and neuromyelitis optic. Other indications were renal disease (21.9%), pre/post-transplantation (9.4%), and others (6.3%). Nine patients (28.1%) had complications associated with the procedure (hypovolemic shock, hypothermia, bleeding, allergic reaction, and anemia). Complications were treated with symptomatic therapy. No difference of TPE complication rate between neurology and non-neurology cases ($p=0.696$). Positive clinical outcomes are primarily seen in neurology group disorders compared to non-neurology cases ($p<0.001$).
Conclusions : TPE is an effective treatment that can be safely used for pediatric patients with the correct indication espescially in neurology cases. However, since TPE has potential complications, it should be performed by experienced staff at a specialized center.

PHOTO-2024-01-29-21-22-38.jpg

Table. 1 Patient Characteristics

Characteristic	Value (n=32)
Age (years)	
Median	12
Range	1-17
Sex	
Female	65.6% (21)
Male	34.4% (11)
Indication	
Neurology	62.5% (20)
Renal	21.9% (7)
Pre/post-transplantation	9.4% (3)
Other	6.3% (2)
Filter	
1000	25.0% (8)
2000	75.0% (24)
Replacement	
Albumin 5%	71.9% (23)
Fresh Frozen Plasma (FFP)	3.1% (1)
Combination (Albumin+FFP)	25.0% (8)
Combination with other extracorporeal modalities	
CKRT	6.3% (2)
SLED	9.4% (3)
HD	12.5% (4)
Without combination	71.9% (23)

PHOTO-2024-01-29-21-22-38.jpg

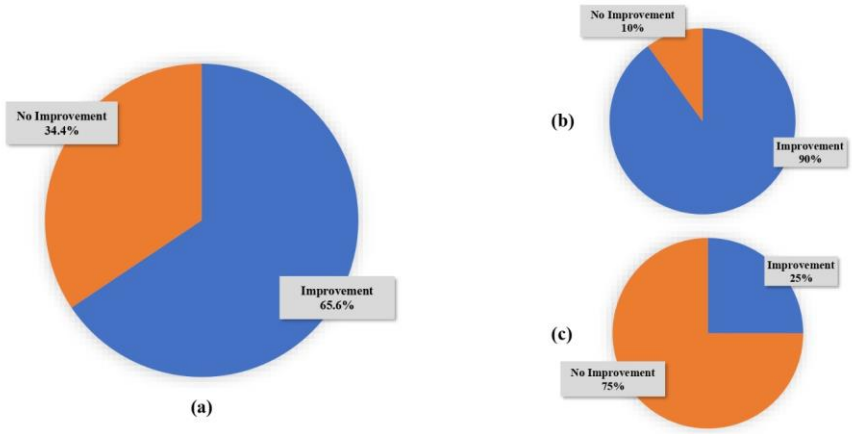

Figure 1. Outcome of Pediatric TPE. (a) Overall outcome (n=32). (b) Outcome in neurology cases (n=20). (c) Outcome in non-neurology cases (n=12)