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Oral Communication Abstract
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Nutritional intervention in intensive care unit patients undergoing continuous renal replacement therapy

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Objectives: Providing adequate calories and protein constitutes an important part of critical care, and inadequate nutrition for critically ill patients is associated with poor prognosis. Therefore, increased loss of amino acids, electrolytes, and water-soluble vitamins during continuous renal replacement therapy (CRRT) could be a therapeutic target. We evaluated whether enforcing protein, trace elements and vitamin supply could improve the prognosis of CRRT patients.

Methods: A nutritional intervention (100 mg/day of Thiamine, 25–30 kcal/kg of energy, 1.8 g/kg of protein, and 50–100 mcg/day of microelement with selenium) was conducted in patients subject to CRRT from May 2020 to December 2020. The primary outcomes were 28-day mortality, CRRT day, ICU stay, and ventilator-free day, and the outcomes before and after the intervention were compared.

Results: Total 88 patients were included during the study period and compared with 88 patients in the previous year. The average age was 68.05 years old, 56 (63.5%) patients were male. At day 1 APACHE-II score was 35.45±9.2, SAPS3 88.1±16.8, SOFA 10.4±2.7. There were 9 (10.2%) patients with ECMO, 78 (88.6%) using ventilator. There were 19 (21.6%) pneumonia with ARDS patient, 18 (20.5%) cardiac disease, 9 (10.2%) UTI sepsis, 11 (12.5%) gastrointestinal bleeding and sepsis, 6 (6.8%) cerebral hemorrhage, and others. The main reason for CRRT was hemodynamic instability. Baseline characteristics including APACHE-II score, SAPS 3, and SOFA were not significantly different between the nutritional intervention and the non-intervention patients. Nutritional intervention did not induce significant changes in 28-day mortality (36 versus 37, $p = 0.56$) and CRRT days (7.3 ± 6.9 versus 6.3 ± 5.2, $p = 0.29$).

Conclusions: This study suggests that support for protein, trace elements, and vitamins may have a positive effect in CRRT patients. Therefore, the nutritional requirements of patients with CRRT should be carefully assessed, individualized, and considered as an important axis of CRRT treatment.

Table primary outcome

Variables	Conventional (2019) n=88	Intervention (2020) n=88	p-value
Clinical outcome			
28 days Mortality, n (%)	36 (40.9%)	37 (42.0%)	0.564
Duration of CRRT, day (mean± SD)	7.32 ± 6.9	6.34 ± 5.2	0.29
Duration of ventilator, day (mean± SD)	17.84 ± 22.37	12.47 ±14.43	0.05
Length of stay, day (mean± SD)			
ICU stay	22.14 ± 23.9	20.74 ± 22.18	0.05
Total hospital stay	45.06 ± 40.13	41.33 ± 46.91	0.57