Mortality and Influence of Vasopressor Agent in Neonatal and Pediatric Septic Shock

Cristina Mangia1; Nilton Ferraro Oliveira1; Cintia Johnston1 ;Maria Cristina Andrade2
1Pediatric and Neonatal Intensive Care Unit at Escola Paulista de Medicina, Universidade Federal de São Paulo São Paulo, Brazil
2 Nephrology Division at Escola Paulista de Medicina, Universidade Federal de São Paulo São Paulo, Brazil

Objective: To clarify the impact of the choice of vasopressor support on mortality in pediatric septic shock (SS).

Methods: Retrospective study based on the institutional database analyzing patients admitted from January 2000 to January 2012. We studied children with septic shock after neonatal period admitted to the pediatric intensive care (PICU) and we assessed the vasopressor support in the first 24 hours, PICU and hospital (HSP) length of stay (LOS), number of vasoactive drugs used, association between drugs and HSP mortality.

Results: There were 140 consecutive patients with septic shock, mean age 41 months (95%CI 30 – 52 months); mean of PICU LOS 16.73 days (95%CI 11.18-22.28) and hospital LOS 55.46 days (95% CI 43.16-67.75). PICU mortality was 32% and HSP mortality after PICU discharge 10.8%. Of the 33% patients received dobutamine and 26% patients dopamine as only vasoactive drug. Dopamine plus dobutamine was used in 17.8%; dobutamine plus norepinephrine in 18% and dopamine plus norepinephrine 3.9%. The HSP mortality associated to dobutamine was 29.4%; dopamine 53.8%; dopamine plus dobutamine 50%; dopamine plus norepinephrine 25%. The dopamine and dopamine plus dobutamine groups had higher hospital mortality 66% vs.34%. Dopamine was associated with hypertensive state (odds ratio, 0.433; 95% CI 0.192-0.976; p=0.047); hypoxemia (odds ratio, 0.190;95%CI 0.040-0.909) and mechanical ventilation utilization ( odds ratio, 2.625;95% CI 1.085-6.327; p=0.035).

Conclusion: The adrenergic support for pediatric patients with septic shock, keep controversial. A prospective randomized controlled trial will be important to determine which subgroups of SS patients will benefit most with each drug.