Norepinephrine with dopamine infusion on the end-tidal carbon dioxide (ETco2) pressure in patients with septic shock

Background: Septic shock is a critical medical condition and immediate intervention is required as well as hemodynamic stability using fluid and vasopressor. Direct relationship between changes in ETco2 and changes in the cardiac output. We evaluated the study by comparing the effect of using norepinephrine or dopamine on ETco2 of patients with septic shock.

Methods: A clinical trial study was performed on 138 patients with primary diagnosis of septic shock. 70 patients received norepinephrine and 68 patients received dopamine. Patients' end tidal carbon dioxide (ETco2), mean arterial pressure (MAP), pulse rate (PR), arterial blood gas (ABG) levels in two groups were measured and compared at baseline and after 30 and 120 minutes after inotrope infusion. Variables were compared by means of an unpaired student t-test, an unadjusted chi-square test.

Results: 138 patients, 70 treated with norepinephrine infusion and 68 with dopamine infusion were included in the study. ETco2 level significantly increased within 120 minutes of treatment in the norepinephrine group (31.10 ± 9.65) compared to the dopamine group (23.71 ± 9.66) ($P=0.001$). MAP significantly decreased in the group of norepinephrine 30 minutes after treatment (71.71 ± 20.460) ($P=0.014$) and pulse rate also significantly decreased in the norepinephrine group compared to the dopamine group in 30 minutes (98.07 ± 10.63 vs 106.43 ± 13.54) and 120 minutes (91.15 ± 6.18 vs 103.51 ± 2057) after treatment ($P=0.001$).

Conclusion: Tissue perfusion and fluid responsiveness of the shock in the norepinephrine group showed improvement. Using ETco2 as a measure for determining volume assessment in patients undergoing mechanical ventilation by septic shock is applicable.