

신장 이식 수술을 위한 마취중에 비침습적 심박출량 모니터로 측정된 심박출량과 중심 정맥압의 비교

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Comparison of Central Venous Pressure with Cardiac Output Measured by Non-invasive Cardiac Output Monitoring During Anesthesia for Kidney Transplant Surgery

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Introduction: Patients with end-stage renal disease (ESRD) can be hemodynamically unstable because of frequent changes in peripheral resistance and blood volume during kidney transplant surgery. Cardiac output (CO) is a key variable when describing and treating the cardiovascular system. Thermodilution via a pulmonary artery catheter is the most frequently used method, but it lacks accuracy. Non-invasive cardiac output monitoring (NICOM) measures CO based on chest bioreactance. Validated data of NICOM in patients with kidney transplant surgery are lacking. So we compared central venous pressure (CVP) with cardiac output monitored via NICOM system during anesthesia for renal transplant surgery.

Methods: Stroke volume (SV) values using NICOM were recorded during anesthesia in patients with renal transplant surgery and CVP values were measured at the same time. The difference between measured and average values of CVP (Δ CVP) and SV (Δ SV) were calculated in each subject, because CVP values may be different depending on the person who measured. Correlation analysis was performed Δ SV with and Δ CVP.

Results: Twenty subjects were enrolled and the SV and CVP values were measured 100 times. There were positive correlation with Δ SV and Δ CVP ($R=0.61$, $p=0.00$, Fig. 1).

Conclusions: Stroke volume measured by NICOM and CVP showed a positive correlation. NICOM may be effective as non invasive method for circulating volume monitoring in patients with renal transplant surgery.

Key Words: 신장이식, NICOM, 중심 정맥압
Renal transplantation, NICOM, CVP

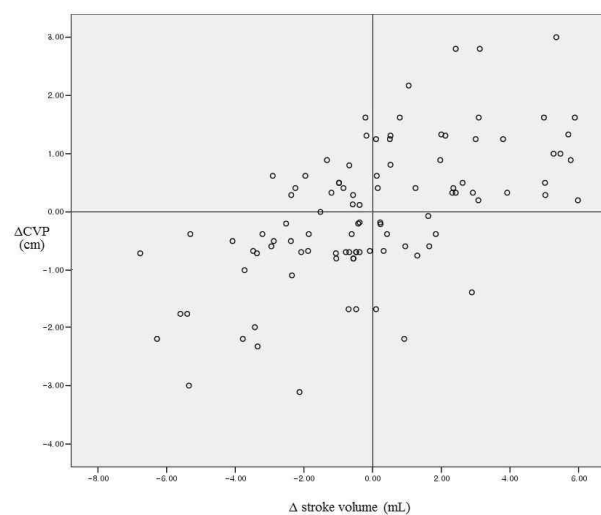


Fig. 1. The scatter diagram between Δ stroke volume measured by NICOM and Δ central venous pressure during anesthesia for kidney transplant surgery in patient with ESRD.