

## 신장 이식 수술의 마취 시에 비침습적 심박출량 모니터를 통한 변수 분석

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### Analysis of Variables in 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 bioimpedance. Validated data of NICOM in patients with kidney transplant surgery are lacking. So we had non-invasive cardiac output monitoring during anesthesia for renal transplant surgery.

**Methods:** CO values using NICOM were recorded during anesthesia in patients with renal transplant surgery due to ESRD. Correlation analysis were performed with variables measured 59 times from 20 subject.

**Results:** Stroke volume (SV) had strong negative correlation with total peripheral resistance (TPR) ( $R=-0.81$ ,  $p=0.00$ , Fig. 1). But SV had poor correlation with mean arterial pressure (MAP) ( $R=-0.26$ ,  $p=0.05$ ). And TPR had fair correlation with MAP ( $R=0.36$ ,  $p=0.01$ ).

**Conclusions:** Stroke volume and total peripheral resistance measured by NICOM showed a strong correlation in patients with renal transplant surgery. Additional studies in larger patient populations may be warranted for further validation.

**Key Words:** 신장 이식 수술 마취, NICOM,  
심박출량과 말초저항성  
Renal transplantation, NICOM,  
Stroke volume

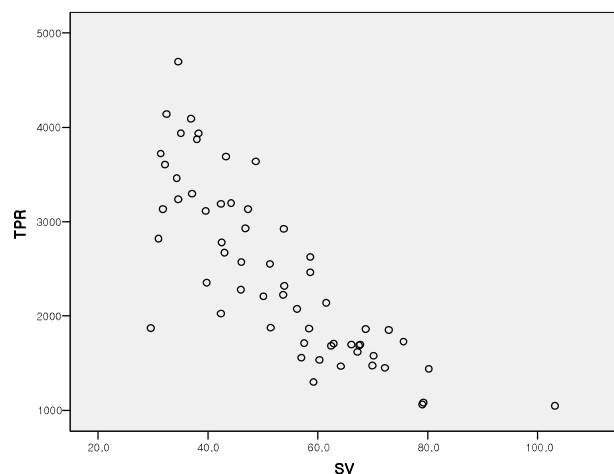


Fig. 1. The scatter diagram between stroke volume and total peripheral resistance measured by NICOM in patients with kidney transplant surgery.