

Accuracy of noninvasive blood pressure and cardiac output measurement during living kidney transplantation

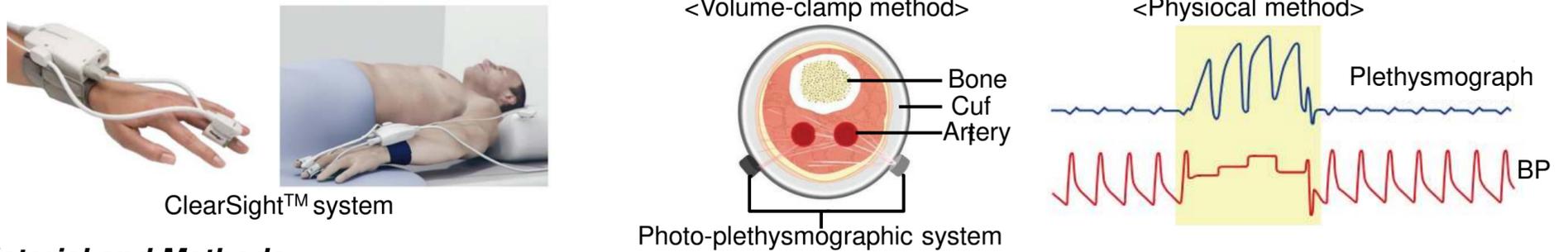


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<Background and Goal of study>

Perioperative low cardiac output (CO) and instability of blood pressure (BP) have been shown to be associated with poor clinical outcome in living kidney transplantation recipients.

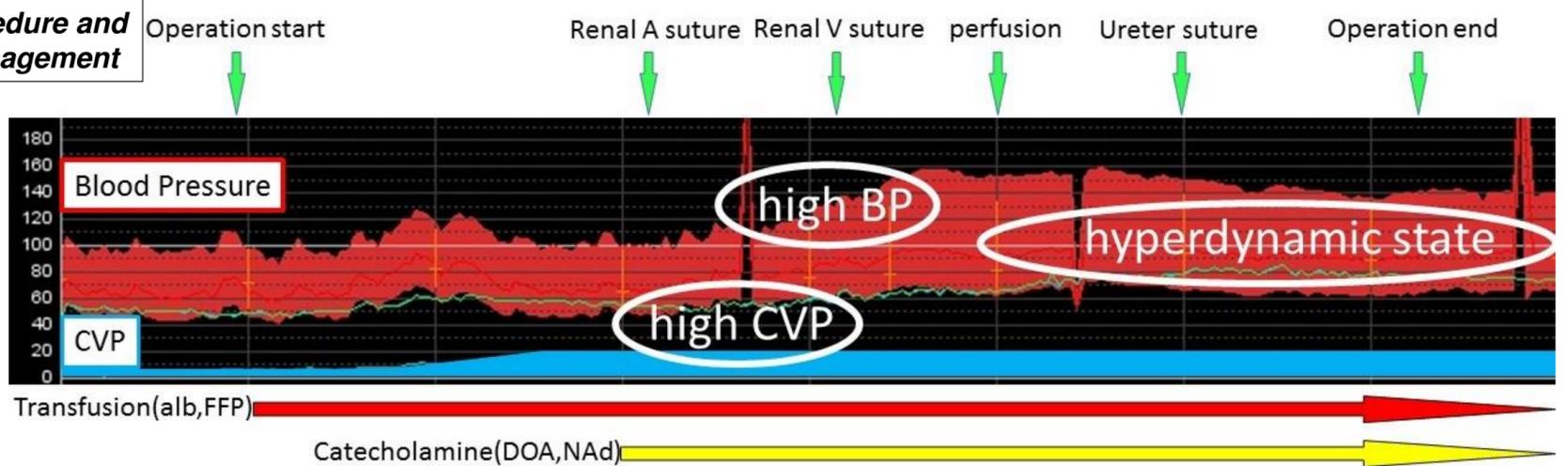
A new cardiovascular monitoring system based on the volume-clamp method (ClearSight™; Edwards Lifesciences Corp., Irvine, CA, USA), was developed to monitor the beat-to-beat BP, stroke volume (SV) and continuous CO (CCO) noninvasively. We assessed the accuracy of BP and CO measured by the ClearSight™ system, compared to an invasive monitoring system (FloTrac™; Edwards Lifesciences Corp.) during living kidney transplantation.



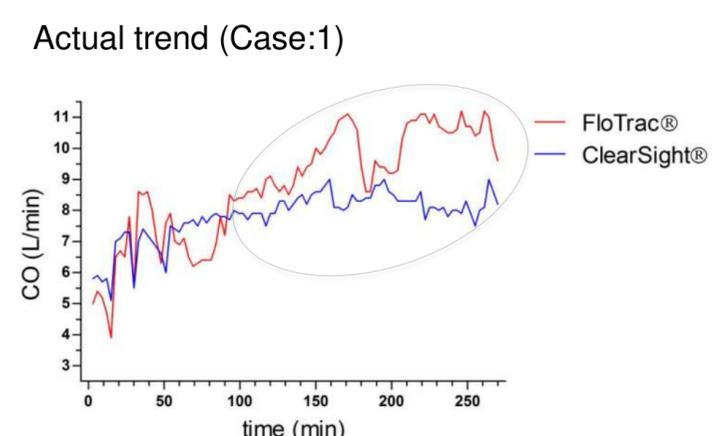
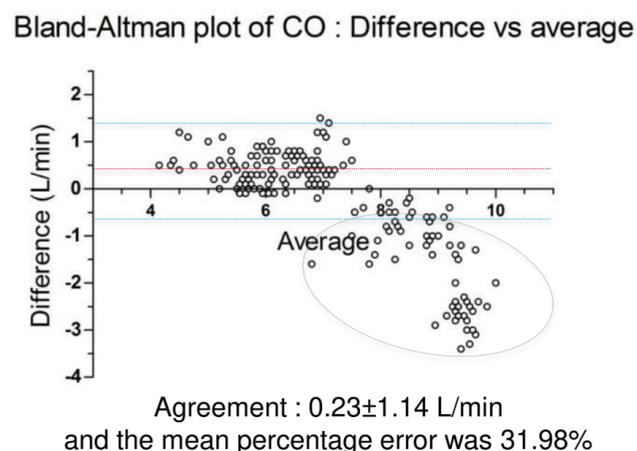
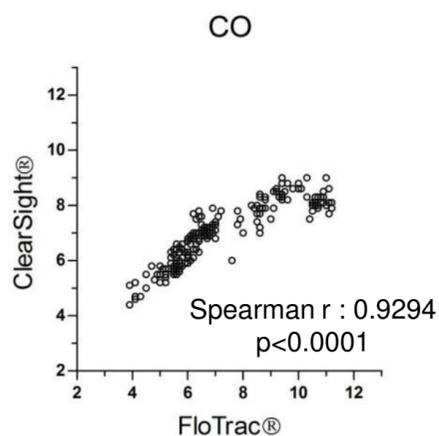
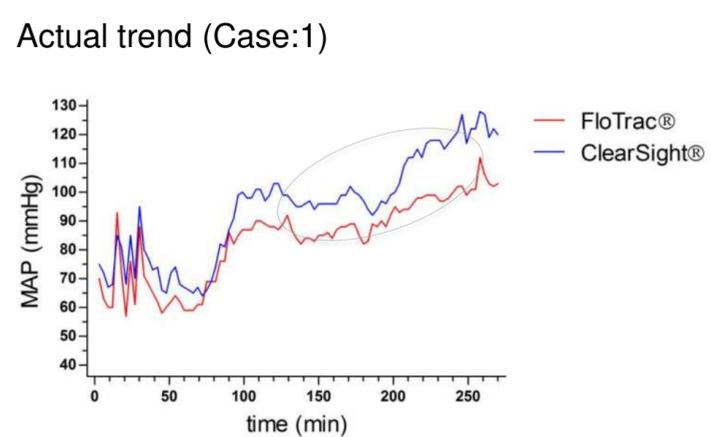
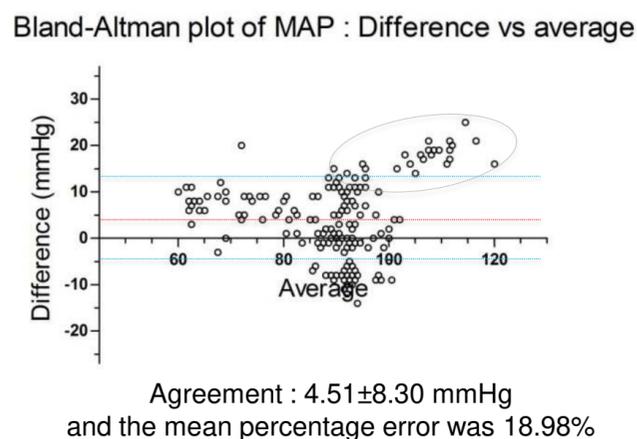
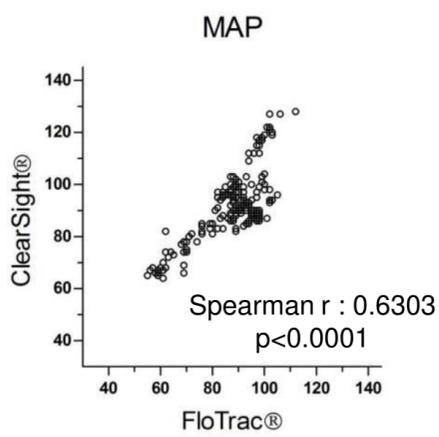
<Material and Methods>

Two recipients undergoing kidney transplantation were included in this study. We extracted the value of mean arterial pressure (MAP) and CO every 3 minutes, simultaneously using FloTrac™ (MAP_{FT} and CO_{FT}, respectively) and ClearSight™ (MAP_{CS} and CO_{CS}, respectively). In total, we obtained 197 points of consecutive data from 2 patients (patient1: 90 points, patient2: 107 points). Data were statistically analyzed by using the Spearman's rank-correlation coefficient and the Bland-Altman analysis.

Operation procedure and anesthetic management



<Results and Discussion>



<Conclusion>

The value of MAP and CO measured by ClearSight™ system and FloTrac™ are related to positive correlation statistically. However, parameters of ClearSight™ was unstable in the hyperdynamic state. Further research is needed to confirm ClearSight™ system can be reliable monitor during living kidney transplantation.