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Effect of Anti-embolism Stocking on Intrasession Hemodynamics in ESRD Patients on Hemodialysis

Seoung Woo Lee, Ok Ja Cho, Soo Hyun Kwon, Wook Hyun Um
Seung Won Lee, Joon Ho Song, Moon Jae Kim

Inha University College of Medicine, Dept. of Internal Medicine
Division of Nephrology and Hypertension Kidney Disease Research Group

Purpose : Lower limb wrapping seems to prevent hypotension after epidural anesthesia for cesarian delivery. However, there is no data about the effect of lower limb wrapping on intrasession hemodynamics in ESRD patients on hemodialysis (HD). We investigated whether anti-embolism stocking affects on the hemodynamic changes during HD or not.

Method : We performed 2 HD sessions, before (SN) and after wearing thigh-high anti-embolism stocking (SP) in 11 ESRD patients on HD. In each session, cardiac output (CO), central blood volume (CBV), and total peripheral resistance (TPR) were measured by ultrasound velocity dilution method at 1 and 3 hours of HD. Ultrafiltration (UF) amount was matched during study. Mean values of 2 sessions at 1 and 3 hours of HD were used to compare the difference between SN and SP.

Results : Mean ages were 51+/-14 years, female was 8, diabetes mellitus was 4, and duration of HD was 56.9+/-28.9 months. There were no differences in pre- and post-HD SBP and DBP, UF amount at 1 hr and 3 hr of HD, and total UF amount between SN and SP. In SN, TPR showed 7.0+/-23.0% of increase at 3 hour, compared to that at 1 hour. In SP, TPR showed 16.4+/-28.1% of increase at 3 hour, compared to that at 1 hour. After SP, 8 showed more increase of TPR at 3 hours, compared to that at 1 hour (24.6+/-28.0 vs. 7.3+/-25.4%, p=0.02) but 3 were decreased from 6.3+/-19.5% to -5.6+/-13.8% (p=0.10). However, there were no differences in CO and CBV between SN and SP.

Conclusion : Although anti-embolism stocking seems to increase TPR, it might not affect the decrease in CO and CBV during HD.