The Evaluation of New Index for Blood Pressure Variability Using Posture Change Among Older Fallers.
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Abstract

While postural hypotension has long been considered a risk factor for falls, there is currently no documented evidence on the relationship between blood pressure variability (BPV) and falls. A case-controlled study involving 25 fallers and 25 non-fallers was conducted to evaluate the utility of BPV calculated using previously published and newly introduced index using the variables falls and age as comparators. Systolic (SBPV) and diastolic blood pressure variability (DBPV) were assessed using three indices: standard deviation (SD), average real variability (ARV), and standard deviation of real variability (SDRV). Continuous beat-to-beat blood pressure was recorded during ten minutes' supine rest and three minutes' standing. Standing SBPV was significantly higher than lying SBPV using three indices in both groups. The standing to lying BPV ratio (SLR) was then computed for each subject (SD, ARV, and SDRV). Standing to lying ratio for SBPV was significantly higher among fallers compared to non-fallers using SDRV (p = 0.025). This study suggests that SLR SBPV using SDRV is a potential predictor for falls among older patients, and deserves further evaluation in larger prospective studies.

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