Interim Analysis of FImasartan on blood pressure vaRiability in acute STroke (FIRST) study

[1]Dong Hoon Shin, MD., [2]Soohwa Song, PhD., [1]Young-Bae Lee, MD.
[1]Department of Neurology, Gachon University Gil Medical Center, Incheon, South Korea
[2] Department of biomedical engineering, Gachon University of Medicine and Science, Incheon, Korea

가천대 길병원 Gachon University Gil Medical Center

Background

●Increased blood pressure (BP) variability is associated with increased evidence of target organ damage in the elderly and hypertensive populations and with cardiovascular morbidity and mortality.

● Higher BP variability (BPV) is associated with poor functional outcome and mortality in acute stroke.

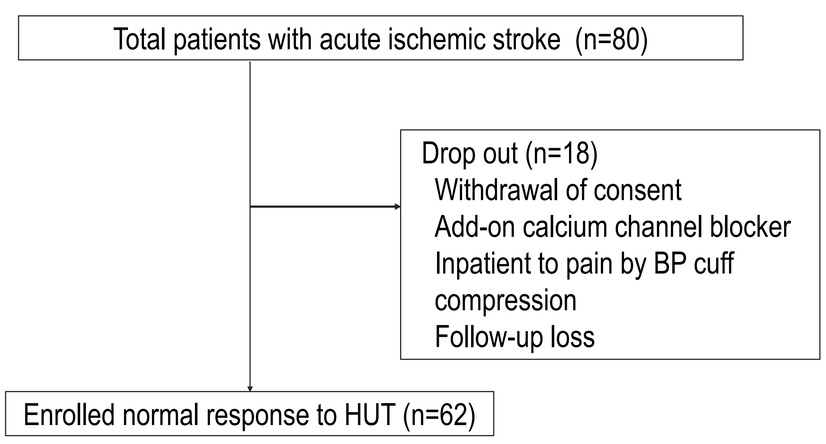
Purpose

● This randomized controlled trial was conducted to compare the effect on BP variability between valsartan and fimasartan (Boryung Pharmaceutical Co., Ltd, Seoul, Republic of Korea) in acute ischemic stroke patients.

Methods

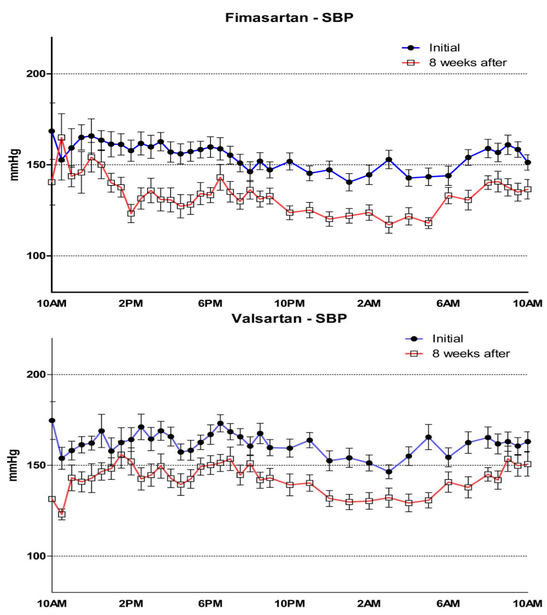
●We enrolled 80 patients with acute ischemic stroke prospectively after informed consent. Patients were randomly assigned to receive either valsartan (n=31) or fimasartan (n=31) after 7 days after acute ischemic stroke onset for 8 weeks. We measured 24 hours BP using ambulatory BP monitoring device at before and after 8 weeks starting BP medication. We calculated several indexes such as standard deviation (SD), weighted 24-hour BP SD (wSD), coefficient of variation (CV), average real variability (ARV), and smoothness index (SI) to assess BP variability and compared the indexes of BP variability between two drugs.

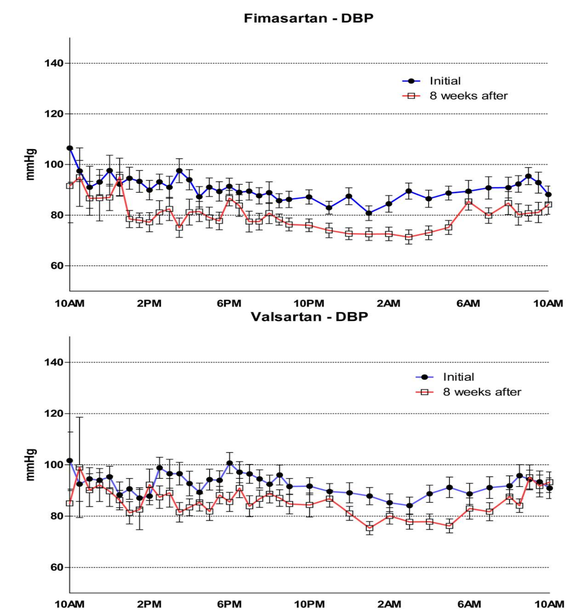
Figure 1. Flow diagram of study

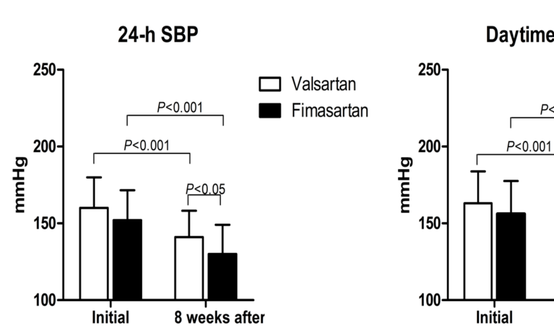


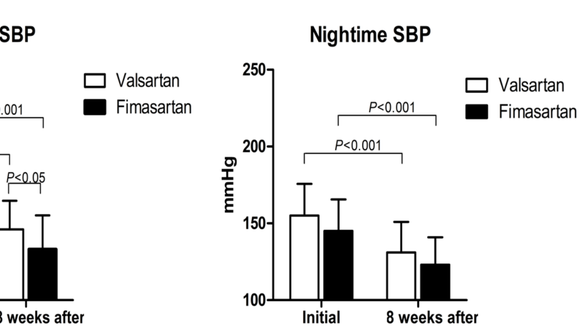
Results

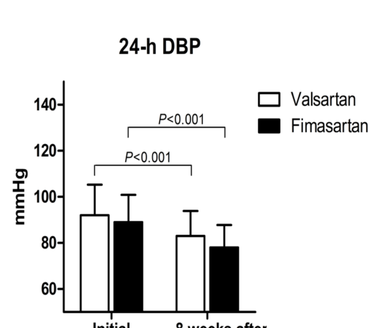
● SD of systolic BP in daytime, nighttime, and 24-h (15.55±4.02 vs. 20.55±8.77, P=0.006; 11.98±5.52 vs. 16.47±6.94, P=0.007; 17.22±5.30 vs. 21.45±8.51, P=0.024, respectively) and wSD of systolic BP (8.27±3.01 vs. 10.77±4.18, P=0.010) and ARV of systolic BP (15.85±6.17 vs. 19.68±7.83, P=0.040) of patients receiving fimasartan after 8 weeks were significant lower than patients receiving valsartan. In paired t-test, SD of daytime, nighttime, and 24-h of systolic BP of patients receiving fimasartan were significantly decreased after 8 weeks (15.55±4.02 vs. 18.70±7.04, P=0.038; 11.98±5.52 vs. 17.19±7.35, P=0.006; 17.22±5.30 vs. 20.59±5.91, P=0.015).

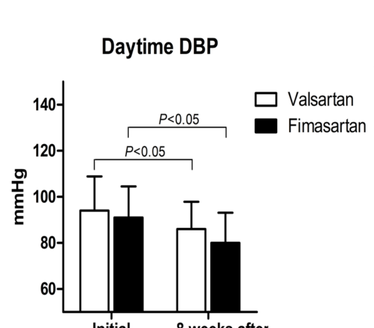


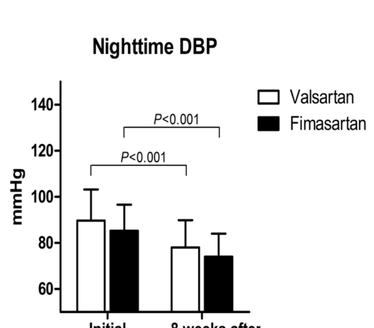


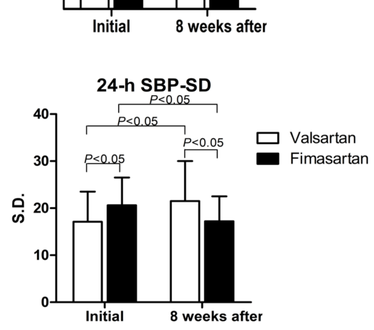


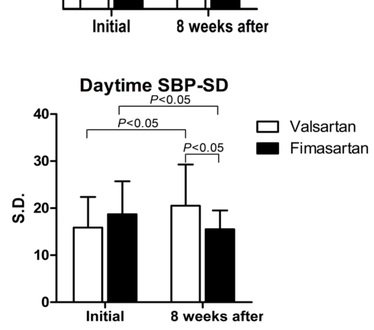


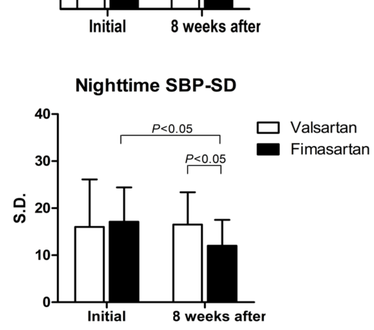


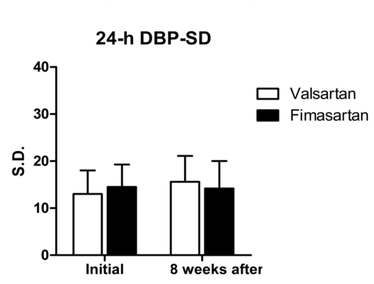


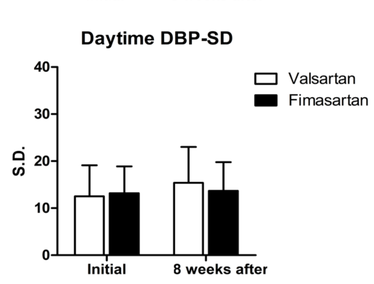


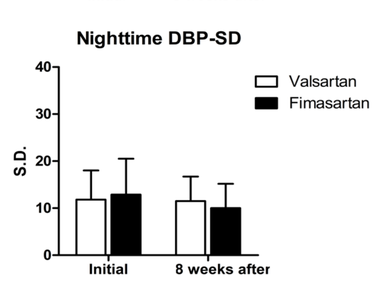


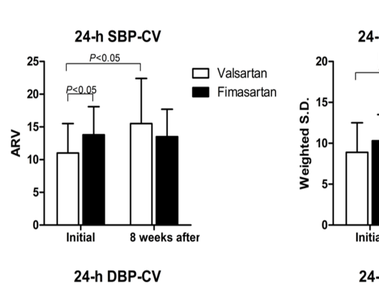


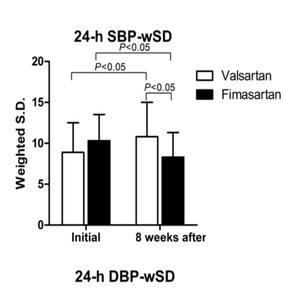


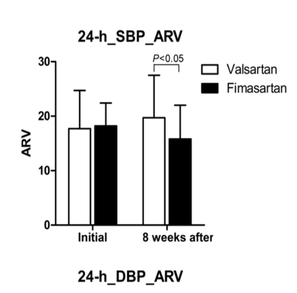


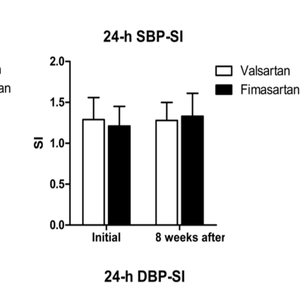


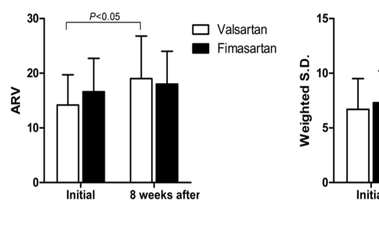


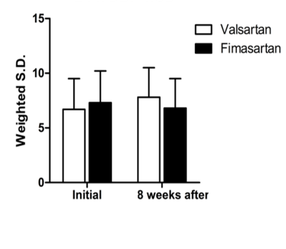


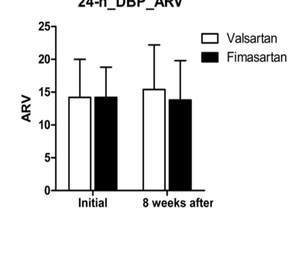


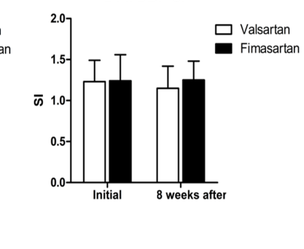












Conclusion

● Fimasartan can improve short-term BPV measured by ABPM after acute ischemic stroke although the classification of fimasartan is ARB. The effect of fimasartan on reducing daytime and 24-h SBP more than valsartan and reducing short-term BPV could have positive effects on secondary stroke prevention shown by recent systemic analysis data.

● We can deduce that treatment with fimasartan for acute ischemic stroke patient with high short-term BPV could be beneficial.

Gachon University Gil Hospital NEUROLOGY

가천대 길병원 Gachon University Gil Medical Center