



Apelin polymorphism predicts blood pressure response to losartan in older Chinese women with essential hypertension

J. Jia*, C. Men*, K.-T. Tang and Y.-Y. Zhan

Geriatric Medicine Department,
The First Affiliated Hospital with Nanjing Medical University,
Nanjing City, Jiangsu Province, China

*These authors contributed equally to this study.

Corresponding author: Y.Y. Zhan

E-mail: yiyangzhan@sina.com

Genet. Mol. Res. 14 (2): 6561-6568 (2015)

Received October 10, 2014

Accepted February 2, 2015

Published June 12, 2015

DOI <http://dx.doi.org/10.4238/2015.June.12.10>

ABSTRACT. We determined whether the blood pressure response to losartan in an older Chinese population with essential hypertension was associated with apelin gene polymorphisms. We genotyped the -1860T>C polymorphism of the apelin gene in a case-control study of 222 patients with hypertension and 250 controls. Following 24 weeks of treatment with losartan (50 mg/day), reductions in systolic blood pressure were significantly different among the additive (CT vs CC vs TT), dominant (TT vs CC/CT), and recessive models (CC vs CT/TT; all $P < 0.05$) in women but not in men. In the additive model, the TT group showed the greatest reductions in systolic BP (23 ± 10 mmHg) after treatment. The CT group showed greater reductions in systolic BP (21 ± 11 mmHg) compared to the CC group (8 ± 3 mmHg) ($P < 0.05$). The reductions in systolic BP of the TT and CT/CC groups were 23 ± 10 and 19 ± 10 mmHg, respectively. The reductions in systolic BP of the CC and TT/CT groups were 8 ± 3 and 21 ± 10 mmHg, respectively. After adjustment for confounding factors, quantitative trait analysis with a

general linear model showed that the female patients with TT genotype showed greater reductions in systolic blood pressure after 24 weeks of treatment compared to the patients with the C allele ($P < 0.05$). The apelin -1860T>C genotype may play an important predictive role in the response to losartan in hypertensive women.

Key words: Apelin; Polymorphism; Losartan; Hypertension; Chinese