G-395A polymorphism in the promoter region of the KLOTHO gene and hypertension among elderly (90 years and older) Chinese individuals

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ABSTRACT. The aim of this study was to examine the possible associations between the KLOTHO G-395A gene polymorphism and hypertension in Chinese nonagenarians and centenarians. The G-395A (rs1207568) in the promoter region of the KLOTHO gene was genotyped using a standard TaqMan allelic discrimination assay. We included 710 participants aged 93.5 ± 3.2 years in the analyses. The expression of the A allele of the KLOTHO G-395A polymorphism was significantly downregulated in the hypertension group compared to the control group (0.137 vs 0.200, P < 0.001). The genotype distribution of the G-395A polymorphism between the hypertension and control groups was significantly different in women and smokers, and not in men or non-smokers. The mean systolic blood pressure, percentage of hypertension, and percentage of isolated systolic hypertension was significantly higher in the group with the GG genotype compared to the GA+AA genotype. Subjects expressing the GA+AA genotype demonstrated a significantly lower risk of hypertension even after adjusting for age, gender, and other relevant risk factors compared to the population expressing the GG genotype (odds ratio, 0.68; 95% confidence interval: 0.49 to 0.95). The -395A allele of the
KLOTHO gene may be a protective genetic factor for hypertension in the Chinese population.

Key words: KLOTHO gene; Hypertension; Single nucleotide polymorphism