Association of AGTR1 gene A1166C polymorphism with the risk of heart failure: a meta-analysis

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ABSTRACT. The aim of this study was to investigate the correlation between the A1166C polymorphism in the angiotensin II type 1 receptor (AT1R) gene and heart failure (HF) risk using meta-analysis. The PubMed database was searched, and data were extracted independently by two reviewers. Odds ratios (ORs) with corresponding 95% confidence intervals (CIs) were used to assess the strength of the associations. Statistical analysis was performed using the STATA 12.0 software. The results of the meta-analysis showed no significant association between the AT1R A1166C polymorphism and HF risk (AA vs CC: OR = 0.72, 95%CI = 0.31-1.68; AA vs AC: OR = 0.78, 95%CI = 0.52-1.18; dominant model: OR = 1.37, 95%CI = 0.92-2.04; recessive model: OR = 0.73, 95%CI = 0.30-1.75). In the subgroup analysis by ethnicity, the results also showed no significant association between A1166C polymorphism and susceptibility to HF in both Caucasian and Asian populations. In conclusion, this meta-analysis suggests that the A1166C polymorphism in AT1R may not be associated with susceptibility to HF.
Further large and well-designed studies are needed to confirm these conclusions.

**Key words:** AT1R; Gene polymorphism; Heart failure; Meta-analysis