**МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ**
**СУМСЬКИЙ ДЕРЖАВНИЙ УНІВЕРСИТЕТ**
**ФАКУЛЬТЕТ ІНОЗЕМНОЇ ФІЛОЛОГІЇ**
**ТА СОЦІАЛЬНИХ КОМУНІКАЦІЙ**

# СОЦІАЛЬНО-ГУМАНІТАРНІ АСПЕКТИ РОЗВИТКУ СУЧАСНОГО СУСПІЛЬСТВА

МАТЕРІАЛИ V ВСЕУКРАЇНСЬКОЇ НАУКОВОЇ КОНФЕРЕНЦІЇ СТУДЕНТІВ, АСПІРАНТІВ, ВИКЛАДАЧІВ ТА СПІВРОБІТНИКІВ

**(Суми, 20-21 квітня 2017 року)**

**Суми**
**2017**

# ASSOCIATIONS BETWEEN HUMAN ALDOSTERONE SYNTHASE (CYP11B2) GENE POLYMORPHISMS AND LEFT VENTRICULAR SIZE, MASS, AND FUNCTION

*Post graduate student,* Khirniy D. V.
*Sumy State University, Medical Institute, Sumy, Ukraine*
*Internal Medicine Department of Post-graduation Education*
*Supervisor: the Head of the Department,*
*M.D. Professor of Internal Medicine* Prystupa L. N.,
Dunaeva M. N.

**Introduction:** Aldosterone has direct and indirect effects on the heart, and genetic variations in aldosterone synthesis could therefore influence the cardiac structure and function. Such variations might be associated with polymorphisms in the gene encoding aldosterone synthase (CYP11B2), the enzyme catalyzing the last steps of aldosterone biosynthesis.

**Methods:** Ukrainian population sample of 64 persons (34 women) aged 66 to 77 years was studied by M-mode and Doppler echocardiography to assess left ventricular size, mass, and function. Subjects were genotyped through the use of the polymerase chain reaction for T344>C gene CYP11B2 polymorphism.

**Results:** In multiple regression analyses, the CYP11B2 T/C genotype predicted statistically significant variations in left ventricular end-diastolic diameter (β=.40, P<.0001), end-systolic diameter (β=.33, P=.0009), and mass (β=.17, P=.023). These effects were independent of potentially confounding factors, including sex, body size, blood pressure, physical activity, smoking, and ethanol consumption. Genotype groups also differed in a measure of left ventricular diastolic function, the heart rate–adjusted atrial filling fraction (P=.018). Increased dietary salt, which is known to predict increased left ventricular mass, had this effect only in association with certain CYP11B2 genotypes (P<.001).

**Conclusions:** Genetic variations in or near the aldosterone synthase (CYP11B2) gene strongly affect left ventricular size and mass in young adults free of clinical heart disease. These polymorphisms may also influence the response of the left ventricle to increase in dietary salt.