Abstract: P370
endothelin-1 gene lys198asn polymorphism in men with essential hypertension complicated and uncomplicated with chronic heart failure

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Background. Today, the structural state of the endothelin-1 gene (ET-1) attracts considerable attention, which scientists consider as a possible genetic marker of essential hypertension (EH) and chronic heart failure (CHF) on its background. One of the least investigated from this point of view is the single-nucleotide polymorphism of the ET-1 gene, which leads to the replacement of the amino acid of lysine (Lys) with asparagine (Asn) at position 198 of the polypeptide chain (Lys198Asn), and in Ukraine it has not been studied at all.

Purpose. To improve prognosis of development and diagnosis of severity of EH and CHF that its complicates in men residents of Podillia region in Ukraine 40-60-years-old by determination of Lys198Asn polymorphism of ET-1.

Methods. The study involved 62 people who have been diagnosed with uncomplicated EH 2-3 stages with left ventricular hypertrophy (LVH) with preserved left ventricular systolic function average age 49.19±0.66 years old and 50 males mean age - 50.14±0.99 years old with EH complicated CHF II-III classes according to NYHA Classification. 79 men were in the control group (49.01±0.73 years old) without any evidence of cardiovascular diseases. All patients performed general laboratory tests, ECG, ultrasound of the heart.

Results. It is determined that men from the control group have genotype Lys198Lys in 65.82% (n=52), genotype Lys198Asn - 27.85% (n=22) and genotype Asn198Asn - 6.33% (n=5) (PLys/Asn-Lys/Lys<0.0001;pAsn/Asn-Lys/Lys<0.0001;pAsn/Asn-Lys/Asn<0.001). It is found that men with uncomplicated EH with LVH have genotype Lys198Lys in 56.45% (n=35), genotype Lys198Asn - 33.87% (n=21), genotype Asn198Asn 9.68% (n=6) (PLys/Asn-Lys/Lys<0.01;pAsn/Asn-Lys/Lys<0.0001;pAsn/Asn-Lys/Asn<0.001). Men with EH complicated with CHF have genotype Lys198Lys in 66.00% (n=33), Lys198Asn - 28.00% (n=4), Asn198Asn - 6.00% (n=3) (pLys/Asn-Lys/Lys<0.0001;pAsn/Asn-Lys/Lys<0.0001;pAsn/Asn-Lys/Asn<0.01). It is identified that the most common genotype of ET-1 in men living in Podillia region in Ukraine is Lys198Lys. There is no significant difference between the frequency of different genotypes between research groups (p>0.05). ET-1 genotype is not associated with the risk of uncomplicated EH with LVH (general model imitiation is not significant ?2=1.87; p=0.39; odds ratio OR<1) and complicated with CHF (general model imitiation is not significant ?2=0.01; p=1; odds ratio OR<1).

Conclusions. In men residents of Podillia region in Ukraine 40-60-years-old from all research groups dominants genotype Lys198Lys of ET-1 and any of genotypes is not associated with the risk of development of uncomplicated EH with LVH and EH complicated with CHF.