Endocrine Abstracts

May 2016 Volume 41
ISSN 1479-6848 (online)

18th European Congress of Endocrinology 2016

28–31 May 2016, Munich, Germany

published by
bioscientifica

Online version available at
www.endocrine-abstracts.org

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Volume 41
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EP573

The influence of α-lipoic acid to endothelial dysfunction and adipokines balance in patients with type 2 diabetes and essential hypertension in the presence of unfavorable genetic polymorphism

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The aim
To establish unfavorable genetic polymorphisms on the development of comorbidity of DM2 and EH in Ukrainian population and to evaluate the effectiveness of α-lipoic acid appointment (α-LC) in complex therapy in patients with 3-4 crossed unfavorable genetic polymorphisms.
The primary examination of 167 patients with DM2 in combination with EH showed that A/C and C/C genotypes of AGTR1, Pro/Pro genotype of PPARγ_2, Arg/Arg and Gly/Arg genotypes of IRS-1, T/T and C/T genotypes of TCF7L2 are characterized by more severe hemodynamic and metabolic disorders, cardiovascular remodeling, thus, these genotypes can be regarded as unfavorable genotypes that are associated with the development of comorbidity. It was proved that in 96 patients with 3–4 crossed unfavorable genetic polymorphisms the severity of these disorders was greater than in 71 patients with 1-2 crossed unfavorable genotypes. Among 96 patients with 3–4 crossed unfavorable genetic polymorphisms two groups were distinguished: 47 patients received standard therapy and 49 patients additionally received α-LC (600 mg/day) for 3 months. It was established that the appointment of α-LC contributed to a more pronounced effect on endothelial dysfunction (ED) that confirmed a greater degree of endothelium-dependent vasodilation and higher levels of oxidative indicators stress (diene conjugates and malondialdehyde) in the inhibition of antioxidant system parameters (superoxide dismutase and catalase) ($P<0.001$). Furthermore the additional appointment of α-LC impacted more to the functioning of adipose tissue, which showed a more pronounced decrease in leptin ($P<0.001$) and increase in adiponectin ($P<0.01$), compared to basic therapy.
Conclusions
A/C and C/C genotypes of AGTR1, Pro/Pro genotype of PPARγ_2, Arg/Arg and Gly/Arg genotypes of IRS-1, T/T and C/T genotypes of TCF7L2 are associated with the development of comorbidity of DM2 and EH. The additional α-LC appointment to standard therapy impacted more to the severity of ED and adypokines balance than basic therapy.

DOI: 10.1530/endoabs.41.EP573