

**THE ADVANTAGES OF APPLICATION OF LINEN SEEDS
(LINUM USITATISSIMUM L.) FOR TREATMENT
OF ANGINA PECTORIS AND HYPERTENSION**

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Introduction. Nowadays treatment of diseases of cardio-vascular system is still important problem, because the number of cardiologic patients increases. Angina pectoris (AP) and hypertension (HT) are one of the most widespread diseases of cardio-vascular system. Modern medicine has a lot of drugs for treatment of AP and HT. But the development of great number of side effects and very often tolerance in case of long-term use of these medicines take place. All of this requires stop of drug intake. In such a case medicinal plants, particularly Linen seeds, may be used as alternative and/or supplement method of AP and HT treatment. The complex of biologically active substances of Linen (*Linum usitatissimum* L.) seeds and pharmacological effects, produced by this plant, allow to apply it for treatment of named diseases.

Aim. To indicate the effectiveness and prospects of creation and use of medicines, obtained from Linen seeds, for treatment of AP and HT, on the base of analysis of information from scientific literature and internet resources.

Results and discussion. Effectiveness of Linen seeds is explained by their complex of biologically active substances. So, Linen seeds are rich in plant fats, especially polyunsaturated (or essential) fatty acids ω -3 and ω -6. These substances are currently of great importance. Besides this, Linen seeds contain vitamins (A, B, E, P), mucus, proteins, phytosterides, glycoside linamarine, macro- and microelements (K, Ca, Mg, Na, Fe, P, Mn, Cu, Se, Zn). Due to this complex of biologically active substances Linen seeds cause different pharmacological effects, for example, vasodilative and hypotensive, hypolipidemic, anti-anginal, anti-aggregant effect. Exactly these therapeutic effects are useful for treatment AP and HT. It was interesting to clarify the mechanism of this actions of Linen seeds. As a result of analysis of scientific articles and internet-resources, we concluded that the main mechanism of Linen seeds action is connected to the presence of unsaturated fatty acids (ω -3 and ω -6) in their chemical composition. Hypotensive and anti-anginal effects arise from the pharmacological properties of these acids. After coming to human body, these agents (with assistance of cyclooxygenase enzymes) convert to prostaglandins which cause vasodilation. Besides, these acids bind to cell membranes of blood vessels, organs and affect the functions of K^+/Na^+ -channels, inhibit the input of calcium ions to myocytes. Also found, that ω -3 and ω -6 fatty acids affect the angiotensin and catecholamine-dependent vasospastic effect. They eliminate such an influence, that is very important for hypotensive effect development. To several scientists opinion, anti-anginal effect of named acids is explained by dilation of coronary vessels, normalization of circulation and increase of blood supply to myocardium.

Conclusions. One of the new and prospective method of treatment in cardiology is use of agents, that are modulators of endogenous regulatory substances production in human body (for example, eicosanoids, particularly prostaglandins). It is proved that polyunsaturated fatty acids ω -3 and ω -6 take part in regulation of prostaglandin synthesis. Thus, the application of Linen seeds (as a rich source of ω -acids) for creation of new modern cardiologic medicines, especially containing purified fraction of named acids, is theoretically and practically important and may improve the effectiveness of AP and HT pharmacotherapy.