

# THE METABOLIC AND RENAL EFFECTS OF GOUTWEED PREPARATIONS AND METFORMIN ON THE MODEL OF DYSLIPIDEMIA

Mishchenko M. V.<sup>1</sup>

Scientific supervisors: ass. prof. Tovchiga O. V.<sup>1</sup>, ass. prof. Gorbach T. V.<sup>2</sup>

<sup>1</sup>National University of Pharmacy, Kharkiv, Ukraine

<sup>2</sup>Kharkiv National Medical University, Ukraine

farmacol@nuph.edu.ua

**Introduction.** Much efforts are directed towards the improvement of the therapy of metabolic syndrome and type 2 diabetes. Dyslipidemia is an important link of their pathogenesis and thus an important target of therapy. Combined use of the herbal medicines and conventional drugs is of current interest. Our research focuses on the preparations obtained from goutweed (*Aegopodium podagraria* L., GW). This perennial herb of the Apiaceae family has been used in folk medicine for a long time and consumed as vegetable. GW tincture renders antidiabetic activity on the several models, while GW extract is effective in alloxan-induced diabetic mice. It also has been shown that the tincture is able to increase the efficacy of metformin.

**Aim.** The aim of this work is to estimate efficacy of *Aegopodium podagraria* L. tincture and the extract, as well as their combinations with metformin, in animals with the primary disorders of lipid metabolism.

**Materials and methods.** Combined use of atherogenic diet and protamine sulfate administration was applied. GW extract and the tincture were used at doses effective in previous studies, per se or combined with metformin at a low dose. Lipid metabolism values were determined in liver and blood plasma. Uricemia was measured. Since hyperlipidemia as well as protamine sulfate are able to induce nephrotoxicity, the status of the excretory renal function was determined under the conditions of water loading.

**Results and discussion.** Previously it has been shown that the tincture exerts a permissive effect on metformin normoglycemic activity but such phenomena were not observed in regard to lipid exchange. All the drugs studied were able to partially normalize the lipid composition of the liver still the lipid metabolism values in blood plasma remained unchanged. Uricemia was significantly decreased in animals treated with the tincture per se. The combination of the tincture with metformin appeared to exert an antiproteinuric effect which was not seen in other experimental groups.

**Conclusion.** Combined use of GW tincture and metformin in dyslipidemic animals does not eliminate the positive effects of these drugs on lipid metabolism, and no signs of toxicity enhancement are observed. Antiproteinuric effect is an additional advantage of GW tincture and metformin combination.