EVALUATION OF AGGREGANT PROPERTIES OF STACHYDRINE ALKALOID

V. N. Axmedov, R. A.Botirov, Z. A. Khushbaktova, A. Z. Sadykov, Sh. Sh. Sagdullaev

Acad. S. Yu. Yunusov Institute of the Chemistry of Plant Substances, Academy of Sciences of the Republic of Uzbekistan, e-mail: vokhidzhon.akhmedov.1984@mail.ru

The Central Asian flora is rich of wild medicinal plants, one of them is *Capparis spinosa* (caper), Capparidaceae, growing in Zhizzakh, Tashkent and other regions of Uzbekistan. This plant contains alkaloids such as stahydrine, choline, and flavonoids.

The relatively few publications on the stahydrine influence on blood clotting were issued before so we started work on a more detailed study of its effect on blood clotting and overall pharmacological properties.

Acute toxicity study was performed on white mice of both sexes weighing 18–21 g. The investigated stahydrine bases were administered intravenously at doses of 250, 500 and 1000 mg/kg. After a single administration of substances the animal state was monitored hourly during the day of administration, three times per a day for 2–3 days and once per a day in the subsequent 14 days of the experiment. It was not noted any changes in behavior, the state of mucous membranes, breathing, heart rate, motor activity, and the death of the mice. As a dose of 1000 mg kg refers to the group of non-toxic compounds, we not considered testing of higher doses of drugs as necessary. Due to the absence of dead animals, the LD_{50} calculations were proved impossible.

The Institute is working on the creation and development of an industrial technology of stahydrine. Preliminary studies have shown that technological sample of stahydrine for its purity and acute toxicity corresponds to the chemical sample.

The influence of stahydrine on the blood clotting was investigated *in vitro* and *in vivo*. Experiments were carried out on rabbits and rats. The whole blood clotting time was examined by Lee and White method, blood tolerance to heparin - by Sirman, re-calcification time was determined by the method of plasma Bergergof and Roka micromethod, thrombin time, prothrombin time - by Quick.

Studies have shown that intravenous administration of the stahydrine technological sample to rabbits (2.8–3.2 kg) at a dose of 10 mg/kg (control group of animals was injected in equivolume amount of solvent) increases the whole blood clotting for 22, 5% (by the method of Lee and White). In addition to the clotting time shortening in the whole blood, there was a decrease of plasma re-calcification time by 20.8%. There was a reduction of thrombin and prothrombin time, increasing of plasma tolerance to heparin on 15.6%.

Thus, the preliminary results indicate that stahydrine is low toxic compound and promotes the process of blood coagulation.

60 years anniversary

Acad. S.Yu. Yunusov Institute of the Chemistry of Plant Substances AS RUz

12th International Symposium on the Chemistry of Natural Compounds

ABSTRACTS

September 7-8, 2017
Tashkent, Uzbekistan