

THE RESULT OF “GASTROVIT” PREPARATION INFLUENCE ON BIOELECTRICAL ACTIVITY OF RAT’S STOMACH

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ABSTRACT

We determined purposely the “Gastrovit” preparation influence results from Badaan (Bergena crassifolia L.) and Seabuckthorn (Hippophae rhamnoides L) in the bioelectrical activity of rat’s stomach during acetic acid ulcer models of gastric. On the 7th, 14th and 21st days of treatment were compared with healthy plumbing. By take of 50 mg/kg of this preparation there had been increased overall bioelectrical activity of the stomach by 1.78-1.88 ($P<0.05$), the pulse frequency of the stomach by 1.04-1.29 ($P<0.05$), and the mean amplitude of the stomach by 1.26-1.44 ($P<0.05$) is shown that it has a gastro protector activity.

KEY WORDS: gastro protector, overall bioelectrical activity of the stomach.

INTRODUCTION

In the current globalization most of people refuse to use chemically drug preparation and supplement of active biological goods and they choose plant, animal, mineralized natural products without any chemical or poisonous substances.

Therefore, we selected plants which were mentioned above in order to produce the preparation with gastro protective activity. The final result is to produce “Gastrovit” preparation from Badaan (*Bergena crassifolia L.*) and Seabuckthorn (*Hippophae rhamnoides L.*) in order to use natural medicinal plants and to find rightful comparison between them. The experience of veterinary medicine usually uses the bergrizamin, badglumitsin and badsod preparations from badaan roots. Bergrizamin preparation from badaan roots has functions against for anti inflammation, antioxidant, stabilize cell membrane, gastro protector, immunecorrector and its ability to treat dietary diarrhea of lamb is 92.77%, effect of prevention and effect of therapy is 90.61%. [3].

Badaan was listed in Red book of Mongolia in 2004 and protected by constitutional laws and using carefully the earth top of Badaan is important.

Badaan’s leaf activates phagocyte in case of “*in vitro*” and recovers immune in case of “*in vivo*” as bergenin belongs to galacturons [5]. Extract of Badaan’s leaf protects the brain acid restriction and is approved [6].

In the earth top of Badaan contains complex caratinoide, rutine, Vitamin C, tanine, complex flavnoids, arbutines, celloide, antraglucoids, complex pectin and K₂O-23.6%, CaO, P₂O₅, MgO, SiO₂, Fe₂O₃, Al₂O₃, MnO, Na₂O, TiO₂, F [12].

This medicinal substance is a complex of traditional atomic phenols and spirit is dissolved in water in good conditions and never dissolved in organics, with fresh odor, dry tastes and usually with yellow colors [7,10]. Sea buckthorn contains palmitic acid (26.2%), oleine acid (10.5%), estuarine acid (10.4%), lanoline acid, red colored fats up to 2.0-8.0%, isoramnetine, Vitamin C 450 mg%, B₁ Vitamin 0.28 mg%, B₂

Vitamin 4.3 mg%, folic acid 0.79 mg%, E Vitamin 14.3 mg%, B₆, PP Vitamin, pectin 0.3-0.4%, carotene 0.3 mg%, criptocsabine, zeaxantine, phisalien, mannite sugar 3.56%, organic acids from apple,

lemon, fossil, wine, silicon up to 3%, dry substance, coumarone, flavnoide, ether oil, permanganate, aluminum, magnum, silicon, titanium, boric acids [4].

MATERIALS AND METHODS

Gastrovit preparation was injected by infusion and deadly average dosage (LD₅₀) is defined by Prozorovsky acceleration mode [15], and executed the rat's acetic acid ulcer models of gastric by public samples [1] in the practice. During the astasia medicinal changes of the active influence

bioelectrical activity of the rat's stomach is used by tools of electrogastrographical EGS-4 of the Tarnuev method. Electrogastrographical recording was estimated by curvimeter manuals.

In the research and test used male white 45 rats of Wistar species with 200-230 g weight and white 30 mouse and made a statistical formulation by SPSS-16 program.

RESULTS

1. Acute toxicity of "Gastrovit" preparation. Acute toxicity of injection to 30 white mouse with 20-22 g was executed by Prozorovsky acceleration mode as a deadly average dosage [15]. When we injected the test mouse by dosage of 0.75g/kg, 1.5g/kg, 2.25g/kg with 3% of gastrovit preparaion in their tail blood vessels, deadly average dosage was LD₅₀ in 1.5 g/kg. According to public enforcement principles used in pharmacology researches of LD₅₀ due to decrease of 50, 100, and 150.
2. "Gastrovit" preparation influence in bioelectrical activity of the stomach. In the study first phase used electrode plantation methods [13] in order to research normal rat bioelectrical activity of the

stomach and there were not been detected any of collapses or severe cases before and post surgery and since first date treated based on take of drugs such as gastrovit, Omeprazole daily by one doses after seventh day of taken drugs studied their influences in the bioelectrical activity of the stomach. (Table-1).

Rats were assigned into 5 groups (each containing 9 animals): Group 1 (health, no drugs), Group 2 (Ulcer control group was given physiologic saline orally (10 ml/kg), Group 3 (Experimental ulcer group were orally administered with 30 mg/kg of "Gastrovit"), Group 4 (Experimental ulcer group were orally administered with 50 mg/kg of "Gastrovit"), Group 5 (The reference ulcer group received oral doses of 50 mg/kg Omeprazole).

Table 1

"Gastrovit" preparation affected for bioelectrical activity of the stomach in rats

Time /days/	Animal group	Figures electrogastrogramm		
		Overall bioelectrical activity of the stomach (units)	The pulse frequency of the stomach (minutes)	The mean amplitude of the stomach (mill volts)
7	Group 1	80.5±0.71	2.5±0.02	1.9±0.03
	Group 2	60.1±1.22	2.3±0.02	1.6±0.02
	Group 3	96.2±1.32	2.4±0.01	2.3±0.03
	Group 4	107.2±1.41	2.4±0.03	2.3±0.04
	Group 5	83.1±1.73	2.4±0.14	2.1±0.01
14	Group 1	80.5±0.71	2.5±0.02	1.9±0.03
	Group 2	60.3±1.04	2.4±0.02	1.9±0.07
	Group 3	99.2±0.96	3.2±0.31	2.2±0.02
	Group 4	110.6±1.33	3.1±0.44	2.4±0.02
	Group 5	90.4±1.42	2.6±0.38	2.5±0.12
21	Group 1	80.5±0.71	2.5±0.02	1.9±0.03
	Group 2	65.2±1.25	2.5±0.04	1.8±0.41
	Group 3	104.2±1.36	2.6±0.01	2.1±0.08
	Group 4	122.8±2.11	3.2±0.04	2.5±0.03
	Group 5	91.3±1.43	3.0±0.02	2.1±0.05

As compared whit control, treatment, P<0.05

Healthy rat overall bioelectrical activity of the stomach was 80.5 ± 0.71 , the pulse frequency of the stomach was 2.5 ± 0.02 , the mean amplitude of the stomach was 1.9 ± 0.03 are determined, due to this estimates summary of others.

Acetic acid ulcer models of rat's stomach of 7th day was compared the with healthy part of stomach. It shown that for most of 3rd group 1.60 ($P < 0.05$); 4th group 1.78 ($P < 0.05$); 5th group 1.38 ($P < 0.05$), the pulse frequency of the stomach test of all groups are by 1.04, the mean amplitude of the stomach 3rd and 4th groups by 1.44, 5th group by 1.31 are being increased respectively.

On 14th experimental day, we compared the acetic acid ulcer models of gastric rat's overall bioelectrical activity of the stomach with controls. It shown that bioelectrical activity of the stomach was increased by 1.65 ($P < 0.05$) for 3rd group; by 1.83 ($P < 0.05$) for 4th group ; by 1.49 ($P < 0.05$) for 5th group, the pulse frequency of the stomach was increased by 1.33 ($P < 0.05$ for 3rd group); by 1.29 ($P < 0.05$) for 4th group; by 1.08 ($P < 0.05$) for 5th group, the mean amplitude of

the stomach was increased respectively by 1.16 ($P < 0.05$) in 3rd group; in 4th group by 1.26 ($P < 0.05$); in 5th group by 1.32 ($P < 0.05$).

On 21st days acetic acid ulcer models of gastric was compared to the rat's overall bioelectrical activity of the stomach with controls, its shown that bioelectrical activity of the stomach was increased in 3rd group by 1.59 ($P < 0.05$); in 4th group by 1.88 ($P < 0.05$); in 5th group by 1.40 ($P < 0.05$), the pulse frequency of the stomach was increased in 3rd groups by 1.04 ($P < 0.05$); in 4th group by 1.28 ($P < 0.05$); in 5th group by 1.20 ($P < 0.05$), the mean amplitude of the stomach was increased respectively in 3rd group by 1.16 ($P < 0.05$); 4th group 1.39 ($P < 0.05$); 5th group by 1.17 ($P < 0.05$).

Due to experimental result that gastric ulcer is being healthy comparison groups between (5th group)-and 4th group otherwise from "Gastrovit" preparation by 50 mg/kg oral dosage in a day for one time is shown that overall bioelectrical activity of the stomach are being higher is approved that "Gastrovit" preparation has gastro protector activation.

DISCUSSION

Inflammation, gastric ulcer is pathological significant issues and a complex body reaction taken part into many activities of human and animal medicinal treatment. In the performance of researchers include inflammation pharmacological theory some issues defined include [2,3,9,11,13,14]. One of basic result of natural drugs against inflammation can be a complex of plants. This is consist of biological active substances that protects itself, growth and plantation, and other activities. Therefore the plants must be selected in right directions and analyze processing mechanism, serving substance chemical characters in details, and further needs to produce medicine. Plants with capacity of treat wounds and against inflammation such as Badaan's leaf (*Bergenia crassifolia*), seabuckthorns (*Hippophae rhamnoides L.*) are selected in this research.

"Gastrovit" preparation from Badaan's leaf and sea buckthorn has an ability to serve anti inflammation and gastro protector activity and this study's summary accords with other's research. [1, 2, 3, 9, 13]. According to Volodiya's (2002) and other's researchers on the first 10 days of originating rabbit reflex-gastritis if compares with overall bioelectrical activity of the stomach showed that berggrismine was increased by 1.52, bergfoline (Badaan's leaf preparation) was increased by 1.56, the pulse frequency of the stomach was increased by 1.12-1.19, the mean amplitude of the stomach was increased by 1.17-1.28 and on the 19-20 days of experiment overall bioelectrical activity of the stomach was increased as berggrismine by 1.73, bergfoline (Badaan's leaf preparation) was increased by 1.86, the pulse frequency of the stomach was increased by 1.06-1.10, the mean amplitude of the stomach was increased by 1.50-1.59 and it shows that all results of them accord with our research's result.

SUMMARY

1. Gastrovit preparation acute toxicity LD_{50} is 1,5 g/kg and 50 mg/kg in a dosage has treatment highly activation is approved.
2. Gastrovit preparation with plant origin increases bioelectrical activity of the stomach and gastro protector activity and it is being approved.

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