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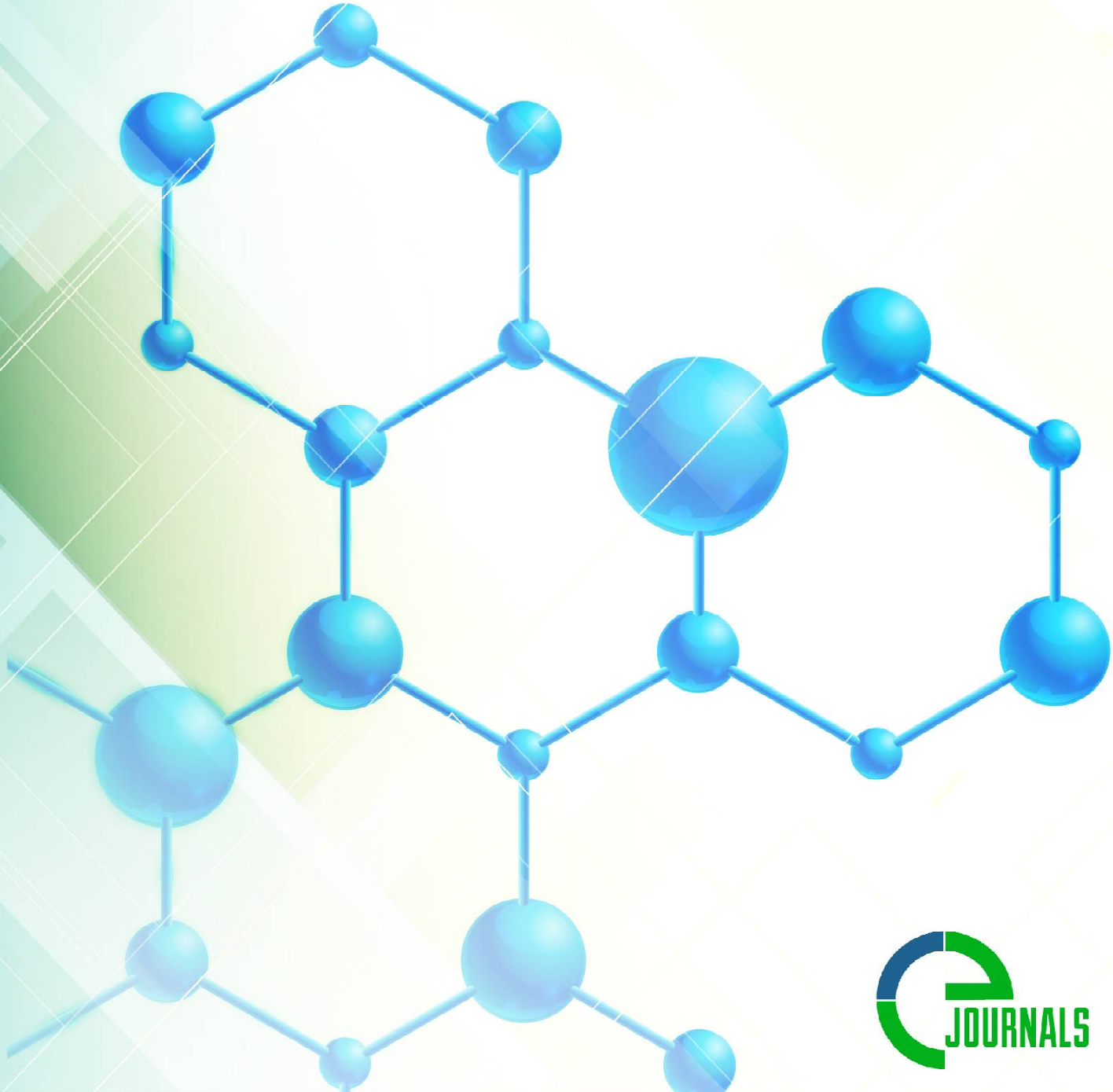

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IN VIVO STUDY OF THE BIOAVAILABILITY OF "GASTROFIL" CAPSULES

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Studies have shown that the introduction of an aqueous solution of the contents of the capsules "Gastrofil" at a dose of 10 mg / kg provides antiulcer activity in the model of acute gastric ulcer in rats caused by the administration of acetylsalicylic acid at a dose of 150 mg / kg. The studied drug had an equivalent reliable gastroprotective effect, which was not inferior to the action of the reference drugs.

It can be assumed that the capsules "Gastrofil" can be used for the prevention and treatment of gastric ulcer and duodenal ulcer.

Keywords. Antiulcer drugs, extracts, capsules, bioavailability, antiulcer activity.

In recent years, despite significant advances in the development of antiulcer drugs of synthetic origin, the therapeutic efficacy of which is beyond doubt, many of them are characterized by the presence of a number of side effects and have contraindications for use. In this regard, medicinal preparations based on medicinal plants are one of the promising, highly effective and harmless medicinal preparations both for the treatment of gastric ulcer and duodenal ulcer, and in the complex therapy of destructive lesions of the gastrointestinal tract [1-5].

Purpose of the study. Investigation of bioavailability of Gastrofil capsules by in vivo method based on specific activity.

Experimental part

Materials and methods. This work examines the study of the biological availability of capsules "Gastrofil", developed on the basis of a dry extract obtained from the anti-ulcer collection "Ulcerafit" in experimental gastropathy induced by acetylicylic acid.

In a previous work [6,] the bioavailability of the antiulcer collection "Ulcerafit" was studied using the in vivo method when compared with the flowers of Yarrow and Calendula officinalis flowers in an acute experiment on the model of "acetylsalicylic ulcer".

The bioavailability of capsules "Gastrofil", when compared with capsules "Omez", 20 mg and the drug "De-Nol", coated tablets, was studied in an acute experiment on the model of "acetylsalicylic ulcer" [8].

The experiment was carried out on white rats, weighing 180 - 220 g, which were divided into 5 groups of 6 animals: group 1 - intact; Group 2 - control; 3rd, 4th and 5th groups are experienced.

To simulate ulcers, animals in the control and experimental groups (groups 2, 3, 4 and 5) were injected with a 1.5% aqueous solution of acetylsalicylic acid per os twice within 3 days with an interval of 4 hours. dose of 150 mg / kg, manufactured by Banson Pharmaceuticals Pvt. Ltd, India.

An hour before the administration of the acetylsalicylic acid solution, the experimental groups of rats were injected per os once a day with the compared drugs as follows:

Group 1 - intact - purified water in an amount of 1 ml;

Group 2 - control - 1.5% aqueous solution of acetylsalicylic acid at a dose of 150 mg / kg + purified water in an amount of 1 ml;

Group 3 - experimental - 0.2% aqueous solution of the drug "Gastrofil - capsules", produced by JV LLC "NOVA PHARM", Uzbekistan at a dose of 10 mg / kg;

Group 4 - experimental - 0.2% aqueous solution of the drug "Omez" - capsules of 20 mg at a dose of 10 mg / kg.

Group 5 - experimental - 1% aqueous solution of the drug "De-Nol®" - coated tablets, manufactured by Astellas Pharma Europe B.V., the Netherlands at a dose of 50 mg / kg. The results are shown in Table 1.

Table № 1

Bioavailability of Gastrofil - capsules, JV NOVA PHARM LLC, Uzbekistan, Omez - 20 mg capsules, Dr. Reddy's Laboratories Ltd and De-Nol®, manufactured by Astellas Pharma Europe B.V., The Netherlands

№ gr	Weight, g	Drug dose, mg / kg	volume of 1% solution of aspirin ml	Ulcer size, mm2			
				Point	Large	Striped	General square
Intact group + purified water							
1	193,8 ± 6,5	-	-	-	-	-	-
Control group + purified water							
2	190,2 ± 7,0	-	3	2,8 ± 0,3 P<0,05	4,8 ± 0,5 P<0,05	2,5 ± 0,5 P<0,05	10,1 ± 2,6 P<0,05
"Gastrofil - capsules", produced by JV "NOVA PHARM" LLC, Uzbekistan							
3	188,3 ± 5,8	1	3	0,4 ± 0,1 P<0,05	0 P<0,05	0 P<0,05	0,4 ± 0,1 P<0,05
"Omez" - capsules of 20 mg, Dr. Reddy's Laboratories Ltd							
4	191 ± 7,5	1	3	0,38 ± 0,1	0 P<0,05	0 P<0,05	0,38 ± 0,1
De-Nol®, manufactured by Astellas Pharma Europe B.V., Netherlands							
5	192,4 ± 6,0		3	0,4 ± 0,2	0 P<0,05	0 P<0,05	0,4 ± 0,2

On the 4th day, the animals were euthanized under urethane anesthesia (10% aqueous solution at a dose of 1000 mg / kg), the abdominal cavity was opened, the stomachs were removed, they were opened along the lesser curvature, washed with cold 0.9% NaCl solution and macroscopically using a magnifying glass at In bright light, the number and area of destruction were determined, which were differentiated into point (less than 1 mm2), large (more than 1 mm2) and strip-like. Determined the total area of the formed ulcers in mm2.

Statistical processing of the data obtained was carried out using the Student's t-test.

Results and discussion: In the course of the experiment to study bioavailability, it was revealed that on the gastric mucosa of rats of the control group after intragastric administration of acetylsalicylic acid for 3 days, punctate ulcers with a total area of 2.8 ± 0.3 mm2 (P <0.05) and large ulcers - 4.8 ± 0.5 mm2 (P <0.05). On the mucous membrane of some rats, even stripe-like ulcers of 2.5 ± 0.5 mm2 (P <0.05) were observed. The total area of all ulcers was 10.1 ± 2.6 mm2 (P <0.05), while no ulcers were observed in intact animals on the gastric mucosa (Table 1).

In rats receiving the drug "Gastrofil - capsules" produced by JV LLC "NOVA PHARM", Uzbekistan, at a dose of 10 mg / kg, an antiulcer effect was observed, the area of ulcers formed was 0.4 ± 0.1 mm2 (P <0.05) ...

Under similar conditions, the drug "Omez" - capsules of 20 mg, Dr. Reddy's Laboratories Ltd at a dose of 10 mg / kg had an antiulcer effect, the area of ulcers formed was 0.38 ± 0.1 mm2 (P <0.05). The difference between the obtained results of the compared drugs was insignificant (P> 0.5).

The drug "De-Nol®", manufactured by Astellas Pharma Europe B.V., Netherlands, at a dose of 50 mg / kg had an antiulcer effect, the area of ulcers formed was 0.4 ± 0.2 mm2 ($P < 0.05$). The difference between the obtained results of the compared drugs was insignificant ($P > 0.5$).

Thus, the study of the bioavailability of Gastrofil capsules on the model of acetylsalicylic ulcer showed that Gastrofil capsules had a pronounced antiulcer effect, preventing the appearance of ulcers on the mucous membrane of rats under the influence of acetylsalicylic acid.

2.3 Conclusion:

The data obtained show that the capsules "Gastrofil" (p. 010720 of this year, 2 years), produced by JV LLC "NOVA PHARM", Uzbekistan in terms of specific activity were biologically equivalent to the comparison drug "Omez" - capsules of 20 mg (p. 4820619, s.y. 07/2022 No. and registration date DV / X 04176/03/18 23/03/18), manufactured by Dr. Reddy's Laboratories Ltd. The drugs at a dose of 10 mg / kg have an equally reliable antiulcer effect.

The study of the bioavailability of Gastrofil capsules shows that Gastrofil capsules have a pronounced, reliable antiulcer effect and can be used for the prevention and treatment of gastric ulcer and duodenal ulcer.

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