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Therapy using medicinal plants to cure stomach ulcer illness and research on the characteristics of these plants

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Abstract: The World Health Organization states that 10.0–15.0% of people worldwide suffer from peptic ulcers of the stomach and duodenum. The structure of gastrointestinal tract illnesses includes both benign and malignant neoplasms, peptic ulcer diseases, acute and chronic gastritis, gastroduodenitis, and functional dyspepsia. Furthermore, these plants' leaves and their The autoxidation activity of combinations with different quantities was shown to be stronger when assessed using the method of suppression of the adrenaline autoxidation process.

When the AA% indications of the mixture of leaves and stems were analyzed, the plantago and hypericum linariifolium blend in a 1:1 ratio showed the highest antioxidant activity. Consequently, a 1:1 by weight ratio was proposed for the application of this plantago and hypericum linariifolium combo as a potential medicinal food component.

Keywords: World Health Organization, Therapy, Medicinal Plants.

Introduction: The Republican Center for Health and Medical Statistics states that gastrointestinal disorders made up 10.3% of all cases in Uzbekistan in 2015 and are on the rise. For the first time, 72.7 out of 100,000 people were diagnosed with peptic ulcer disease in 2024[5].

The primary symptom of peptic ulcer disease (PU), a chronic recurring illness that alternates between

exacerbations and remissions, is the development of an ulcer in the stomach and duodenum walls.

According to contemporary theories, the pathophysiology of PU often involves an imbalance between the elements that protect the stomach and duodenum's mucous membranes and the substances that contribute to acid-peptic aggressiveness of the gastric contents.

The microorganisms H. pylori, identified in 1983 by Australian scientists B. Marshall and J. Warren, are currently thought to play a decisive role in the development of peptic ulcers[8]. The VacA strain of H. pylori is the most pathogenic, and its effects on the stomach and duodenum's mucous membrane are quite diverse, involving the production of a variety of cytotoxins and enzymes (urease, proteases, and phospholipases) that damage the mucous membrane's protective barrier.

Acute PU can present with a variety of clinical symptoms, including functional problems, dyspeptic disorders, and stomach discomfort. Abdominal discomfort is the most prevalent but least specific PU symptom. When youngsters see gastroenterologists for stomach discomfort, only 15–25% exhibit erosive and ulcerative processes[13]. During the normal course of PU, the pain is rather severe, mostly in the paraumbilical and epigastric areas, and it happens often. The pain becomes a "hungry", nighttime quality. Both early (occurring 30 to 60 minutes after eating) and late (occurring 2 to 3 hours after eating) pain are possible. Pain in the right shoulder, shoulder blade, back, and rhythm of pain—hunger, pain, eating, comfort, etc.—could be radiating.

The pain might be paroxysmal, aching, or cutting, and a positive Mendelian symptom is frequently found. Age, the patient's unique traits, the condition of his neurological and endocrine systems[4], the architectural aspects of the ulcerative defect, and the degree of functional abnormalities of the gastrointestinal tract all influence the type of ABS. There is no correlation between the endoscopic stage of the ulcerative process and its clinical signs in half of unwell children.

PU has no widely recognized categorization. First off, PU is classified as either linked or not associated with H. pylori infection based on whether the infection is present or not. Another name for the latter type is idiopathic. Additionally, there is a difference between peptic ulcers as a separate illness (essential peptic ulcer) and symptomatic ulcers of the stomach and duodenum (medicinal, "stressful," endocrine pathology, and other chronic diseases of internal organs), which develop amidst other illnesses and are linked to unique pathogenetic and etiological factors.

Large-scale, focused efforts are currently underway in our nation to drastically raise the standard and greatly broaden the scope of healthcare offered to the populace. This issue's resolution is directly related to the Republic of Uzbekistan's five development priorities, which include "reducing morbidity and mortality among the population". One of the pertinent areas is the execution of these duties, which include enhancing the diagnosis of both acute and chronic stomach ulcers by assessing the outcomes of a multiparametric ultrasound examination with tailored image magnification in the region of interest[10].

In addition to prescribing medications, a comprehensive approach to treating PU should involve a variety of other activities, such as dietary nutrition, quitting alcohol and tobacco, refusing to use drugs that cause ulcers, normalizing work and rest schedules, and sanatorium treatment. Patients who have a straightforward course of PU are treated conservatively. It is often done as an outpatient procedure. However, hospitalization is advised for patients with severe pain syndrome, a high risk of complications (such as huge and giant ulcers), the necessity for additional testing to confirm the diagnosis (for instance, if the kind of stomach ulcer is uncertain), and severe concurrent disorders.

Diet therapy: To hasten the healing of ulcers, diet therapy is advised for all patients with ulcers. The suggestions have a C degree of trustworthiness (the evidence has a 5 level of dependability). Remarks: The fundamentals of dietary nutrition for peptic ulcer disease patients, which were established many years ago, are still applicable today. The guideline that states that "six small meals are better than three large ones," mechanical, thermal, and chemical sparing, and frequent (5–6 times a day) fractional meals are still recommended[6].

The guideline that states that "six small meals are better than three large ones," mechanical, thermal, and chemical sparing, and frequent (5–6 times a day) fractional meals are still recommended. Strong meat and fish broths, fried and peppered foods, smoked and canned foods, seasonings and spices (onion, garlic, pepper, mustard), pickles and marinades, carbonated fruit waters, beer, dry white wine, champagne, coffee, and citrus fruits are all items that should be avoided when following a diet because they irritate the stomach mucosa and increase the production of hydrochloric acid.

Products having strong buffering qualities—that is, the capacity to bind and neutralize hydrochloric acid—should be preferred. These consist of eggs, milk, dairy products, and cooked or steamed meat and fish. Dairy

and vegetarian soups, pasta, stale white bread, and dry biscuits are also permitted. Vegetables (carrots, cauliflower, zucchini, and potatoes) can be mashed, stewed, or steamed to make souffles. Porridges, sweet berry jam, mousses, jellies, raw, grated, and baked apples, milk and cocoa, and weak tea are all possible foods to include in the diet.

Simple yet crucial guidelines like the need to eat quietly, slowly, when seated, and to chew food well must be kept in mind. Saliva's buffering properties are extremely noticeable, and this helps meals sink more effectively.

In order to avoid ulcer recurrence, eradication treatment is advised for all ulcer patients with positive H. pylori infection test findings. The suggestions have a believability level of B (the evidence has a reliability level of 2). Remarks on: Eradication therapy was shown to significantly lower the risk of recurrence of the disease within a year after suturing the defect (HR 1.49; 95% CI: 1.10-2.03) [9] in a meta-analysis that summarized the findings of five randomized controlled trials in a population of patients with peptic ulcer complicated by perforation.

Eradication therapy of H. pylori infection in infected individuals lowers the incidence of recurrence of stomach (HR = 0.29; 95% CI 0.20, 0.42) and duodenal ulcer (HR = 0.20; 95% CI: 0.15-0.26) compared with placebo, according to the Cochrane Review and other meta-analyses. Based on the suggestions made at the most recent European Working Group conciliation meeting

The incidence of clarithromycin resistance in a particular location determines which eradication strategy is best, according to the group for the research of H. pylori "Maastricht-V" (2016). Without initial testing, regular triple therapy is recommended as the first-line treatment if the region's rates of clarithromycin resistance do not surpass 15%. The first-line regimen is a standard triple scheme of eradication therapy, which includes amoxicillin (1000 mg twice a day), clarithromycin (500 mg twice a day), and IPN (at a standard dose twice a day), since the resistance indicators of H. strains pylori resistance to clarithromycin in Uzbekistan do not exceed 10%.

Currently, strategies to increase the efficacy of conventional triple treatment have been devised. 1. A higher dose of IPN (double the usual dosage) is administered twice a day. 2. A 14-day extension of the triple treatment period with IPN and clarithromycin. As of right now, it is recognized that only this length of time allows traditional triple treatment to be as successful as alternative regimens. 3. Thorough patient education and close observation of the precise adherence to the recommended drug schedule[7].

A traditional four-component regimen consisting of bismuth tricalcium dicitrate (120 mg four times a day) in combination with IPN (at a standard dose twice a day), tetracycline (500 mg four times a day), and metronidazole (500 mg three times a day) for 10 days is an option for first-line eradication therapy (for instance, in case of intolerance to penicillin group drugs).

When regular triple therapy fails, the primary second-line treatment is quadrotherapy with bismuth tricalcium dicitrate. The eradication regimen, which consists of IPN (at a normal dose of twice daily), levofloxacin (at a dose of 500 mg twice daily), and amoxicillin (at a dose of 1000 mg twice daily), is another second-line therapeutic regimen. Only a gastroenterologist with balanced indications may administer triple treatment with levofloxacin. The foundation of third-line treatment is figuring out how sensitive each H. pylori strain is to drugs.

As part of further procedures to achieve hemostasis, patients with laboratory and endoscopically confirmed ulcerative bleeding are advised to receive intravenous proton pump inhibitors to halt the bleeding. The suggestions have a degree of credibility (the evidence is reliable). Remarks: PU usage lowers the incidence of recurrent bleeding and stops ulcerative bleeding. In this instance, a bolus of 80 mg of esomeprazole is given intravenously at the same time, and the medication is then continuously infused for 72 hours at a rate of 8 mg per hour.

Intravenous IPN administration significantly lowers the incidence of recurrent bleeding, according a recent meta-analysis. Eradication treatment is administered following the patient's transition to oral medicine[11].

A severe clinical picture of the disease with persistent (greater than seven days) pain syndrome, stomach ulcerations necessitating a differential diagnosis between benign ulcers and gastric cancer, exacerbation of peptic ulcer with a history of complications, and peptic ulcer with concomitant diseases are indications for planned hospitalization of patients with gastric and duodenal ulcers. Patients experiencing an aggravation of their peptic ulcer condition should typically get inpatient therapy for 10 days. Emergency hospitalization is indicated when there are indications of gastrointestinal bleeding, ulcer penetration, and perforation. Patients who experience an uncomplicated flare-up of their duodenal and stomach ulcers are treated as outpatients. In line with the norm of specialist medical treatment for gastric and duodenal ulcers, patients experiencing an aggravation of peptic ulcer disease get specialized medical care in both outpatient and inpatient settings. Any patient who exhibits

symptoms of acute gastrointestinal bleeding or has a reasonable suspicion of it is immediately referred to a hospital that is ready to receive them.

This plant is found in abundance on the mountain slopes, stony and gravel slopes of Jizzakh, Kashkadarya and Namangan regions. Boil 1 cup of water in 1 tablespoon of crushed dry leaves of hypericum linariifolium for 3-4 minutes and strain after 2 hours. Drink 1/4 cup 3 times a day 15 minutes before meals. This decoction is used for colitis, enteritis and hepatitis

In addition, caution should not be forgotten when hypericum linariifolium . In particular, it is not recommended for patients with high blood pressure to drink it carefully and use it for a long time, so it is recommended to consult a doctor before using the field plant.

Purpose of work. Development of a medicinal food supplement based on a mixture of these leaves by evaluating the antioxidant activity of plantago and hypericum linariifolium grown in the Fergana Valley of Uzbekistan and determining the antioxidant activity of the created supplement.

METHODS

Used reactants. Research in performing " Chemical clean " model from the reactants bidistilled from water was used.

Extracts get Sample extract preparation for dried leaves in a blender crushed and in a sieve 0.1-0.2 mm in size fraction of 0.75 g plant sample in 50 ml of water for 10 minutes boiled. Received watery extract room up to temperature cooled down and 0.45 µm dimensional with a syringe from the filter conducted and analyzed for was used.

Antioxidant activity to determine Ferghana valley plantago and hypericum linariifolium of the field of the leaves and this stems AA indicator of mixtures evaluation for Adrenaline In vitro, it is evaluated by the method of autoxidation reaction inhibition, that is, the ability of adrenaline to inhibit the autoxidation reaction and at the same time prevent the formation of reactive oxygen species (ROS) [2]. is expressed

plantago and hypericum linariifolium extract samples were prepared in two different ways.

1. Reflux of 0.75 g of sample in 50 mL of water was carried out by boiling in a flask equipped with a condenser for 10 minutes. The obtained extract was passed through a 0.45 µm syringe filter and used for analysis.

2. was ultrasonically extracted in 25 ml of 96% ethanol at 60 o C for 20 minutes. The obtained extract was passed through a 0.45 µm syringe filter and used for analysis.

Spectrophotometric analysis.

of 0.2 M carbonate (Na 2 CO 3 -NaHCO 3 , pH=10.65) buffer and 0.15 ml of 0.18% solution of adrenaline tartrate, mix quickly, and in a cuvette with a thickness of 10 mm K7000 (YOKE , China) optical density D 1 at a wavelength of 347 nm every 30 seconds for 10 minutes in a spectrophotometer was determined[3].

0.045 ml of the examined plant extract, 3 ml of the buffer solution and 0.15 ml of the 0.18% solution of adrenaline tartrate were taken and mixed in the above manner, and the optical density at a wavelength of 347 nm was measured (D 2).

Table 1.
Measured optical densities of adrenaline and samples.

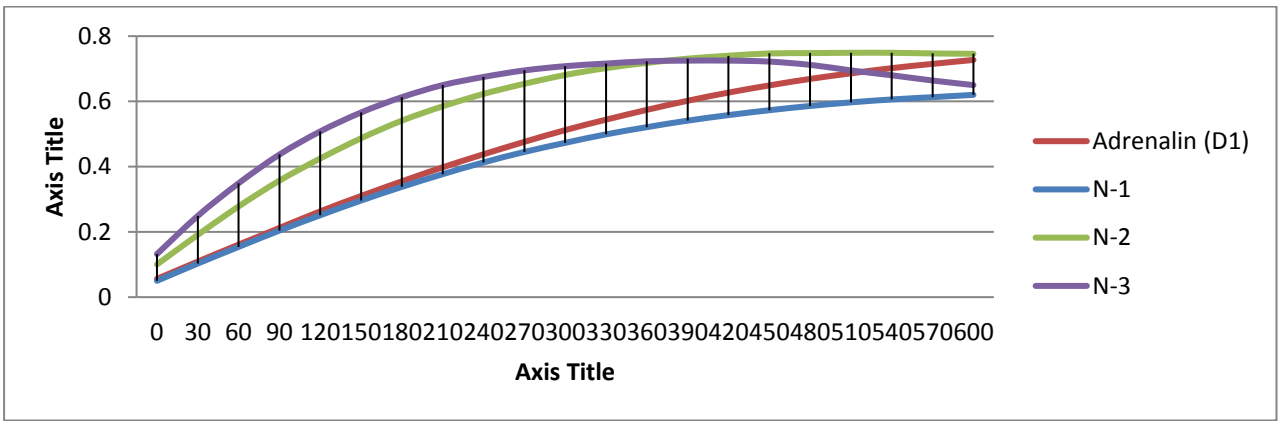
for the aqueous extract					for alcoholic extract			
Time, sec	Adrenaline (D 1)	plantago hypericum linariifolium 1.1 (D 2)	plantago hypericum linariifolium 3.1 (D 2)	plantago hypericum linariifolium 1.3 (D 2)	Adrenaline (D 1)	plantago hypericum linariifolium 1.1 (D 2)	plantago hypericum linariifolium 3.1 (D 2)	plantago hypericum linariifolium 1.3 (D 2)
0	0.056	0.05	0.1	0.132	0.083	0.056	0.053	0.058
30	0.109	0.103	0.191	0.249	0.134	0.108	0.104	0.112
60	0.161	0.154	0.278	0.349	0.186	0.158	0.151	0.163
90	0.212	0.204	0.357	0.437	0.235	0.206	0.195	0.212
120	0.263	0.251	0.425	0.508	0.282	0.251	0.237	0.257
150	0.31	0.296	0.487	0.566	0.326	0.295	0.276	0.3

180	0.355	0.338	0.541	0.613	0.368	0.334	0.313	0.338
210	0.398	0.377	0.585	0.65	0.407	0.369	0.347	0.374
240	0.438	0.413	0.623	0.675	0.442	0.402	0.377	0.405
270	0.476	0.445	0.654	0.695	0.473	0.431	0.403	0.434
300	0.512	0.473	0.681	0.708	0.501	0.457	0.427	0.46
330	0.544	0.499	0.702	0.716	0.525	0.482	0.449	0.483
360	0.574	0.521	0.718	0.723	0.547	0.503	0.469	0.503
390	0.602	0.541	0.731	0.725	0.565	0.522	0.487	0.522
420	0.627	0.558	0.74	0.725	0.583	0.538	0.503	0.537
450	0.649	0.573	0.747	0.722	0.597	0.553	0.517	0.551
480	0.669	0.586	0.748	0.712	0.61	0.566	0.529	0.563
510	0.686	0.597	0.749	0.695	0.623	0.578	0.539	0.574
540	0.702	0.606	0.749	0.68	0.632	0.588	0.548	0.583
570	0.715	0.613	0.747	0.664	0.639	0.596	0.557	0.592
600	0.727	0.62	0.746	0.65	0.647	0.604	0.564	0.598

Table 2,

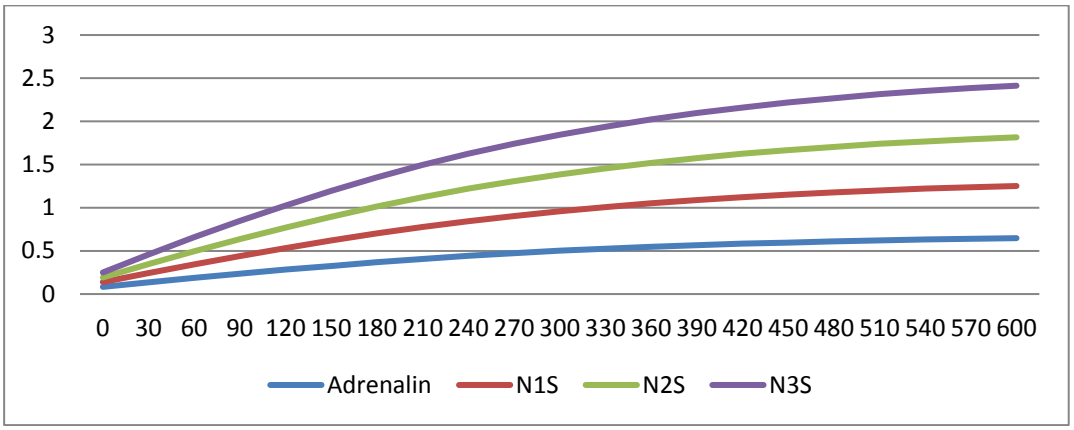
Aqueous and alcoholic extracts of plants with antioxidant activity have been found to inhibit the active form of oxygen over time

The extract under investigation	for the aqueous extract			for alcoholic extract		
	AA, %					
	plantago hypericum linariifolium 1:1(D 2)	plantago hypericum linariifolium 3:1(D 2)	plantago hypericum linariifolium 1:3 (D 2)	plantago hypericum linariifolium 1:1(D 2)	plantago hypericum linariifolium 3:1(D 2)	plantago hypericum linariifolium 1:3 (D 2)
1st minute	4.35%	-72.67%	-116.77%	15.05	18.82	12.37
3rd minute	4.79%	-52.39%	-72.68%	9.24	14.95	8.15
5th minute	7.62%	-33.01%	-38.28%	8.78	14.77	8.18
10th minute	14.72%	-2.61%	10.59%	6.65	12.83	7.57
Average	7.87%	-40.17%	-54.28%	9.93	15.34	9.07



N1- plantago hypericum linariifolium 3:1, **N2-** plantago hypericum linariifolium 1:1
N3- plantago hypericum linariifolium 1:3

Figure 1. Graph of increase in optical densities of adrenaline and samples (l=347 nm) (for aqueous extract)



N-1S- plantago hypericum linariifolium 3:1, **N-2S**- plantago hypericum linariifolium 1:1
N-3S- plantago hypericum linariifolium 1:3

Figure 2. Graph of increase in optical densities of adrenaline and samples (l=347 nm) (for alcohol extract)

DISCUSSION OF RESULTS

The antioxidant activity of the examined samples is expressed in percent (AA%) by the inhibition of autoxidation of adrenaline and was calculated by the following formula:

$$AA = \frac{(D_1 - D_2) \cdot 100}{\mathrm{D}_1}$$

Here, optical density of adrenaline tartrate solution added to buffer D 1 , sample extract added to buffer D 2 , and optical density of adrenaline tartrate added to buffer D 2 .

In aqueous extract the obtained results show the presence of prooxidant properties of the tested samples. In conclusion , it can be said that plantago and hypericum linariifolium is 1:1 it was found that the sample extracts have higher antioxidant properties than the rest of the samples. which is one of the medicinal plants, is also used in the treatment of many diseases.

The evaluated samples' antioxidant qualities are demonstrated in the alcoholic extract. In comparison to the other samples, it was discovered that the plantago and hypericum linariifolium extracts in a 3:1 ratio (15.34%) had better antioxidant qualities.

Samples from the rhizomes and seeds of plantago and hypericum were gathered, crushed, and subjected to laboratory examination in several ratios (3:1, 1:3, and 1:1) during varying time periods in order to ascertain the antioxidant activity of the plant extracts. According to the statistics, the average 3:1 ratio is water extract -40.17%, alcohol extract 15.34%, our 1:1 ratio is water extract -54.28 %, alcohol extract 9.07%, and in our most recent 1:1 ratio, water extract 7-87%.

CONCLUSION

The chemical makeup, pharmacological effects, and clinical disease-treating qualities of the medicinal plants that are grown in our nation have all been well investigated. Consequently, it was discovered that the surface of plantago and hypericum linariifolium contains a variety of chemical compounds that are essential to human health, and that they have anti-inflammatory and wound-healing properties. Additionally, the leaves of these plants and their When the autoxidation activity of combinations with varying amounts was evaluated using the method of inhibition of the adrenaline autoxidation process, it was shown to be stronger.

The blend of plantago and hypericum linariifolium in a 1:1 ratio exhibited the strongest antioxidant activity when the AA% indicators of the mixture of leaves and stems were examined. As a result, it was suggested that this plantago and hypericum linariifolium mixture be used as a novel therapeutic food ingredient in a 1:1 by weight ratio.

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