



SCREENING OF ANTI ULCER ACTIVITY OF DAMMUL AKHWAIN ETHANOLIC EXTRACT AGAINST INDOMETHACIN INDUCED ULCER IN RAT MODEL

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ABSTRACT

Longer life expectancy and lifestyle-related illnesses have increased the risk of chronic, debilitating diseases like heart disease, diabetes, cancer, and mental illnesses like schizophrenia and bipolar disorder. Unani medication is additionally known as Greco-Arab medicine and follows sedate administrative thoughts that have been around for centuries. DAMMUL AKHWAIN ETHANOLIC EXTRACT may serve as an enhancer in the ulcer treatment by reducing the need for the use of oral NSAIDS often used in conventional therapy. The efficacy and viability of long-term use of this sedative as a potential antiulcer medicine were developed.

KEYWORDS: dammul akhwain ethanolic extract, NSAIDS and Unani medication.

1. INTRODUCTION

The cutting edge of western medicine is beset by ethnocentrism. Numerous individuals are under the impression that their chosen treatment is the most viable and comprehensive alternative available. We often forget that modern logical medicine is only available to a very small number of people. In fact, more than a third of the world's population may not have access to it.^[1]

Allopathic medicine is unreasonably expensive and requires an over-the-top sum of budgetary speculation for a developing country like India. In certain locales, there's a lack of cutting-edge restorative professionals, and these experts are not continuously willing to live among the underprivileged in ghettos, forsake ranges, separated forests, or high mountains. On the other hand, the longer life expectancy and lifestyle-related illnesses have increased the risk of chronic, debilitating diseases like heart disease, diabetes, cancer, and mental illnesses like schizophrenia and bipolar disorder. Even though there are a number of modern solutions and medicines for dealing with them, more and more patients are looking for medications that are less invasive and more patient-centered to improve their quality of life and reduce the risk of complications caused by medical care.^[2]

Unani pharmaceuticals is another title for Unani pharmaceuticals, which is an antiquated restorative hone that started in Greece. Unani medication is additionally known as Greco-Arab medicine. It is more regularly performed within the Indian Subcontinent and follows

sedate administrative thoughts that have been around for centuries. This kind of therapeutic treatment has also been alluded to as an all-encompassing approach by a few specialists. It contains substances derived from their normal characteristics and sources. It may be perilous on the off chance that adequate safeguards are not taken to get it ready, separate, distinguish, and convey it.^[3]

AIM AND OBJECTIVES

AIM: The objective of the investigate is to assess the adequacy of Dammul Akhwain ethanolic extricate (inferred from *Dracaena cinnabari*) as an anti-ulcer operator in a rodent show of ulceration brought on by indomethacin treatment.

OBJECTIVES

- The essential objective of the current examination is to assess the ulcer-fighting potential of an ethanolic extricate of Dammul Akhwain.
- In the current inquire about, we are treating peptic ulcers employing a common item since, in differentiate to engineered pharmaceuticals, normal products are considered to be the encapsulation of security in today's society.

PLAN OF WORK

- **Procurement of Dammul Akhwain:**
 - Collection and authentication of Dammul akhwain.
 - Ethanolic Extraction of Dammul Akhwain by Maceration method
 - This extraction will be subjected to Phytochemical screening.

METHODOLOGY

Indomethacin induced ulcers (In-vivo method)

Wistar rats will be divided into 5 groups of six animals each = Total 30 rats.

S.No	GROUPS	DRUG AND DOSE
1	Group-1 Normal Control group	Normal saline at a dose of 1 ml/100gm body weight
2	Group-2 Negative Control group/ Ulcerogenic control	Indomethacin 30 mg/kg b.w in 0.5 w/v CMC, p.o
3	Group-3 Standard group	Omeprazole 20 mg/kg b.w, p.o + Indomethacin 30 mg/kg b.w in 0.5 w/v CMC, p.o
4	Group-4 Treatment group	Ethanollic Extract of Dammul Akhwain 100 mg/kg b.w i distilled water & few drops of tween 80 + Indomethacin 30 mg/kg b.w in 0.5 w/v CMC, p.o
5	Group-5 Treatment group	Ethanollic Extract of of Dammul Akhwain 300 mg/kg b.w in distilled water & few drops of tween 80 + Indomethacin 30 mg/kg b.w in 0.5 w/v CMC, p.o

Groups of Animals

This pre-treatment plan with the standard and test was proceeded for a add up to of 14 days. At the conclusion of the 14th day, the rats in bunches 2 through 5 were made to go without from nourishment for 24 hours, and after that they were given indomethacin by mouth at a measurements of 30 mg/kg b.w. in 0.5% CMC to actuate an ulcer. Taking after the infusion of indomethacin for a period of six hours, the rats will be butchered, and their stomachs will be evacuated, after which they will be set in a 10% formalin buffered arrangement for the reason of histological investigation.

RESULTS AND DISCUSSION**PRELIMINARY QUALITATIVE CHEMICAL SCREENING.**

Particular chemical tests have been conducted to distinguish between the components in agreement with customary strategies. This unforeseen chemical examination is the result.

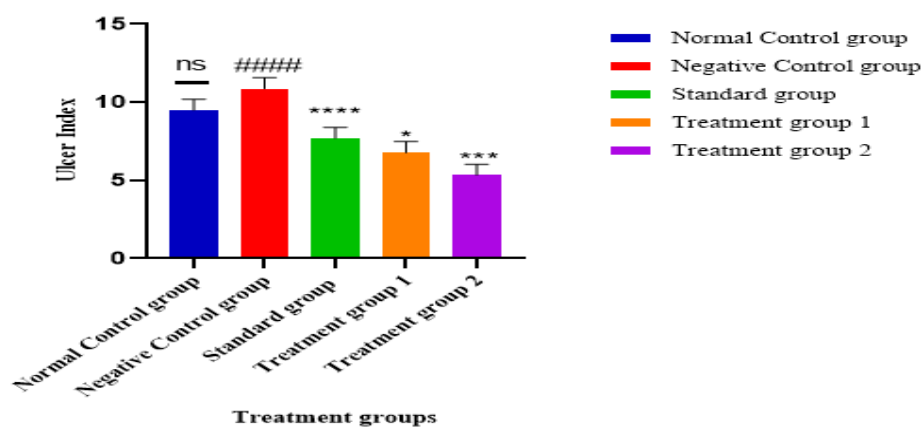
Chemical constituent	Test	DAEE
Tannins	Ferric chloride test	+
	Lead acetate test	+
	Acetic acid sol.	-
	Dil. Iodine sol.	-
Alkaloids	Mayer's test	+
	Dragendroff's test	++
	Hager's test	+
	Wagner's test	+
Glycoside		
A. Cardiac glycosides	Baljet's test	+
	Legal's test	+
	Keller-killiani test	+
	Liebermann's test	-
B. Steroids	Salkowski test	+
	Liebermann-Burchard test	+
	Liebermann's test	-
C.Saponins	Foam test	++
D. Flavonoids	Shinoda test	++
	Lead acetate test	++
	NaOH test	++
E. Anthraquinones	Bontrager's test	-
	Modified-Bontrager's test	-
Carbohydrates	Molisch test	+
	Fehling's test	+
	Benedict's test	-
Proteins	Biuret's test	+
	Millon's test	-

Preliminary tests

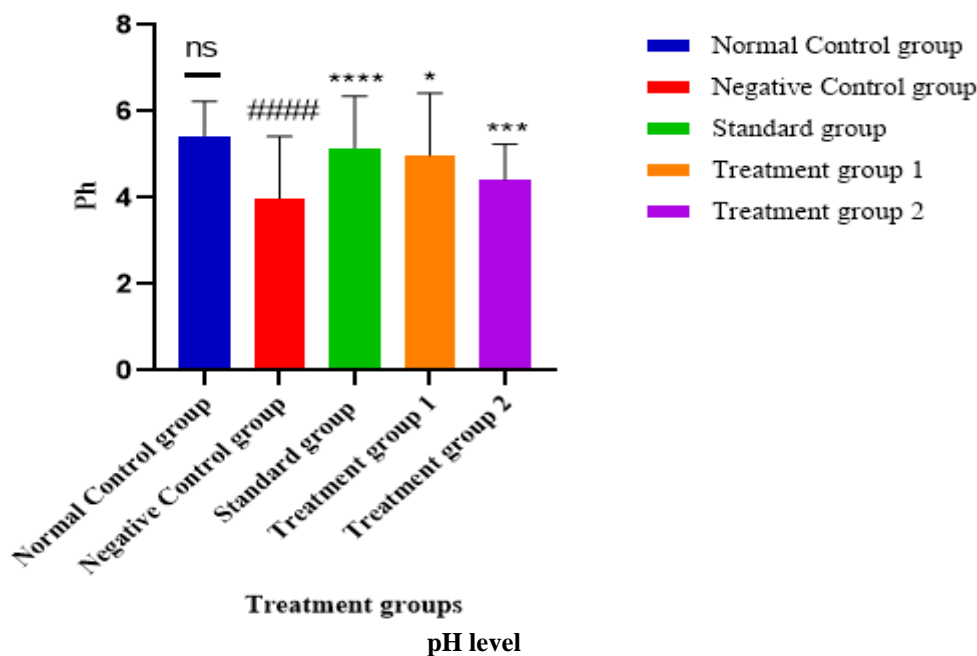
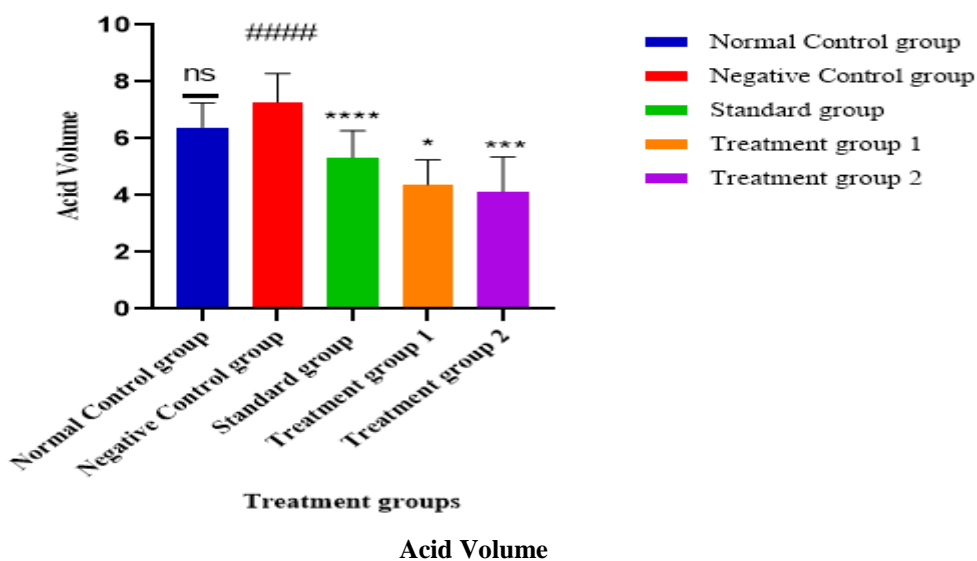
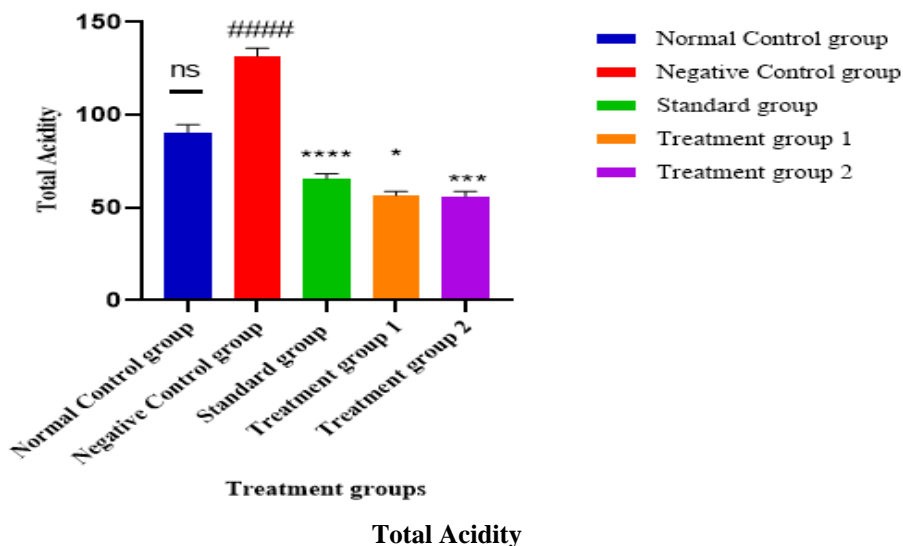
Total Anti-ulcer study

Treatment	No of animal	Ulcer Index	Total Acidity (mEq/L)	Acid Volume (ml)	Ph
GROUP-1	6	8.99±0.24	87.54±0.11	5.79±0.34	4.88±0.22
GROUP-2	6	10.37±0.56	128.74±0.43	6.58±0.38	2.96±0.35
GROUP-3	6	7.19±0.13	63.52±0.46	4.67±0.29	4.31±0.38
GROUP-4	6	6.27±0.19	55.05±0.72	3.76±0.27	3.97±0.39
GROUP-5	6	4.83±0.68	53.99±0.68	3.27±0.21	3.83±0.16
SD		2.190	31.536	1.377	0.703
SEM		0.979	14.10	0.615	0.314

Total Anti-ulcer study



Ulcer Index



Determination of free and total acidity

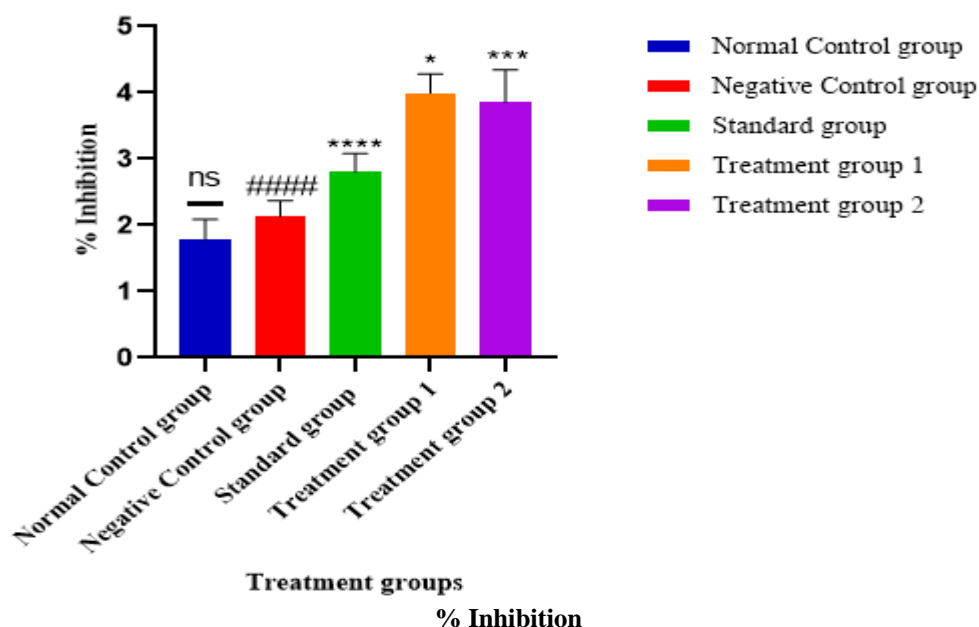
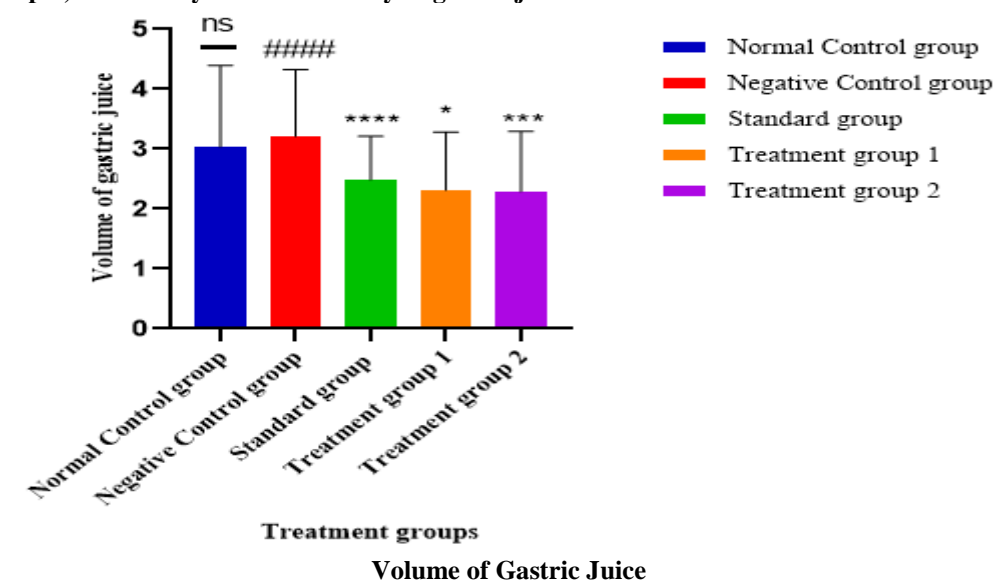
After expelling the 0.01 N sodium hydroxide, the fluid will be yellowish and white, and you'll include 2-3 drops of Topfer's reactant. 1 millilitre of stomach liquid is measured utilizing this pipette. There were a few dissolvability bases to chose from. That's identical to

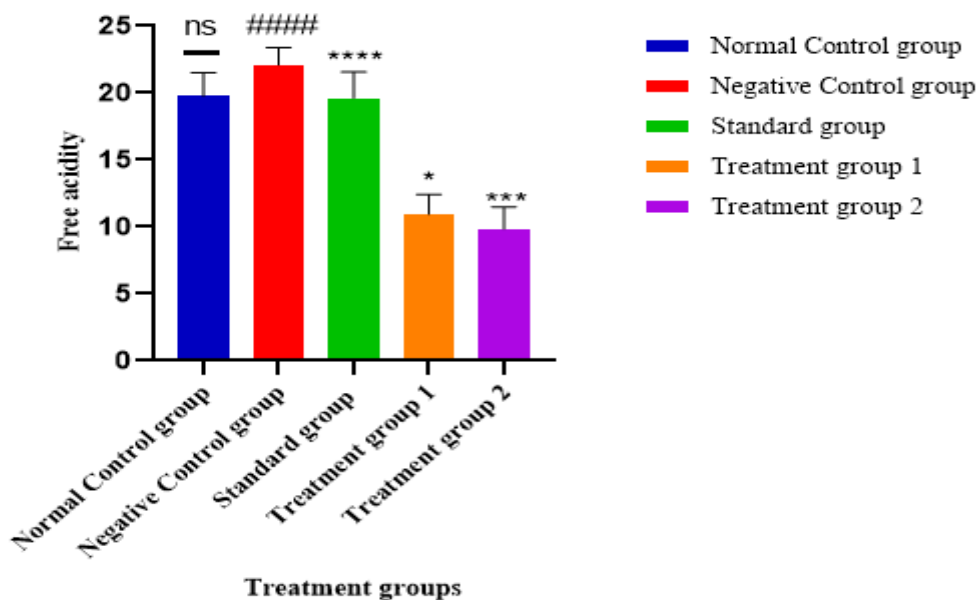
claiming that this adequacy is as sharp because it can be without any confinements. There were two or three phenolphthalein compositions utilized, and the titration was decreased until an unequivocal red tinge shaped. The entire anti-acid dosage was computed.

Estimation of pH, free acidity and total acidity of gastric juice

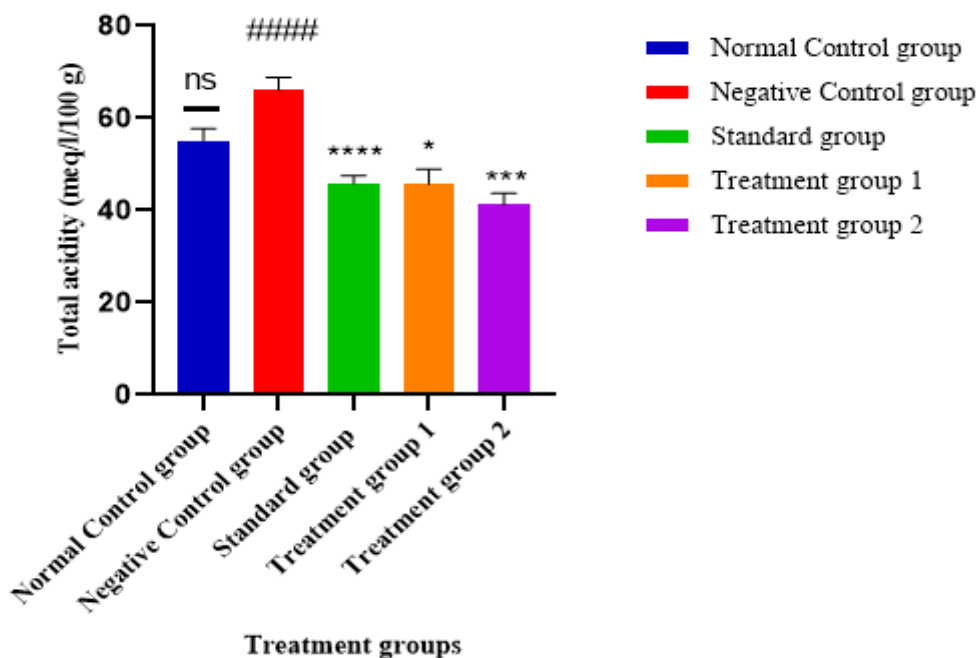
Grouping of animals	Volume of gastric juice (ml)	% Inhibition	Free acidity (meq/l/100 g)	Total acidity (meq/l/100 g)
GROUP-1	2.07±0.03	1.57±0.03	18.52±0.06	53.38±0.02
GROUP-2	2.42±0.05	1.95±0.02	21.18±0.04	64.03±0.03
GROUP-3	1.97±0.06	2.60±0.04	18.23±0.05	44.55±0.04
GROUP-4	1.63±0.04	3.79±0.02	9.89±0.02	43.37±0.05
GROUP-5	1.58±0.02	3.50±0.05	8.68±0.03	39.53±0.06
SD	0.344	0.958	5.626	9.826
SEM	0.153	0.428	2.516	4.394

Estimation of pH, free acidity and total acidity of gastric juice





Free Acidity



Total Acidity

Estimation of total proteins

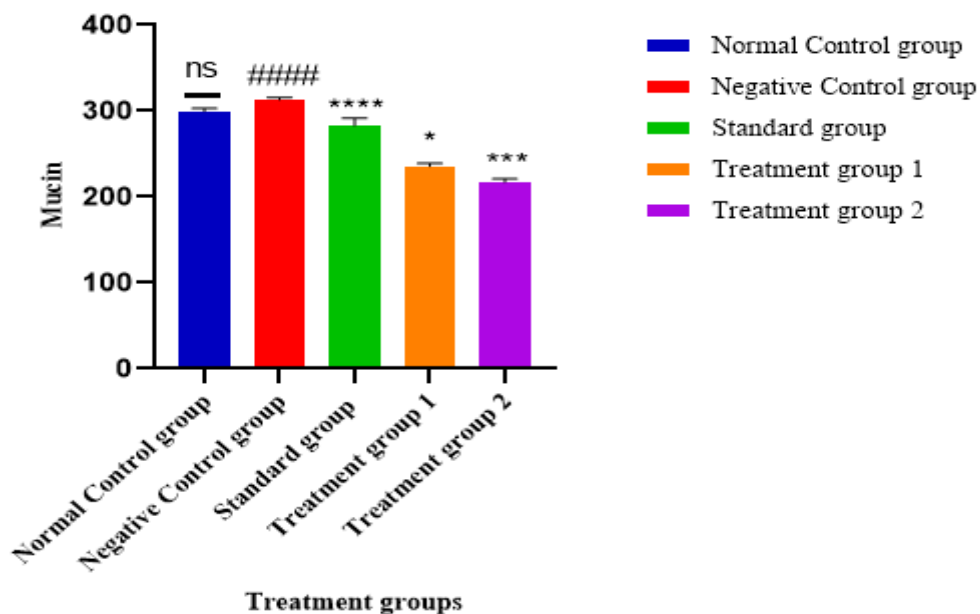
The ethanol speeding up is thought to have changed over 90% of the gastric juice alcohol into protein at a 9:1 proportion. One liter (0.1 ml) of the weakened gastric juice was isolated and 0.5 liter (0.1 ml) was measured in a partitioned weighing tank. After 10 minutes, include and spare 4 milliliters (10 ml) of a dissolvable blend. After including 0.4 ml of phenol reagent and holding up 10 minutes, the colour advancement prepare was

repeated. The Hitachi 15-20 spectrophotometer was utilized to evaluate the filtration system's viability in cleansing the water employing a standard 610 nm setup. For assimilation, the juice was given out in microgram/ml measurements, and Bovine Egg White was utilized on a normal premise to bend the protein level. The t-test was utilized to survey the degree of variety within the data.

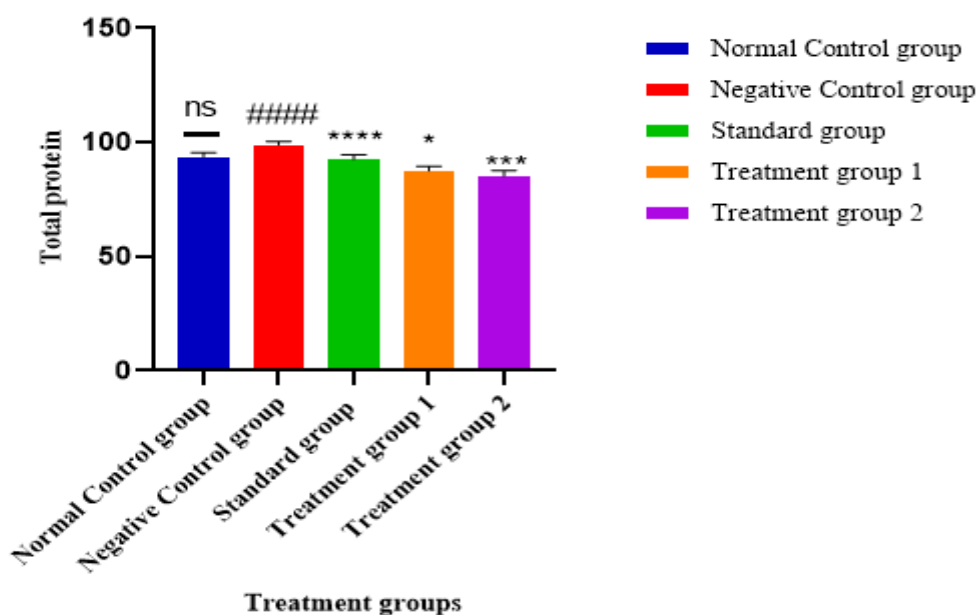
Estimation of mucin, total protein and pepsin activity

Grouping of animals	Mucin	Total protein ($\mu\text{g/ml}$)	Pepsin activity ($\mu\text{mole/ml}$)
GROUP-1	297.04 \pm 0.03	92.45 \pm 0.02	30.66 \pm 0.02
GROUP-2	311.65 \pm 0.05	97.84 \pm 0.03	38.32 \pm 0.04
GROUP-3	276.47 \pm 0.06	91.14 \pm 0.05	29.09 \pm 0.06
GROUP-4	233.04 \pm 0.02	86.00 \pm 0.06	28.71 \pm 0.05
GROUP-5	214.23 \pm 0.05	83.47 \pm 0.02	24.78 \pm 0.03
SD	41.60	5.64	4.97
SEM	18.60	2.52	2.22

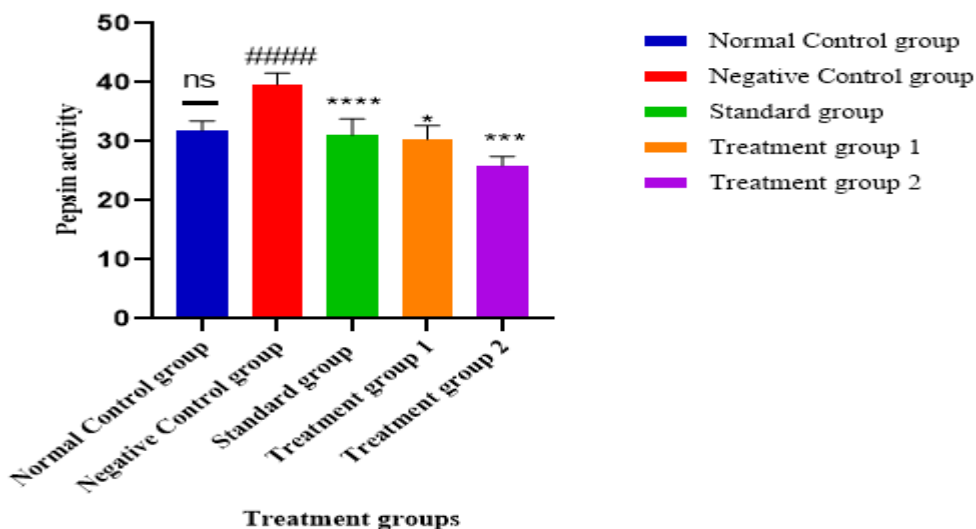
Estimation of Mucin, Total Protein and Pepsin Activity



Mucin Level



Total Protein



Pepsin Activity

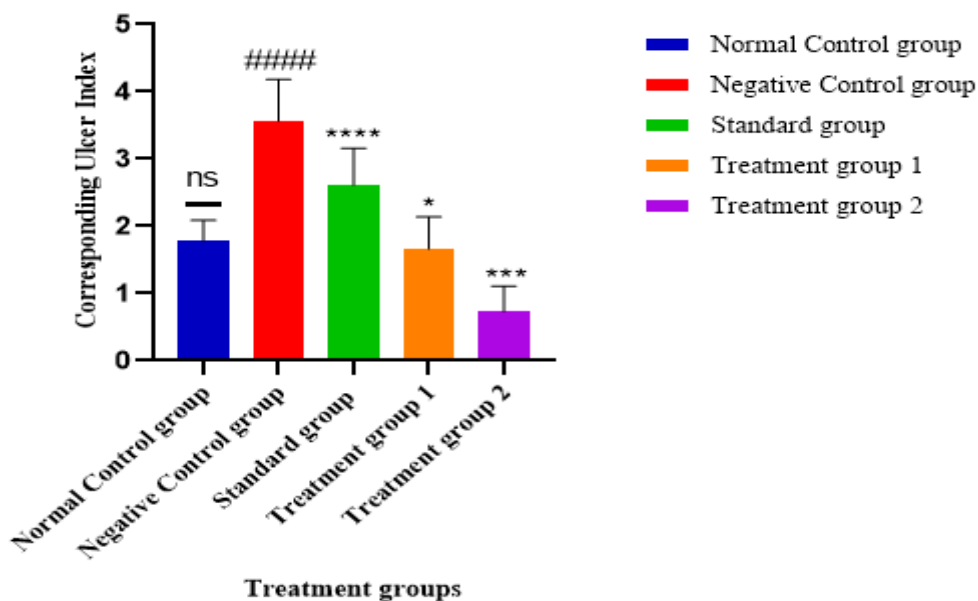
Estimation of mucin

The gastric juices were sliced to remove the glandular bundle showing a decrease in flow and slack. After being exposed to 0.05 M HCl, a damaging acidic corrosive, for 2 hours, alcian 8GX was debased to 0.16 M saccharose. The pH of the fluid remained at a tamponic level throughout. 0.25 M sucrose was added to deionized water and washed for 15 and 45 minutes. Following the

reinforcement of a body fluids in a 10 ml aliquot of 0.5 M magnesium chloride, we swam for two hours at the Color Complex. As the diethyl ether concentration dropped, at 607 nm began to record a gradual fading of the component highlights of the fluid stage. As a result, we chose the mucin fabric represented by regular micrograms per gramme of watery organ tissue.

The relative area and corresponding ulcer index (NSAIDS).

Groups	Relative area/mm ²	Ulcer index
GROUP-1	11-20	1.56
GROUP-2	91-100	3.13
GROUP-3	41-50	2.22
GROUP-4	21-30	1.32
GROUP-5	1-10	0.46
	Perforation	1.0



ULCER INDEX

DISCUSSION

The results of the following research project demonstrate the gastro-protective effects of DAMMUL AKHWAIN ETHANOLIC EXTRACT on INDOMETHACIN-induced rat model ulcers. The gastroprotective impacts were context-dependent in both the pylorus official rats and the gastric ulcerogenesis models. The defensive impact was found to be related with a lessening within the number of reports of gastric ulcers, as well as a diminishment in gastric outflows, freshness, and sudden onset caused by NF-kB restraint, neutrophil acknowledgment, and ROS crash due to the antioxidant the substance's characteristics.

With Group 5 (Elevated Dose), in addition to a decrease in acid volume, as well as the highest degree of antiulcer behaviour, which may be attributed to the smallest number of ulcers. These discoveries are quite significant. It was discovered that the amount of inhibition of gastric juice in the extract categories was on the moderate to low side.

CONCLUSION

The results reported above suggest that DAMMUL AKHWAIN ETHANOLIC EXTRACT may serve as an enhancer in the ulcer treatment by reducing the need for the use of oral NSAIDS often used in conventional therapy. The efficacy and viability of long-term use of this sedative as a potential antiulcer medicine were established using a planned clinical approach and the assistance of lower measures of the DAMMUL AKHWAIN formula. This goal was reached.

The increased frequency of stomach ulcerations was due only to INDOMETHACIN medication. There is no additional pain relief effect beyond that of the stratified components of the selected measures since the combination of medicinally induced DAMMUL AKHWAIN with INDOMETHACIN has an additional pain relief impact on INDOMETHACIN by itself and is not demonstrated to be ulcerative. Because of the synergistic pain-relieving effects, the two are often used together in medical care.

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