

FORMULATION AND EVALUATION OF HERBAL ANTIULCER SYRUP CONTAINING PUNICA GRANATUM EXTRACT

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ABSTRACT:-

An ulcer is a painful open sore which observed in the surface lining or mucosa. Ulcers which also forms inflammation of the surficial layers of the organ. Ulcers are the open sore which affects the stomach and the upper part of the small intestine. Ulcers which seen in the upper part of the small intestine is called as duodenum ulcer and ulcer which affects the stomach called as stomach ulcer. The most common symptom of peptic ulcer is the abdominal pain. Peptic ulcer is the breakdown of the upper part of the small intestine or lower part of the esophagus. From many medicinal plants the several chemical compounds are also isolated which are having the anti ulcer activity. Treatment of peptic ulcer includes the pain relieve, delay ulcer recurrence and healing the ulcer. This review includes the knowledge about the some medicinal plants from the herbal medicinal plants from the herbal origin which are used in the Ayurvedic system of medicine. The punica granatum widely used for the antiulcer activity. The powder of

Punica granatum was extracted by doing the decoction method. The decoction of the punica granatum leaves was evaluated by the aid neutralizing capacity.

Key Points:-

1] Causes:- (*H. Pylory*)

Regular use of nonsteroidal anti- inflammatory drugs. Eg. Aspirin, Ibuprofen etc.

2] Symptom:- Burning, abdominal pain, nausea, bleaching, omitting, weight loss, bloating etc.

3] Diagnosis :- Physical examination diagnostic test like endoscopy, blood test etc.

For detection of Pylori breath test is used.

4] Treatment:- For the treatment of ulcer Proton pump inhibitors are used to reduce production of stomach acid.

For eradicate *H. Pylori* antibiotics are used.

Changing lifestyle eg. Avoiding some foods, smoking, reduce stress.

5] Some basic steps used for preparation:-

i) Decoction

ii) Straining

iii) Sweetening

iv)Flavoring

v) Preservatives

vi) Storge

Introduction: -

Ulcer

An ulcer is a painful open sore which observed in the surface lining or mucosae. Ulcers can occur in various parts of the body, but they are commonly associated with the gastrointestinal tract. The main types of ulcers are peptic ulcers or ulcers which are Usually found in the stomach (Gastric ulcers) or the upper part of the

small intestine that means (Duodenal ulcers). Most common causes of ulcers includes infection with the bacterium *Helicobacter pylori* or extended use of nonsteroidal anti-inflammatory drugs that means (NSAIDs). Include Symptoms Burning stomach pain, bloating, nausea, and in severe cases, bleeding or perforation of the ulcer. Found in the mouth, including on the inner cheeks, lips, tongue, and gums. Multiple factors that can be contribute, such as minor injury as well as stress along with certain medical conditions or autoimmune disorders. Symptoms like Pain or discomfort, especially while eating or drinking, and sometimes accompanied by redness and inflammation. Ulcers can vary in severity, and complications may arise if left untreated. Diagnosis often involves endoscopy, imaging studies, or other laboratory tests. Treatment depends on the underlying cause and may include medications to reduce stomach acid production, antibiotics to treat bacterial infections, and lifestyle modifications.

It is very important to get in touch with a doctor if you suspect you have an ulcer. Diagnosis and appropriate treatment can help reduce symptoms and prevent complications.

Ulcers which seen in the upper part of the small intestine is called as duodenum ulcer and ulcer which affects the stomach are called as stomach ulcer. The most common symptom of the ulcer is the abdominal pain.

Peptic ulcers:-Peptic ulcer is the breakdown of the lining of the stomach, the upper part of the small intestine or the lower part of the esophagus. Peptic ulcer

formation is dependent on the peptic activity and the presence of the acid in gastric juice .treatment of peptic ulcer includes the pain relief, delay ulcer recurrence and healing the ulcer.

This review includes the knowledge about the some medicinal plants from the herbal origin which are used in Ayurvedic and also used in the modern science to treat or prevent the peptic ulcer. Herbal drugs are cost effective than the synthetic drugs. The punica granatum leaves (L) are widely used for the antiulcer activity.

Aim of this research is the formulation and evaluation of Herbal syrup for the treatment of ulcers. (mainly to treat peptic ulcer).

From many medicinal plants the several chemical compounds are also isolate which are having the antiulcer activity.

Antiulcer activity:-

A Syrup is a pharmaceutical product which consists of a concentrated or viscous aqueous solution of sugar usually sucrose which often containing preservatives, medicinal agents or flavorings. Herbal formulation is a dosage from herbal origin which provides specific nutritional cosmetic and health benefits and used to diagnose and treat human brings or animals. Sucrose content in water is approximately (85%).

Classification of syrup:-

1. Simple syrups

Mainly the syrups are saturated or concentrated viscous aqueous solutions containing sucrose/sugar substitutes with or without flavoring agents in purified or distilled water. Simple syrup contains 85%

w/v (65% w/w). 1.313 (USP) or 66.7% w/w according to Indian Pharmacy/BP is the used specific gravity for the preparation of syrup.

2. Medicated syrup

Medicinal or therapeutic syrup containing active ingredients. Example—cough syrup.

3. Flavored syrups

With medicinal substances, syrups are not flavored but with flavoring agents syrups get flavoring. syrups which usually consists simple sugar syrup that is Mixed thoroughly with water and after heated in natural or artificial flavors are also dissolved. Herbal syrup is prepared by adding concentrated decoction of herbs with either sucrose, (Substitution of sugars). For the thickening of Syrup we added g. It also responsible for a shelf life of a formulation by making a solution more concentrated. And final product was consumable. It is also defined as the viscous liquid which containing concentrated solution of sugar and water with adding or without non added or added flavorings or pharmaceuticals in the syrups.

Ingredients used in formulation

1. Punica granatum

Botanical name: P.Granatum Family: pomegranate

Use: It shows antiulcer activity as well as acts as Flavoring agent.

2. Sugar

It consist stem of plant Saccharum officinarum Botanical name: Saccharum officinarum Family: Poaceae.

Use:- It helps to improve shelf life of product and mainly acts as an preservative .

4. Sodium benzoate

It used as a preservative.

5. Glycerine:-As thickening agent.

Method of preparation:-

1. Collection of plant:-

Isolate the leaves of punica granatum (L) from their herbal origin or natural habitats in Tamil Nadu,

Mecheri and Salem District.

2. Plant decoction:-

Add 20 gm of Punica Granatum (L) leaf powder in 180 ml of distilled water and boiled the mixture until the total volume is reduced to one fourth of the initial volume.

Then, cooled the boiling mixture and filter it.

This filtrate then use for the preparation of the final herbal syrup.

Table 1: Formula for simple syrup :-

Sr.No.	Ingredients used	Quantity required
1.	Sucrose	66.7 gm
2.	Distilled water	100 ml

1. Dissolve 66.7 gm of sucrose in 100 ml of distilled water by gentle heating.

2. Then allow it to cool and strained it , and use it as syrup base for formulation of the final antiulcer syrup .

Table 2 formula for final anti-ulcer herbal syrup:-

Sr.No.	Ingredients	Quantity	Role
1.	Punica Granatum (L) extract	6 ml	Antiulcer activity
2.	Glycerine	1.5 ml	Thickening agent
3.	Sodium benzoate	0.2 ml (0.2%)	Preservative
4.	Raspberry	1.5 ml	Flavouring agent
5.	Simple syrup	20.88 ml	Syrup base

Method:-

Preparation of final antiulcer herbal syrup:-

Procedure:-

Firstly we have to need take previously prepared punica granatum decoction.



Take 6 ml of punica granatum extract into the beaker.



Now add 1.5 ml of glycerine into the punica granatum extract, mix it well. Glycerine acts as thickener in this syrup.

Then add 0.2 ml that is 0.2% sodium benzoate into the above mixture and again mix it well. Sodium benzoate shows preservative action.



Now add 1.5 ml of raspberry into the mixture which is the natural flavoring agent.



Now make up the final volume of the syrup by using simple syrup as a syrup base.

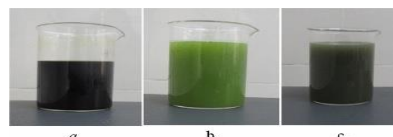


Add 20.88 ml Simple syrup for the final volume of the antiulcer herbal syrup

Punica granatum leaves



Punica granatum powder



Punica granatum extract

Sample Label for Herbal Antiulcer Syrup

Herbal Antiulcer Syrup

Sr.No.	Ingredients	Quantity
1.	Punica granatum (L) extract	6 mi
2.	Glycerine	1.5 ml
3.	Sodium benzoate	0.2 ml
4.	Raspberry	1.5 ml
5.	Simple syrup	20.88 ml

Dose: 10-15 ml , 2-3 times a day

Direction: Protect from sunlight, keep away from children

Uses: To treat peptic ulcer

Expiry Date: 2-3 years from date of manufacturing

Shelf life according to storare condition:

At room temperature: 18-24 months

At Cool and dry place: 24-30 months

At Cold temperature(Refrigerator): 36 months

Evaluation:-

Physicochemical parameters:-

1. Physical appearance:-

a. Colour examination:-Vidually assess the colour of the syrup against a white background.

b. Odour examination:-Smell the syrup individuall , with a 2 minute gap between sniffs .

c. Taste examination:-Taste examination is done on the taste buds of the tongue.

d. PH determination:-Measure the PH of the syrup using the digital Ph meter.

2. Density determination:-

- Use a specific gravity bottle to measure the weight of the syrup.

- Calculate the density using the formula: Density = (weight of syrup / weight of distilled water) X Density of distilled water.

3. Specific gravity determination:-

- use a specific gravity bottle to measure the weight of the syrup.

- Calculate the specific gravity using the formula: Specific gravity = weight of syrup / weight of distilled water.

4. Viscosity Determination:-

- For the measurement of flow time, Ostwald viscometer is used.

- calculate the viscosity using the formula: Viscosity = (flow time of syrup / flow time of distilled water) x viscosity of distilled water.

These evaluation tests provide essential information about the physical and chemical properties of the herbal syrup, which can be impacts its stability, efficacy and safety.

DISCUSSION

In today's life herbal products are safe and synthetic drugs which are regarded as unsafe to human being and environment. And herbal ingredient's plays their roles in the diseases treatments in ancients of times which is medicinal flavoring and others. It's important to promote. The herbal product which can we make have anti-oxidant activity One kiwi fruit contains about 100 mg vitamin C. it can plays important role in a e platelet aggregation and plasma triglyceride level were reduced after 28 days of fruit consumption. It

helps to promote natural sleep. It is also helps to reduce the risk of cancel.

Conclusion:-

The herbal antiulcer syrup is natural and safe treatment that helps alleviated ulcer – related issues. The herbal ingredients used such as Punica granatum possess anti-inflammatory and primarily antiulcer activity and mucosal protective properties that aid in ulcer treatment.

The use of this syrup results in reduction of ulcer symptoms and improvement in gastrointestinal and helps strengthen the digestive system.

In conclusion, the herbal antiulcer syrup is an effective and safe treatment that helps alleviated ulcer – related issues.

The conclusion observed from this research was, the ulcer reduces significantly at the dose of 500 mg/ml to neutralizing acid more significantly as compairing with standard and significant acid neutralizing capacity of ANC50 ulcer at the dose of 75 mg/ml.

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