

A review on gastric ulcer remedies used in Unani System of Medicine

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Abstract

Peptic ulcer is the erosion in lining of stomach or duodenum. The word 'Peptic' refers to pepsin, a stomach enzyme that break downs proteins. Peptic ulcer located in the stomach is called gastric ulcer. Normally the linings of the stomach and small intestine have protection against the irritating acid produced in stomach. For a variety of reasons, the protective mechanism may become faulty, leading to a breakdown of the lining. The result is inflammation (gastritis) or an ulcer.

It is believed that adults in high stress jobs are mostly affected by gastric ulcer, but people of any age even children are found affected by this problem. Ulcer is curable with the combination of different kind of antibiotics, an acid reducer and H2 receptor blockers, proton pump inhibitors, etc., which are expensive to a common man and have prolong side effects also. In Unani system of medicine plants, animals as well as mineral origin drugs are being used clinically for the treatment of this disease without any side effect. These are time tested, centuries old, safe for use and cost effective. However, there is a need to maintain their purity, quality and safety by subjecting to scientific validation. Experimentally studied as well as potential medicinal plants used for gastric ulcer in Unani system of medicine are being discussed in this paper.

Keywords : Peptic ulcer, Gastric ulcer, Unani system of medicine, Unani drugs.

IPC code; Int. cl.⁷ — A61K 35/78, A61P 1/04

Etiology and Pathogenesis

Genetic predisposition:

Heredity has been postulated to play a role in the pathogenesis of ulcer disease. Several rare genetic syndromes are associated with peptic ulcer, e.g. multiple endocrine neoplasias, etc.

Abnormalities in secretion of acid and pepsin: Acid-pepsin appears to be important in the pathogenesis of gastric ulcer. However, in contrast to duodenal ulcer, gastric ulcer patients generally have acid secretory rates that are normal or reduced as compared with non-ulcer patients.

Abnormalities of mucosal defense: Diminished blood flow may lead to cell injury and ulceration in some patients. Gastric mucosal ischemia is believed to be a factor in the pathogenesis of acute mucosal injury and decreased bicarbonate secretion is a possible cause for diminished mucosal defense.

Delayed gastric emptying: Gastric emptying has been found to be delayed in gastric ulcer. Prolonged gastric emptying causes stasis and delayed clearing of duodenal contents that have refluxed into the stomach. This in turn could damage gastric mucosa, cause gastritis and lead to ulceration.

Introduction

Qarah-e-Medi (Gastric Ulcer) is a common disorder of the gastrointestinal system, which causes much discomfort to patients, disrupting their daily routines and causing mental agony. It is generally more common in those who keep themselves in hurry, becomes worry and consumes curry. In Unani system of medicine, Unani scholars mentioned the following causes of Qarah-e-Medi (Gastric Ulcer), viz. Khilte Had (Hot and Irritant humour), Fuzlat (Waste Products), intake of hot and spicy foods, excessive intake of rotten food, alcohol and hard fibrous diet, desensitization of

internal surface of stomach which causes excessive gastric secretions, chronic gastritis and indigestion, prolonged stress and strains and unabsorbed gastric secretions¹⁻¹¹.

In western medicine, ulcers are defects in the gastrointestinal mucosa that penetrate the muscularis mucosa. This distinguishes them from superficial erosions, which do not extend through the muscularis mucosa. Originally, all the ulcers in the upper gastrointestinal tract were believed to be caused by the aggressive action of hydrochloric acid and pepsin on the mucosa. Thus, they are known as peptic ulcers¹².

Reflux of bile and pancreatic juice: Regurgitation of duodenal contents, especially those containing bile, may induce gastric mucosal injury and subsequent gastric ulceration.

Emotional stress: Emotional stress may alter factors that maintain mucosal integrity and thereby ulcers developed because of decreased mucosal defense¹³.

Role of Microbes: The bacteria *Helicobacter pylori* have revolutionized approach of peptic ulcer diseases and gastritis. Almost all patients with duodenal ulcer and 80% of patients with gastric ulcers are infected with *H. pylori*. The organism is also associated with chronic active gastritis (stomach inflammation) and may also play a role in non-ulcer dyspepsia (the belching and bloating symptoms of indigestion). *H. pylori* infection has also been associated with a slightly increased risk of gastric cancer.

Unani physicians recommend Usool-e-Ilaj (Unani principles for treatment) in following steps for the treatment of Qarah-e-Medi.

1. Use of Qabizat (Astringent drugs) for binding effect of ulcers.
2. Intake of easily digestible food.
3. Avoiding of corrosive drugs, e.g. Copper sulphate, White lead, Verdigris, Rust, etc.
4. Mugharriat (agglutinant) along with mudammilat (cicatrizent) drugs is used in case of oesophageal ulcers, e.g. Samaghe arbi (Gum acacia) or Samaghe kateera (Gum kateera).

5. To prevent haematemesis, Qurse Kahruba, Rubbe Ghafis and Rubbe Afsanteen are given as drug¹⁰.
6. To clear the site of ulcer munaqqiat (cleansers) like Jali (detergent) and Muzalliq (demulcent) drugs, e.g. Maul Asl (aqueous solution of honey) and Julab (compound of honey and Arqe Gulab) are given.
7. To clear slough and debris from the ulcer, Ayaraj faiqra followed by Sharbat-e-Anar (*Punica granatum* syrup) or Sharbat-e- Bel (*Aegle marmelos* syrup) are given.
8. Jazib (desiccant) and mudammil (cicatrizent) drugs are effective after complete clearing of slough from ulcers^{1, 2, 4, 5, 11, 14}.
9. Constipation can be treated with drugs like *Amaltas* (*Cassia fistula*).
10. Diarrhoea may be managed with Qurse Tabashir Qabiz^{1, 4, 11}.
11. In case of nausea and excessive secretions of bile, vomiting is induced by Aabe Anar after giving Maush Shaer^{1, 4}.

The present paper deals with both types of antiulcer plants: (i) plants which are used in Unani System of Medicine and have been validated by experimental studies; (ii) potential antiulcer plants, animals and minerals which are used in Unani medicines but experimental study is yet to be done.

Experimentally studied plants

Some plants which are used in Unani System of Medicine and their

antiulcer activity has been validated by pharmacological studies are summarized below:

1. **Elva** (*Aloe barbadensis* Mill.; Family- *Liliaceae*)

Oral administration of the plant extract (leaves) significantly reduced both the number of ethanol induced gastric lesions as well as lesion index in experimental rats¹⁵.

2. **Khulanjan** (*Alpinia galanga* Willd.; Family- *Zingiberaceae*)

Ethanol extract of rhizomes exhibited gastric antisecretory, antiulcer and cytoprotective activities in rats¹⁶.

3. **Khatami** (*Althaea rosea* Linn.; Family- *Malvaceae*)

The damages of mucus membrane of rat stomach, caused by Aspirin and Atophan were considerably decreased by polysaccharides obtained from stem¹⁷.

4. **Gaozaban** (*Anchusa strigosa* Labill.; Family- *Boraginaceae*)

Aqueous extract of roots showed significant protection against ethanol induced ulcers¹⁸.

5. **Bhui neem** (*Andrographis paniculata* Wall. ex Nees; Family- *Acanthaceae*)

A flavone from the herb produced significant antiulcer activity in rats and guinea pigs¹⁹.

6. **Asl-us-soos** (*Glycyrrhiza glabra* Linn.; Family- *Fabaceae*)

Carbenoxolone, isolated from

rhizome was found to be quite effective in the management of peptic ulcer²⁰. Powdered drug (3g) is given twice a day in empty stomach in weekly follow up and recovered cases followed up monthly up to three months, which showed significant results²¹.

7. **Adrak (*Zingiber officinale* Rosc.;** Family- *Zingiberaceae*)

On oral administration of acetone extract of rhizome, zingiberone, the main terpenoid of acetone extract and gingerol, terpenoid pungent principle of the rhizome, significantly prevented gastric lesions in HCl/ethanol induced gastric lesions in rats²². Sesquiphellandrene, besabolene and 6-shogaol, some active principles of Taiwan ginger also produced antiulcer activity in HCl/ethanol induced gastric lesion in rats²³.

8. **Asgand [*Withania somnifera* (Linn.) Dunal.;** Family- *Solanaceae*]

Withanolide-free aqueous fractions exhibited significant antistress activity in immobilization induced gastric ulceration²⁴.

9. **Kutki (*Picrorhiza kurroa* Royle ex Benth.;** Family- *Scrophulariaceae*)

Ethanol extract of rhizomes and roots on oral administration showed significant prevention of ulcers²⁵.

10. **Amla (*Emblica officinalis* Gaertn.;** Family- *Euphorbiaceae*)

The butanolic extract of the water fraction of fruits possess an antioxidant property, responsible for cytoprotective action in rats gastric ulcers induced by Indomethacin. The alcoholic extract of fruits also indicated a significant reduction in the ulcer score and acidity^{26,30}.

11. **Kalonji (*Nigella sativa* Linn.;** Family- *Ranunculaceae*)

The administration of *Nigella sativa* oil produced a significant increase in glutathione level, mucin content and free acidity and a significant decrease in gastric mucosal histamine content in ethanol induced ulcers in rats²⁷.

12. **Kela (*Musa paradisiaca* Linn. syn. *M. sapientum* Linn.;** Family- *Musaceae*)

Methanolic extract of Plantain banana pulp (50mg/kg, twice daily for 5 days) showed significant antiulcer effect and antioxidant activity in gastric mucosal homogenates, where it reversed the increase in ulcer index, lipid peroxidation and super oxide dismutase values in 2 hours cold restraint stress induced rats²⁸.

13. **Karela (*Momordica charantia* Linn.;** Family- *Cucurbitaceae*)

The Olive oil extract and dried powdered fruits in filtered honey showed significant and dose dependent anti-ulcerogenic activity against ethanol-induced model. Furthermore ethanol extract of the fruits showed significant activity against HCl-EtOH induced

ulcerogenesis in Indomethacin pretreated rats and diethyl di-thio-carbamate induced ulcer models²⁹.

14. **Haldi (*Curcuma longa* Linn.;** Family- *Zingiberaceae*)

Ethanol extract produced significant anti-ulcerogenic activity in rats subjected to hypothermic restraint stress, pyloric ligation, Indomethacin and Reserpine administration³¹.

15. **Heel kalan or Bari Ilaichi (*Amomum subulatum* Roxb.;** Family- *Zingiberaceae*)

Crude methanolic extract and its different fractions inhibited gastric lesions induced by ethanol significantly. Ethyl acetate fraction protected the wall mucous in pylorus ligated rats. Gastric motility reduced by essential oil and petroleum ether fractions suggests the gastro-protective action³².

16. **Heel khurd or Choti Ilaichi (*Elettaria cardamomum* Maton.;** Family- *Zingiberaceae*)

A crude methanolic extract (TM), essential oil (EO), petroleum ether soluble (PS) and insoluble (PI) fractions of methanolic extract, were studied in rats at doses of 100-500, 12.5-50, 12.5-150 and 450mg/kg, respectively for their ability to inhibit the gastric lesions induced by Aspirin, ethanol and pylorous ligation. All fractions (TM, EO, PS, PI) significantly inhibited gastric lesions induced by ethanol and Aspirin but not those induced by pylorus ligation³³.

17. **Satawar** (*Asparagus racemosus* Willd.; Family- *Liliaceae*)

Oral administration of powder of dry roots prevented the formation of duodenal ulcer in rats³⁴.

18. **Bael** (*Aegle marmelos* Correa ex Roxb.; Family-*Rutaceae*)

Luvangetin, a pyranocoumarin isolated from the seeds showed significant protection against pylorus ligated and Aspirin induced gastric ulcers in rats³⁵.

19. **Neem** (*Azadirachta indica* A. Juss.; Family- *Meliaceae*)

Stearic and palmitic acid isolated from the nimbidin fraction of neem seeds oil showed antiulcer activity³⁶.

20. **Taj** (*Cinnamomum cassia* Blume; Family-*Lauraceae*)

Cassioside and cassiol, two components obtained from the bark produced antiulcer activity³⁷.

21. **Jaiphal** (*Myristica fragrans* Houtt.; Family- *Myristicaceae*)

Eugenol, active principle of Nutmeg seeds significantly reduced gravity of lesion and numbers of gastric ulcers³⁸.

Potential antiulcer plants, animals and minerals

Unani system of medicine has vast treasure of natural products in its repository that cure Qarah-e-Medi (Gastric Ulcer) significantly. But there is a need to validate their efficacy and safety by experimental studies and clinical trials. List of such potential plants, animals and minerals with their Unani, English and botanical names along with parts used are given in Table 1.

Table 1 : List of potential single drugs of plant, animal and mineral origin in vogue in Unani System of Medicine^{1, 3-11, 39}

S. No.	Unani common name	English name and parts used	Botanical/Scientific name
1.	Aaqarqarha	Spanish Pellitory (Root)	<i>Anacyclus pyrethrum</i> DC.
2.	Aas	Myrtle (Fruits)	<i>Myrtus communis</i> Linn.
3.	Afsanteen	Common Sagewort (Whole Herb)	<i>Artemisia absinthium</i> Linn.
4.	Afyoon	White poppy (Latex)	<i>Papaver somniferum</i> Linn.
5.	Ajwain Desi	Ajowan (Fruits)	<i>Trachyspermum ammi</i> (Linn.) Sprague
6.	Amaltas	Golden Shower (Pods)	<i>Cassia fistula</i> Linn.
7.	Anar	Pomegranate (Flower, Seeds)	<i>Punica granatum</i> Linn.
8.	Anisoon	Anise (Seeds)	<i>Pimpinella anisum</i> Linn.
9.	Anjabar	Bistort (Root)	<i>Polygonum bistorta</i> Linn.
10.	Aqaqia	Babul (Extract)	<i>Acacia arabica</i> Willd.
11.	Aspaghhol	Spogel Seeds (Seeds, Husk)	<i>Plantago ovata</i> Forsk.
12.	Babuna	German Chamomile (Whole Herb)	<i>Matricaria chamomilla</i> Linn.
13.	Badam	Almond (Kernels)	<i>Prunus amygdalus</i> Batsch.
14.	Badiyan	Sweet fennel (Fruits)	<i>Foeniculum vulgare</i> Mill.
15.	Bartang	Ribwort (Seeds)	<i>Plantago lanceolata</i> Linn.
16.	Bedanjeer	Castor Plant (Oil)	<i>Ricinus communis</i> Linn.

S. No.	Unani common name	English name and parts used	Botanical/Scientific name
17.	Behi	Quince (Fruits)	<i>Cydonia oblonga</i> Mill.
18.	Boora-e-Armani	Arminian Earth	Aluminium silicate
19.	Busad	Coral	<i>Corallium rubrum</i>
20.	Damm-ul-Akhwain	Socotra dragon (Gum)	<i>Dracaena cinnabari</i> Balf.f.
21.	Gul-e-Surkh	Red Rose (Flower)	<i>Rosa damascena</i> Mill.
22.	Kahruba	Baltic Amber (Resin)	<i>Pinus succinifera</i> Linn.
23.	Kasni	Chicory (Leaves, Root)	<i>Cichorium intybus</i> Linn.
24.	Kateera	Gum tragacanth (Gum)	<i>Astragalus gummifer</i> Linn.
25.	Khira	Garden cucumber (Seeds)	<i>Cucumis sativus</i> Linn.
26.	Khurfa	Common purslane (Seeds)	<i>Portulaca oleracea</i> Linn.
27.	Kishniz	Coriander (Fruits)	<i>Coriandrum sativum</i> Linn.
28.	Kundur	Indian Olibanum (Exudates)	<i>Boswellia serrata</i> Roxb. ex Coleb.
29.	Marwareed	Pearl	Calcium carbonate and conchiolin
30.	Mastagi	Mastic tree (Resin)	<i>Pistacia lentiscus</i> Linn.
31.	Maweez (Munaqqa)	Dried grape (Raisins)	<i>Vitis vinifera</i> Linn.
32.	Mazu	Aleppo oak (Gall)	<i>Quercus infectoria</i> Olivier
33.	Murdaar Sang	Massicot	Lead oxide
34.	Mur Makki	Myrrh (Oleo-resin)	<i>Commiphora myrrh</i> Linn.
35.	Mushk	Musk	Musk pods
36.	Pudina	Field mint (Whole Herb)	<i>Mentha arvensis</i> Linn.
37.	Rewand Chini	Chinese rhubarb (Rhizome)	<i>Rheum emodi</i> Baill.
38.	Sandal Safaid	Sandal (Wood)	<i>Santalum album</i> Linn.
39.	Sandal Surkh	Red Sandal (Wood)	<i>Pterocarpus santalinus</i> Linn. f.
40.	Sang Sar-e-Mahi	Fish Otolith	Ear Stone of Calcium carbonate
41.	Tabasheer	Bamboo Manna (Exudate)	<i>Bambusa arundinacea</i> (Retz.) Roxb.
42.	Tamar Hindi	Tamarind (Fruit)	<i>Tamarindus indica</i> Linn.
43.	Teen-e-Roomi (Geru)	Red Ochre	Anhydrous iron oxide
44.	Zafran	Saffron (Stigma)	<i>Crocus sativus</i> Linn.
45.	Zarishk	Indian Barberry (Fruits)	<i>Berberis aristata</i> DC
46.	Zufa	Hyssop (Leaves)	<i>Hyssopus officinalis</i> Linn.



Cassia fistula



Anacyclus pyrethrum



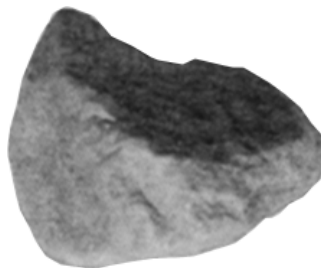
Quercus infectoria



Cydonia oblonga



Cichorium intybus



Geru

In spite of single Unani drugs many compound formulations, used by Unani physicians require scientific rationality of their clinical use on Qarah-e-Medi (Gastric Ulcer) viz., Arqe Gulab, Arqe Biranjasif, Arqe Nankhuwah, Ayaraj Faiqra, Julab, Qurse Kahruba, Qurse Tabasheer Qabiz, Sharbate Anar, Sharbate Dinar, Sharbate Habbul Aas, Sharbate Khashkhash and Sikanjabeen^{1,3-11,39}.

Conclusion

It is apparent from Table 1 that there are many plants, animals and minerals which are being used by Unani practitioners since a long time and also they are reported in classical Unani literature but they lack pharmacological or clinical studies on modern parameters. Hence, it is suggested that relevant studies may be carried on these natural resources for development of new antiulcer drugs in future.

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