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REVIEW ARTICLE

REVIEW: LIST OF MEDICINAL PLANTS FOR GASTRITIS

Poojitha M\*, Swarnalatha G and Meenakshi Sundaram R

Sri Venkateswara College of Pharmacy, RVS Nagar, Chittoor, Andhra Pradesh, 517127

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ABSTRACT

As the gastritis is becoming a major health issue in now days. It is the common most condition and symptom associated with any kind of disease. Even though we have many allopathic drugs to treat the condition but it is not up to the mark. Whereas the condition is repetitive even though it is treated with different kinds of drugs with different drugs in different doses based on the patient condition. In spite of the available treatment there are many adverse effects of those conventional drugs available for treating the condition based on its root of cause. To overcome those adverse effects treatment with herbal medicine is suggested and that too people are choosing the home remedies including small and available herbs in their day to day life. In such a case the treatment for the condition with a non-adverse drugs or medications including plant extracts which has been practised in earlier days is most preferable. The present review focus on the list of conventional drugs available in the market along with their serious adverse effects and also the list of medicinal plants which can be used as an alternative of synthetic drugs without any adverse effects.

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INTRODUCTION

Gastritis is considered as the most common digestive system disorder. This is defined as the discomfort of the digestive system occurred due to the eruption of stomach mucosa. Peptic ulcer affects approximately 10 % of the world's population<sup>[1]</sup>.

The evidenced causes of gastritis are

- Imbalance between protective and aggressive mechanisms of stomach (acid-pepsin, leukotriene and reactive oxygen species).
- Excessive administration of NSAIDs (non-steroidal anti-inflammatory drugs) and alcohol.
- Infection of Helicobacter pylori and
- Emotional stress.

The available therapy for treating gastric ulcers includes either control of the Helicobacter pylori or the control of the H<sup>+</sup>/K<sup>+</sup>-ATPase pump that can decrease the acid secretion, as well as the damage to mucosa. Many medications used for the treatment of this disease are not completely effective but in turn produces many adverse effects. However the prolonged usage of the available drugs may lead to series of adverse effects like thrombocytopenia, Hepato toxicity, Nephrotoxicity and impotency<sup>[2]</sup>.

Conventional drugs used for the treatment of ulcer and their ADR's

To overcome these adverse effects the alternative treatment method that can be chosen is usage of natural treatment with

the help of medicinal plants that can reduce or overcome the adverse effects caused by the available allopathic medicine. Hence the extracts of medicinal plants are considered as important sources of new molecules that have shown promising results in treating gastritis<sup>[27,28]</sup>.

It is evident that the extract of Medicinal plants shows significant reduction in ulcer scores and index caused by the inducing agents, where as It is also proven that antioxidant potential of the medicinal plants also helps for exhibiting the antiulcer activity which is due to the presence of flavonoids, gums, tannins, Saponins and oleoresins in different parts of plants<sup>[29, 30]</sup>.

Such medicinal plants that have antiulcer and Gastro protective activity that are reported till now are listed below.(Table 2,3)

Summary

The present review has demonstrated the plants that have the efficacy to treat gastric ulcer that is caused due to different causative factors like H.Pylori, proton pump inhibitors, aspirin, indomethacin, alcohol etc. Many plants have been screened in both *invitro* and *invivo* conditions to check the efficacy of medicinal plants on gastric ulcer as an alternative for the available marketed medicines. Further research has to be carried out to separate the active Phyto chemical constituent that is responsible for the activity in order to valid the scientific and medicinal uses of plants.

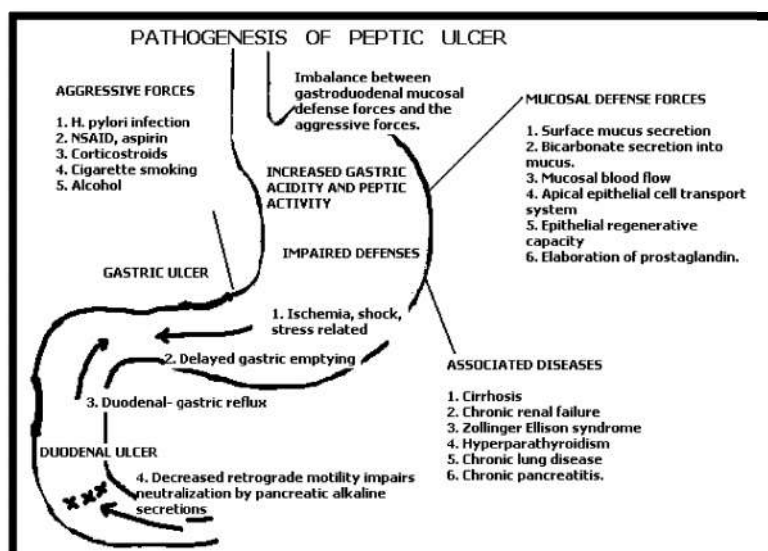


Fig 1 Pathogenesis of peptic ulcer

Table 1 List of conventional drugs with adverse effects

S.No.	Drug	Category	Adverse Effects
01	Cimetidine	H <sub>2</sub> antihistamines	Bradycardia, impotency <sup>[3]</sup>
02	Ranitidine	H <sub>2</sub> antihistamines	Constipation, Dizziness <sup>[4, 5]</sup>
03	Famotidine	H <sub>2</sub> antihistamines	Mood changes, Dry mouth, Head ache <sup>[6]</sup>
04	Roxatidine	H <sub>2</sub> antihistamines	Constipation, visual disturbances, Fast heart rate, increased liver enzyme activity <sup>[7, 8]</sup>
05	Omeprazole	Proton pump inhibitors	Leucopenia, Hepatic dysfunction <sup>[9]</sup>
06	Lansoprazole	Proton pump inhibitors	Difficulty in breathing, seizures <sup>[10]</sup>
07	Rabeprazole	Proton pump inhibitors	Head ache, abdominal pain, Diarrhoea <sup>[11,12]</sup>
08	Esomeprazole	Proton pump inhibitors	Muscle cramps, Muscle weakness, Nausea <sup>[13]</sup>
09	Pirenzepine	Anticholinergics	Dry mouth, Blurred vision <sup>[14, 15]</sup>
10	Propantheline	Anticholinergics	Nervousness, Bloating, Decreased sense of taste <sup>[16]</sup>
11	Oxyphenonium	Anticholinergics	Urinary retention, abnormal heart rate <sup>[17]</sup>
12	Misoprostol	Prostaglandin analogue	Stomach cramps, Dehydration <sup>[18,19]</sup>
13	Sodium bicarbonate	Antacid (systemic)	Herat burn, Indigestion <sup>[20]</sup>
14	Sodium citrate	Antacid (systemic)	Muscle twitching, Shallow breathing, Weight gain <sup>[20]</sup>
15	Magnesium Hydroxide	Antacid (nonsystemic)	Tightness in chest, Slow reflexes, Loss of appetite <sup>[21]</sup>
16	Magnesium trisilicate	Antacid (nonsystemic)	Constipation , Diarrhoea <sup>[21, 22]</sup>
17	Aluminium hydroxide gel	Antacid (nonsystemic)	Constipation Loss of appetite (Adverse effects are very rare) <sup>[22]</sup>
18	Magaldrate	Antacid (nonsystemic)	Severe allergic reactions, tightness in chest, vomiting, tarry stools, Slow reflexes <sup>[23]</sup>
19	Sucralfate	Ulcer protective	Itching, Insomnia <sup>[23, 24]</sup>
20	Colloidalbismuthsubcitrate	Ulcer protective	Skin rashes, Trouble in breathing <sup>[24]</sup>
21	Amoxicillin	Anti-H-Pyloridrugs	Vaginal itching, stomach pain, hairy tongue <sup>[24]</sup>
22	Clarithromycin	Anti-H-Pyloridrugs	Insomnia, mild itching or rashes, Unpleasant taste <sup>[24, 25]</sup>
23	Metronidazole	Anti-H-Pyloridrugs	Skin rashes, Trouble in breathing <sup>[25]</sup>
24	Tinidazole	Anti-H-Pyloridrugs	Vaginal itching/discharge, bitter taste in mouth <sup>[25, 26]</sup>
25	Tetracycline	Anti-H-Pyloridrugs	Sores or swelling in rectal region, White patches on lips and inside the mouth, mild nausea, Swollen tongue, difficulty in swallowing <sup>[27]</sup>

Table 2 List of plants with gastro protective and other beneficial effects

Family of Plant	Plant Name	Part & Extract	Other beneficial effects	Reference
Acanthaceae	Acanthus ilicifolius	Leaf <sup>s</sup>	Asthma, Rheumatism.	30,31
Liliaceae	Aloe vera	Leaf <sup>+</sup>	Anti-inflammatory, mucus stimulatory, antioxidant potential, anti-ulcer.	32
Combretaceae	Anogeissuslatifolia	Leaf <sup>@,*</sup>	Potent antioxidant activity.	33
Acanthaceae	Andrographispaniculata	Bark <sup>@,*</sup>	Antioxidantactivity	34
Convolvulaceae	Argyreiaspeciosa	Leaf <sup>+</sup>	Nervous disorders, diabetes and ulcer	35,36
Leguminosae	3auhinia purpurea Linn	Leaf <sup>s</sup>	Anti-inflammatory agent	37
Cucurbitaceae	Benincasahispida	Fruits <sup>#,s</sup>	Used to treat Liver disorders, pyrexia, kidney problems, and nervous disorders.	38
Berberidaceae	Berberis vulgaris	Fruit, Seeds <sup>@</sup>	Antioxidant	39
Bursereaceae	Boswellia serrate	Bark <sup>#,@</sup>	Antioxidant activity, antisecretory activity	40,41
Apocynaceae	Calotropisprocera	Bark <sup>s</sup>	Purgative, ulcer and stomachache	41
Lecythidaceae	Careyaarborea	Leaf <sup>+</sup> and stem bark <sup>*</sup>	Antibacterialand free radical scavenging potential	42
Apiaceae	Centellaasiatica	Leaf <sup>s</sup>	Psychiatricdisorders, melena and kidney infections	43

Leguminosae	Denostigmamacrophyllum	Leaf <sup>c</sup>	Antioxidant	44
Vitaceae	Cissusquadrangularis	Stem <sup>s</sup>	Significant reduction in ulcerative damage	45
Zingiberaceae	Curcuma xanthorrhiza	Leaf <sup>f</sup>	Antioxidant activity	46
Myrtaceae	Eugenia Jambolana	Leaf and seed	Anti-diabetic	47
Moraceae	Ficusarnottiana	Leaf <sup>f</sup>	Antioxidant activity	48,49
Moraceae	FicusDalhousiae	Root <sup>*</sup>	Hepato protective and cardiogenic	50
Asteraceae	Guierasenegalensis	Leaf <sup>f</sup>	Antioxidant activity, antiulcer	51,52
Fabaceae	Gynuraprocumbens	Leaf <sup>b</sup>	Cancer, inflammation, diabetes and viral infections	53
Fabaceae	Hymenaeastigonocarpa	Stem Bark <sup>@</sup>	Ulcerpains, Anti-inflammatory	54
Convolvulaceae	Ipomoea batatas	Whole plant <sup>^</sup>	Antioxidant	55,56
Rubiaceae	Ixorapavetta	Flower <sup>+</sup> , bark <sup>*</sup>	Anti-anaemic agent	57
Oleaceae	Jasminumsambac	Leaf <sup>+</sup>	Inflammationand gastric lesions	58,59,60
Oleaceae	Jasminumgrandiflorum	Leaf <sup>f</sup>	Gastro protective	61

\*indicates ethanolic extract, # indicates petroleum ether extract, @ indicates aqueous extract, \$ indicates methanolic extract, ^ indicates Hydro-ethanolic extract, + indicates leaf gel extract, - indicates butanol extract.

**Table 3** List of plants with gastro protective and other beneficial effects

Family of Plant	Plant Name	Part & Extract	Other beneficial effects	Reference
Fabaceae	Abaremacochliacarpus	Flower <sup>+</sup>	Gastroprotective	62
Boraginaceae	Anchusastrigosa	Root <sup>#</sup>	Gastroprotective	63
Compositae	Aspilia Africana	Leaf <sup>@</sup>	Antirheumatic, Gastroprotective	64
Meliaceae	Azadirachta indica	Bark <sup>@</sup>	Antioxidant, analgesic, antiulcer	65
Fabaceae	Bauhinia variegata	Leaf <sup>@</sup> ; Bark <sup>@,*</sup>	Anti asthmatic, antiulcer	66
Cucurbitaceae	Benincasahispida	Seed <sup>*,#</sup>	Anti-pyretic, gastroprotective	67
Mackinlayaceae	Centellaasiatica	Leaf <sup>*</sup>	Antibacterial, antiulcer	68
Vitaceae	Cissussicyoides	Leaf <sup>s</sup>	Rheumatism, antiulcer	69
Apocynaceae	Cynanchumauriculatum	Root <sup>*</sup>	Antidote. Gastroprotective	70
Annonaceae	Enantiachlorantha	Bark <sup>@</sup>	Malaria, Gastroprotective	71
Cactus	Ficusindica	Leaf <sup>*</sup>	Antidiabetic, antiulcer	72
Euphorbiaceae	Jatrophaisabelli	Rhizome <sup>*</sup>	Gastroprotective	73
Calophyllaceae	Kielmeyeracoriacea	Roots <sup>^</sup>	Gastroprotective	74
Verbenaceae	Lippiasidoides	Leaf <sup>b</sup>	Antimicrobials, gastroprotective	75
Celastraceae	Maytenusilicifolia	Leaf <sup>@</sup>	Anticancer, gastroprotective	76
Rhizophoraceae	Rhizophoramangle	Bark <sup>@</sup>	Antioxidants, antiulcer	77
Lamiaceae	Salvia officinalis	Leaf <sup>*,^</sup>	Antispasmodic, Antiulcer	78
Solanaceae	Solanumnigrum	Aerial parts <sup>s</sup>	Antipyretic, antiulcer	79
Lamiaceae	Stachyslavandulifolia	Flower <sup>@</sup>	Anxiolytic, antiulcer	80
Loganiaceae	Strychnospseudoquina	Leaf <sup>s</sup>	Hypoglycemic effect, antiulcer	81
Apocynaceae	Tabernaemontanadivaricata	Flower <sup>s</sup>	Anthelmintic, antiulcer	82
Combretaceae	Terminaliaarjuna	Bark <sup>s</sup>	Heart diseases, Anti uclers,	83
Apocynaceae	Voacangaaficana	Fruit <sup>*</sup>	Anxiety, Gastroprotective	84

\*indicates ethanolic extract, # indicates petroleum ether extract, @ indicates aqueous extract, \$ indicates methanolic extract, ^ indicates Hydro-ethanolic extract.

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