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Review Article

HERBAL REMEDIES FOR GASTROPROTECTIVE ACTION: A REVIEW

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Abstract

Herbal medicines have great importance in maintaining the health of every person. Demands of Herbal medicines are increasing in both developed and developing countries due to growing recognition of natural plants being lesser no. of side effect, easily available in surrounding place with low coast. Different parts of the plant have different active substances and these active substances may vary in their extent of activity and concentration. Most of active principles are present in leaves, flower, fruit, bark, root & seeds of the plant. Gastric diseases are a major and worldwide very common problem in every age of person. Its 90% arises commonly due to mostly used of non-steroidal anti-inflammatory category of drug and about 8 to 10% by used of most spicy and fast food(Junk Food). In this review we have described some medicinal plants with respect to their Gastroprotective action.

Keywords: Ayurveda, Medicinal plants, Gastroprotective, Esophagus, and Other digestive part having ulcerative complications

1. Introduction:

The acid-peptic diseases are those disorders in which gastric acid and pepsin are necessary, but usually not sufficient, pathogenic factors. Barriers to the reflux of gastric contents into the esophagus comprise the primary esophageal defense. If these protective barriers fail and reflux occurs, dyspepsia and/or erosive esophagitis may result. The treatment and prevention of these acid-related disorders are accomplished either by decreasing the level of gastric acidity or by enhancing mucosal protection. The appreciation that an infectious agent, Helicobacter pylori, plays a key role in the pathogenesis of acid-peptic diseases has stimulated new approaches to prevention and therapy.[1]

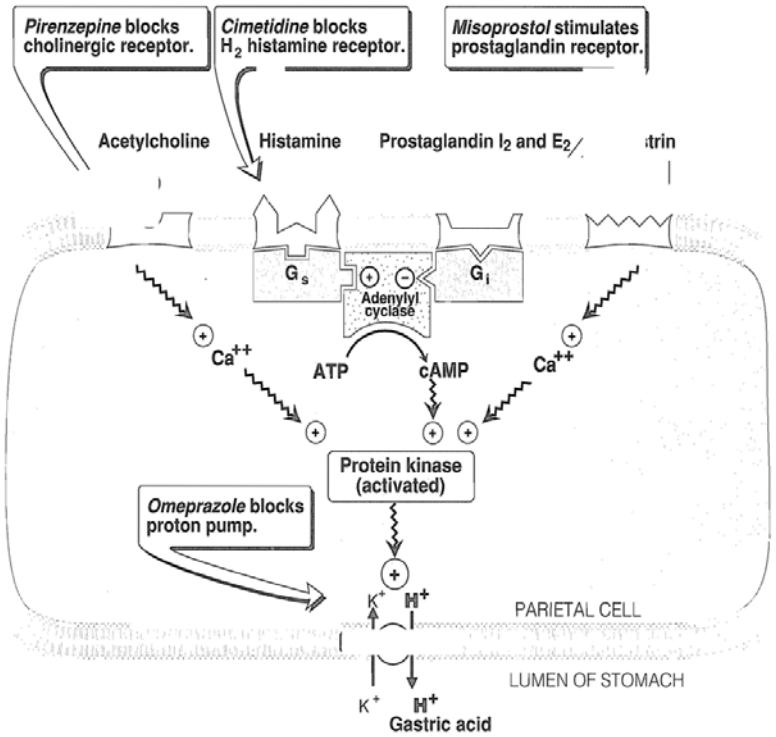
Approximately, 25 million Americans are affected by PUD, with the life time prevalence estimated to be 12% in men and 10% in women. Annual direct and indirect costs associated with PUD in the United States are estimated to be more than $9 billion. Despite the widespread use of conventional anti-ulcer therapy that effectively reduces gastric acid secretion, ulcers frequently recur, with 1-year recurrence rates (after ulcer initial healing) estimated to range from 60% to 100%.[2]

Ulceration involves the full thickness of the gastrointestinal mucosa. It is caused by disruption of the normal balance between the corrosive effect of the gastric juice and the protective effect of the mucus on the gastric epithelial cells.[3]

It results probably due to imbalance between the aggressive (acid, pepsin, bile and H. pylori) and the defensive (gastric mucus and bicarbonate secretion, prostaglandin, nitric oxide, innate resistance of the mucosal cells) factors.[4]

Ulceration refers to a site of inflammation where an epithelial surface of (skin, gastric epithelium, colonic mucosa, bladder epithelium) has become necrotic and eroded, often with often with associated subepithelial acute and chronic inflammation.[5]

1.2 Drugs Used To Treat Peptic Ulcer Disease



Effects of acetylcholine, histamine, prostaglandin I_2, and E_2, and gastrin on gastric acid secretion by the parietal cells of stomach; G_s and Gi are membrane proteins that mediate the stimulatory or inhibitory effect of receptor coupling to adenylyl cyclase.[6]

1.3 Gastric Diseases and Its Significance: A peptic ulcer is a hole in the gut lining of the stomach, duodenum, or esophagus. A peptic ulcer of the stomach called a gastric ulcer, of the duodenum, a duodenal ulcer and of the esophagus, an esophageal ulcer. An ulcer occurs when the lining of these organs is corroded by the acidic digestive juices that are secreted by the stomach cells. For many years, excess acid believed to be the major cause of ulcer disease. Accordingly, treatment emphasis was on neutralizing and inhibiting the secretion of stomach acid. While acid considered significant in ulcer formation, the leading cause of ulcer disease currently believed to be infection of the stomach by bacteria called Helicobacter pylori (H. pylori). Another major cause of ulcers is the chronic use of anti-inflammatory medications, commonly referred to as NSAIDs (non-steroidal anti-inflammatory drugs), including aspirin. Cigarette smoking is also an important cause of ulcer formation and ulcer treatment failure.

Interestingly, a convincing relationship between acute lung injury and acute gastric hemorrhagic lesions was experimentally indicated, recently in addition to the longly established relationship between the peptic ulcer and chronic lung disease.

1.4 Gastroprotective Herbs: Traditional medicine uses plants and herbs since ancient times to treat different gastrointestinal illnesses, including peptic ulcers. Recently, many efforts have been done in order to identify new anti-ulcer drugs from natural resources. Plants have originated some anti-ulcer drugs such as carbenoxolone from Glycyrrhiza glabra, solon from sophoradin and gefarnate from cabbage. Many other plants including Quassia amara L, Turnera ulmifolia L. (Syngonanthus arthrotrichus) have been also reported as displaying anti-ulcerogenic activity. Several terpenes or their derivatives have been shown to posses' gastroprotective activity in different models of induced gastric lesions in animals and promoting healing of subacute gastric lesions in rats. Ferruginol is an abietane diterpene occurring in plants belonging to the Podocarpaceae, Cupressaceae, Lamiaceae and Verbenaceae families among others.

1.5 Medicinal Plant with Gastroprotective and Related Beneficial Effect: There are many herbal remedies suggested for Gastroprotective and Ulcerative complications. A list of medicinal plants with Gastroprotective and related beneficial effects is given in Table.1

Medicinal Plant with Gastroprotective Activity and their beneficial properties

Plant Name	Ayurvedic/ Common Name	Gastroprotective and other beneficial effect	Reference
Tabernaemontana divaricata	Crape jasmine	Anthelminthic, antiulcer	7
Phyllanthus niruri	Gulf Leafflower,	Gastroprotective	8
Stachys lavandulifolia	Chaye-e-Kohi	Anxiolytic, antiulcer	9
Cissus sicyoides	Possum Grape Vine	Rheumatism, anti ulcer	10
Cynanchum auriculatum;	Baishouwu	Antidote. Gastroprotective	11
Terminalia arjuna	Arjun, Arjuna	Heart diseases, Anti uclers,	12
Salvia officinalis	Garden sage	Antispasmodic, Anti ulcer	13
Lippia sidoides	Rosemary pepper	Antimicrobials, gastroprotective	14
Jatropha isabelli	Yagua rova	Gastroprotective	15
Ficus indica	Bargad	Antidiabetic, anti ulcer	16
Voacanga africana	Voacanga	Anxiety, gastroprotective	17
Enantia chlorantha	Moambe jaune	Malaria, Gastroprotective	18
Solanum nigrum	Black Nightshade	Antipyretic, antiulcer	19
Maytenus ilicifolia	Cancerosa	Anticancer, gastroprotective	20
Abarema cochliacarpos	Barbatimao	Gastroprotective	21
Rhizophora mangle	Red mangrove	Antioxidants, anti ulcer	22
Anchusa strigosa	Prickly alkanet	Gastroprotective	23
Strychnos pseudoquina	Quina do Cerrado	Hypoglycemic effect, anti ulcer	24
Bauhinia variegate	Orchid tree	Anti asthamatic , antiulcer	25
Centella asiatica	Gotu Kola	Antibacterial, anti ulcer	26
Aspilia Africana	Wild sunflower	Anti rheumatic, gastroprotective	27
Benincasa hispida	Winter melon	Anti-pyretic, gastroprotective	28
Azadirachta indica	Neem	Antioxidant, analgesic, antiulcer	29
Kielmeyera coriacea	Páu santo	Gastroprotective	30
Garcinia cambogia	Brindal Berry	Gastroprotective	31
Plectranthus amboinicus	Cuban oregano	Cough, gastroprotective	32
Alstonia scholaris	Indian Devil tree,	Malarial fever, gastroprotective	33
Morinda citrifolia	Indian mulberry	Antidiabetic, gastroprotective	34
Ficus arnottiana	Paraspipal	Wound healing, anti ulcer	35
Asparagus racemosus	Satavari, Safedmusli	Immunostimulants, antiulcer	36
Carica papaya	Papaya	Aphrodisiac, gastroprotective	37
Cereus peruvianus	Night Blooming	Insecticide, gastroprotective	38
Condonopsis pilosula	Codonopsis ,	Antidiabetic, gastroprotective	39
Calotropis procera	Milkweed	Leprosy, tonic, anti ulcer	40
Guiera senegalensis	Dry-zone mahogany	Gastroprotective	41
Atractylodes ovata	Pai shu	Anti diarrheal, gastroprotective	42
Gentian root and Swertia	Chirayata	Dyspepsia, gastroprotective	43
Decalepis hamiltonii	Nannari, Sariba	Antifungal, gastroprotective	44
Pongamia pinnata	IndianBeech, Honge	anthelmintic, gastroprotective	45
Zingiber officinale	Ginger	Nausea, gastroprotective	46
Eleusine coracana	African Millet, ragi	Diuretic, gastroprotective	47
Cecropia glaziovii	Embauba, yarumo	Antihypertensive, anti ulcer	48
Marrubium vulgare	White Horehound	Anti-diabetic, anti ulcer	49
Polyalthia longifolia	Ashoka tree	Fever, skin diseases, anti ulcer	50
Melia azedarach	Chinaberry,	Diuretic, gastroprotective	51
Cassia auriculata	Silver Senna	Body odour, anti ulcer	52

Ocimum sanctum	Tulsi	Antimicrobial, anti ulcer	53
Bambusa arundinacea	Bamboo, Exudate,	Aphrodisiac, Antiulcer,	54
Carlina acanthifolia	Cardabelle,	Gastroprotective agent	55
Erythrina indica	Coral Tree	Gastroprotective	56
Terminalia chebula	Shatavari	Laxative , astringent, anti ulcer	57
Curcuma longa	Turmeric	Anticancer, Anti ulcer	58
Excoecaria agallocha	Agallocha,	Purgative, gastroprotective	59
Ficus religiosa	Bodhi Tree,	Asthma, laxative, anti ulcer	60
Naravelia zeylanica	Vatanisini	Anti-inflammatory, anti ulcer	61
Aspilia Africana	Kalankuwa	Tuberculosis, gastroprotective	62
Bidens pilosa L.	Kïnehi	Antileukemic, gastroprotective	63
Maytenus ilicifolia	Cancerosa,	Cancer, anti ulcer	64
Vitis vinifera	Grape Seed	Anticancer, anti ulcer	65
Pteleopsis suberosa	Okuku	Antiulcer	66
Sapindus trifoliatus.	Soapnut, Soapberry	Astringent, gastroprotective	67
Mikania cordata	Iyawa,ejon	Diuretic, gastroprotective	68
Byrsonima crassa	Murici	Mutagenic, anti ulcer	69
Simaba ferruginea	Quassia wood	Anti malarial, anti ulcer	70
Smithia conferta	Pairedflower	Antimicrobial, antiulcer	71
Bauhinia racemosa	Orchid tree	Anti diarrheal, anti ulcer	72
Terminalia pallid	Terminalia	Anti-cancer, anti ulcer.	73
Jasminum grandiflorum L.	Royal Jasmine	Antidepressant and antiulcer	74
Acanthopanax senticosusand	Devil, Bush	Gastroprotective	75
Byrsonima fagifolia	Murici	Antiemetic, Antiulcer	76
Malus domestica	Apple	Antioxident,gastroprotective	77
Curatella americanaL.	Azufre	Antiulcer	78
Guazuma ulmifolia	Mutamba	Antiviral, Antiulcer	79
Alchornea castaneaefolia:	Lporuru	Antimicrobial, Antiulcer	80
Cyrtocarpa procera	Chupandilla	Antibacterial, Antiulcer	81
Desmodium adscendens	Mangkit	Anti-inflammatory, Antiulcer	82
Lantana camara	Angel lips	Antipyretics, Antiulcer	83
Benincasa hispida	Wax gourd	Anticancer, Antiulcer	84
Pradosia huberi	Chupon	Antiulcer	85
Alhagi maurorum	Camelthorn	Anti-inflammatory, Antiulcer	86
Quassia amara	Quassia	Diarrheal and Ulcer	87
Cardiospermum halicacabum	Heart seed	Anti rheumatic ,ulcer	88
Mouriri pusa	Puca	Hypertension, Antiulcer	89
Angelica polymorpha	Dongquai	Antiulcer,Analgesic	90
Dodonaea viscosa	Hopbus	Gastroprotective	91
Mammea Americana	Mamey	Antidiarrhoeal, Antiulcer	92
Annona squamosatwigs	Shareefa	Antioxidant ,Antiulcer	93
Argyreia speciosa	Adhoguda	Gastroprotective, Neurodiseases	94
Toona ciliata	Toon	Gastroprotective	95

Conclusion:

Research in medicinal plants has gained a renewed focus recently. The prime reason is that other system of medicine although effective come with a number of side effects that often lead to serious complications. Plant based system of medicine being natural does not pose this serious problems. It can be concluded that studies with new Gastroprotective plants are important for the discovery of drug with less side effects, less costly, affordable and more effective in the treatment of different types of gastric diseases.

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