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GASTRIC ULCER (QARAH-E-MEDA) IN UNANI SYSTEM OF MEDICINE

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ABSTRACT

Peptic ulcer, also known as PUD or Peptic ulcer disease, is an ulcer of an area of the gastrointestinal tract that is usually acidic and thus extremely painful. PUD is one of the most common gastro intestinal disorders, which causes a high rate of morbidity. The lifetime prevalence of PUD is 5 to 10% with about equal prevalence in men and women. Modern lifestyles and unhealthy eating habits lead to different stomach and intestinal diseases and disorders. The stomach normally secretes acid that is essential in the digestive process. Peptic ulcer disease (PUD) develops when the protective mechanisms of the gastrointestinal mucosa, such as mucus and bicarbonate secretion, are overwhelmed by the damaging effects of gastric acid and pepsin. Symptoms include abdominal pain with severity relating to mealtimes, after around 3 hours of taking a meal; bloating and abdominal fullness; nausea, and copious vomiting; loss of appetite and weight loss etc. In the present scenario, Unani system of medicine is quite feasible to cure the diseases by its unique way of treatment and prescription of diet regimen and Unani system of Medicine (USM) has its own way of successful management of Gastric Ulcer and offers well integrated stepwise plan for treating a disease. It should be focus to sort out health related problems especially in GIT system. Present paper was aimed to collect information on various herbs which are used in treating PUD in various different parts of the world, depending upon the data's provided by researchers.

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INTRODUCTION

Peptic ulcer, also known as PUD or Peptic ulcer disease, is an ulcer of an area of the gastrointestinal tract that is usually acidic and thus extremely painful (Saumendu *et al*, 2013). Peptic ulcer disease is one of the most common gastro intestinal disorders, which causes a high rate of morbidity. An estimated 15,000 deaths occur each year because of PUD. The prevalence of duodenal ulcer is dominant in western population whereas gastric ulcer is more frequent in most Asian countries (Falcao *et al.*, 2008). The lifetime prevalence of peptic ulcer disease is 5 to 10% with about equal prevalence in men and women (Wilson *et al.*, 2003).

In Unani Medicine, gastric ulcer is known as Qarah -e-Meda. Unani scholars mentioned its causes as, Khilte Haad (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 secretions.

Peptic ulcers occur due to the imbalance between factors that can damage the gastro-duodenal mucosal lining and defense mechanisms of the GIT which limits the injury (Crew *et al.*, 2006). The aggressive factors include gastric juice (including hydrochloric acid, pepsin, and bile salts refluxed from the duodenum), infection, and NSAIDs (Goodman *et al.*, 2000; Huang, 2002; Kato *et al*, 1992; Kim *et al*, 2010; Lanis *et al*, 2006). Mucosal defenses comprise a mucus bicarbonate layer secreted by surface mucus cells forming a viscous gel over the gastric mucosa; the integrity of tight junctions between adjacent epithelial cells; and the process of restitution, whereby any break in the epithelial lining is rapidly filled by adjacent epithelial and mucosal stromal cells migrating and flattening to fill the gap. Mucosal defenses depend on an adequate blood supply and on formation within the gastric mucosa (Wang *et al.*, 2011).

Concept of PUD in Unani Medicine

Unani literature deals with gastric ulcer (*Qarah-e-Meda*) and intestinal ulcer (*Qarahe Ama'a*) separately, while conventional medical science deals with these two diseases under the heading of peptic ulcer, which includes both gastric and intestinal ulcers. *Qarha* is an Arabic word which means

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“Wound”. Ibne Hubl Baghdadi has defined *Qarha* as: chronic loss of continuity in the muscles. Any type of wound in muscle is sometimes called “*Jarahat*” and *Qarha*. (Ibn Hubl, 2004; Goodman *et al.*, 2000; Huang, 2002; Khan *et al.*, 2003). Ibne Sina, Jurjani, Ibne Hubl and Azam Khan have hypothesised that *Qurooh-e-Meda* (gastriculceration) occur due to the damage of gastric mucosa which is caused by the irritant and corrosive humours which penetrate into and breach the continuity of gastric mucosa /tissue. According to them, these causative agents might be the product of stomach itself or a foreign matter which has been diverted to stomach from other organs such as brain. Also they had a view that a person’s food habit may play an important role in the pathogenesis of ulceration as they believed that spicy food might act as irritant to the stomach and hence it might alter the defence mechanism of gastric mucosa (Ibn Hubl 2004; Huang, 2002; Jurjani *et al.*, 1903; Khan, 1335 H; Khan, 1313 H; Ibn Sina, 2007).

Etiology and Pathogenesis

- Genetic predisposition
- Abnormalities in secretion of acid and Pepsis
- Abnormalities of mucosal defense
- Delayed gastric emptying
- Reflux of bile and pancreatic juice
- Emotional stress
- Role of Microbes (*H. pylori*) (Jamal *et al.*, 2006)

Usool-E-ILAJ (Principle of Treatment) in USM

- Use of Qabizat (Astringent drugs) for binding effect of ulcers.
- Intake of easily digestive food.

- Avoiding of corrosive drugs, e.g. Copper Sulphate etc.
- Mugharriat (agglutinant) along with mudammilat (cicatrizent) drugs is used in case of oesophageal ulcers, eg. Samaghe kateera and Samaghe arbi.
- To prevent haematemesis, Qurse kahruba, Rubbe Ghafis and Rubbe Afsanteen are use.
- To clear the site of ulcer munaqqiat (cleansers) like Jali (detergent) and Muzalliq (demulcent) drugs, e.g. Maul Asl and Julab are use.
- Jazib (desiccant) and mudammil (cicatrizent) drugs are effective after complete clearing of slough from ulcers (Aziz, 1301; Masihi 1889; Jurjani, 1903; Khan, 1313; Zuhr, 1986; Tabri, 1981).

Treatment

Unani physicians in the treatment of gastritis, gastric ulcer and associated disorders, drugs having stomachic, astringent, desiccant, styptic, sedative and coolant activities are used (Ghani, 2011). There are many herbs and plant products that have been found to play a role in protecting or helping to heal stomach and peptic ulcers (Saumendu *et al.*, 2013). Herbal drugs can provide lead for the development of such antiulcer drugs because these drugs are considered safer in view of their natural ingredients. In recent times, focus on plant research has increased all over the world and a large body of evidence has been collected to show immense potential of medicinal plants used in various traditional systems of medicine (Dahnukar *et al.*, 2000).

List of Single drugs generally used by Unani Physicians in Gastric Ulcer Disease (PUD)

Unani Name	Botanical Name	Part use	Temperament	Action
Burada Sandal Safaid	<i>Santalum album</i>	Wood	Cold & Dry	Muffarraah, Musakkin, Daaf-e-Taafun, Munaffise-Balgham
Amla	<i>Emblca officinalis</i>	Fruit	Cold & Dry	Muqawwi qalb, Qabi, Musakkin, Muqawwi-e-Dimag
Adrak	<i>Zingiber officinale</i>	Rhizome	Hot & Dry	Kasire riyah, Hazim, Jali, Munaffise balgham
Mastagi	<i>Pistacia lentiscus</i>	Resin	Hot & Dry	Muqawwie-meda wa jigar, kasir-e-riyah
Asgand	<i>Withania somnifera</i>	Root	Hot & Dry	Muqawwi-e-aam, Muhallile warm, Musakkin-e-Asab, Munawwim, Muqawwi-e-meda, moalide mani
Kalonji	<i>Nigella sativa</i>	Seed	Hot & Dry	Jali, Munaffise balgham, muqawwi-e-meda, muffarraah, muqawwi-e-qalb meda wa Bah, muttaiyyaib-e-dahan, Munaffise balgham, Kasir-e-riyah, muhallil-e-warm
Khulanjan	<i>Alpinia galanja</i>	Root	Hot & Dry	Munziji, Muqawwie asab, Muhallil-e-warm, munaffise balgham, kasir-e-riyah
Asl-us-soos	<i>Glycyrrhiza glabra</i>	Wood	Hot & Wet	Munawwim, mukhaddir, musakkin
Kahu	<i>Lactuca sativa</i>	Seed	Cold & Dry	Mugharre, Muqawwie bah, Mughallize mani, muqawwi-e-raham
Satawar	<i>Asparagus racemosus</i>	Root	Cold & Wet	Mulattif, mugharri wa musakkin
Khatmi	<i>Althaea rosea</i>	Seed, root	Hot & wet	Muhallil, musakkin, mussaffi, daaf-e-Tafun, mullaiyin, munziji, daaf-e-bukhar, Qatile kirma shikam
Neem	<i>Azadirachta indica</i>	Seed	Hot & Dry	Muhallil-e-warm, musakkin, Jali, Mujaffif, Daf-e-Tashannuj
Haldi	<i>Curcuma longa</i>	Rhizome	Hot & Dry	Musakkin, muhall-e-warm, muqawwie qalb wa dimag wa meda, kasir riyah, Qabiz
Kishneez	<i>Coriandrum sativum</i>	Fruit	Hot & Dry	Muffarreh, muqawwi-e-qalb, musakkin, munziji-e-sauda, musaffi-e-dam, muhallil-e-warm.
Badranjboya	<i>Melissa parviflora</i>	Booti	Hot & Dry	Musakkin, muhallil, mulayyan
Aspaghul	<i>Plantago ovata</i>	Seeds, Husk	Cold & Wet	Mushily, mudir, muhallil
Elva	<i>Aloe barbadensis</i>		Hot & Dry	Munaffise balgham, mulattif, mugharriq, muqawwi-e-qalb.
Gaozaban	<i>Borago officinalis</i>	Flower, leaves	Mutadil	Muqawwi-e-qalb, mullattif, muffarreh
Bed Mushk	<i>Salix capera</i>	Flower and leaves	Cold & Wet	Muffarreh, muqawwi aza raesa, muqawwi-e-badan, daaf-e-qabz, muhallie auram, musakkin
Gul-e-surkh	<i>Rosa damascena</i>	Flower	Murakkab ul qawa	Munziji-e-bulgham, mufatteh sudad, mudir-e-baul wa haiz, muhallil-e-auram
Bekhe Kasni	<i>Chichorium intybus</i>	Root	Hot & Dry	Muqawwi-e-qalb, muqawwi-e-dimag, musakkin-e-hiddat-e-khoon, muhallil-e-warm
Nilofar	<i>Nymphaea alba</i>	Flower	Cold & wet	

Ibn sina, 2007, Ibn baitar, 1999; Chughtai, YNM; Ghani, 2011; Hakeem, 2002; Kabeer Uddin, 2007.

KHATMI(*Althaeaofficinalis*)

Introduction

Khatmi belongs to the family Malvaceae. It is native of most countries of Europe and is also distribute in the temperate and subtropical region of Asia and Europe (Kirtikar and Basu, 1987; Khory an Katrak, 1981). Actual Khatmi is *Althaea officinalis* but due to inappropriate practice of vernacular name in certain regions of India *Althaea rosea*, another species of genus *Althaea* is also known as Khatmi.

Chemical constituents

Many compounds were extracted from different parts of the plants, these included pectins 11%, starch 25-35%, mono-, di-saccharide saccharose 10%, mucilage 5%, flavonoids: hypolaetin-8-glucoside, isoquercitrin, kaempferol, caffeic, p-coumaric acid, ferulic acid, p-hydroxybenzoic acid, salicylic acid, p-hydroxyphenylacetic acid, vanillic acid, coumarins, scopolin, phytosterols, tannins, asparagine and amino acids(Blumenthal *et al.*, 2000; Ali, 2013).

Action

Anti-tussive, anti-inflammatory, antiestrogenic, antimicrobial, immunomodulatory, antioxidant, antiurolithiatic, and cytotoxic activity (Sharma *et al.*, 2016).

Therapeutic Uses

Metritis (Warme reham), enteritis (Warme amaa), mastitis (Warme pistan), arthritis (Waja ul mafasil), etc. (Ghani, 2011; Ibn-e-Baitar2003; Kabiruddin, 2005).

It also has been used for other ailments like catarrh (Nazla), renal calculi (Sang e gurda), pityriasis (Bahaq), tremor (Raasha), dysuria (Usr ul baul), dysentery (Zaheer), haemoptysis (Nafs ud dam), whooping cough (Shaheeqa), etc. (Ghani, 2011 ; Ibn-e-Baitar2003; Kabiruddin, 2005).

Pharmacological Studies

Antibacterial Activity

The hexane extracts of flower and root of *Althaea officinalis* exerted antimicrobial activity against Gram-positive and Gram-negative bacteria (*Escherichia coli*, *Pseudomonas aeruginosa*, *Klebsiella pneumoniae*, *Bacillus subtilis*, *Enterococcus faecalis*, *Staphylococcus aureus* and *Staphylococcus epidermidis*), as well as three fungi (*Aspergillus niger*, *Candida albicans* and *Saccharomyces cerevisiae*) (Valiei *et al.*, 2011).

Rashidi *et al* (2011) also found that 80 % ethanolic *Althaea officinalis* extract was active against *Aspergillus niger*, *Aspergillus fumigatus*, and *Aspergillus flavus* species. MIC of *Althaea officinalis* 80 % ethanolic extract 50-100 mg/ml.

Antimicrobial activity

A methanolic extract *Althaea officinalis* root has been shown to possess an inhibiting activity on the periodontal pathogens (*Porphyromonas gingivalis*, *Prevotella* spp., *Actinomyces odontolyticus*, *Veillonella parvula*, *Eikenella corrodens*, *Fusobacterium nucleatum*, *Peptostreptococcus* spp.) present in the oral cavity. Antimicrobial activity against *Pseudomonas aeruginosa*, *Proteus vulgaris* and *Staphylococcus aureus* has also been found in chloroform and methanolic extracts of *Althaea officinalis* roots (Valiei *et al.*, 2011).

Radical scavenging effect

The extract of *Althaea officinalis* exhibited strong antioxidant activity in different antioxidant tests [Panda and Kar, 2006] The reddish pink petals of *Althaea officinalis* flowers were found to have more antioxidant activity than pink and white flowers[Sadighara *et al.*, 2012].

ASL-US-SOOS (*Glycyrrhiza glabra*)

Introduction

Asl-us-soos is the dried unpeeled stolon and root of the plant *Glycyrrhiza glabra* (Anonymous, 2007). The word *Glycyrrhiza* has been derived from two Greek words "Glykys" means sweet and "Rhiza" means root, thus the meaning of *Glycyrrhiza* is sweet root. Common name of *Glycyrrhiza glabra* Linn is liquorice (Ross, 2003), belonging to the family Leguminosae (Chopra *et al.*, 2006; Ross, 2003). It is mostly found in the subtropical and warm climate (Ross, 2003).

Action

The rhizomes are considered to possess carminative (Anonymous, 2007), antiasthmatic, antidiuretic, antihyperlipidemic (Ross, 2006), antimutagenic (Sharma *et al.*, 2014).

Therapeutic Uses

Cough, Asthama, Hoarseness of voice, Bronchitis (Kabiruddin, 2005; Ibn Baitar, 1999;1990; Dymock *et al.*, 1976; Anonymous, 2000). Ulceration of urinary tract, pharyngitis, epilepsy and anaemia (Evans, 2009).

Phytochemistry

Glycyrrhizin, chalcones, isoflavonoids, coumarins, triterpenoids and sterols, volatile oils (Khare 2007; Kabeeruddin, 2005]. The chief constituent of Liquorice is "Glycyrrhizin" which is present in the drug in the form of potassium and calcium salts of glycyrrhizic acid. Glycyramarin, β sitosterol, Protein, Starch (29%), Flavonoids like Liquirtin, Isoliquirtin, Liquiritigenin , and Isoliquirtigenin, resin, gum, mucilage, phosphoric acid, sulphuric acid, mallic acid, cadmium and magnesium salt (Rastogi, 1960). Coumarins present in *G. Glabra* include liqcoumarin, glabrocoumarone A & B, Herniarin, Umbelliferone, Glycyrin, Glycocoumarin, Licofuranocoumarin, Licopyranocoumarin(Jatav *et al.*, 2011).

Pharmacological Studies

Immunostimulatory effects

In vitro studies proved that *Glycyrrhiza glabra* at 100 μ g/ml concentration, showed immunostimulatory effects. It increases production of TCD69 lymphocytes and macrophages from human granulocytes. According to in vivo studies, liquorice root extract was found to prevent the rise in the number of immune-complexes related to autoimmune diseases like systemic lupus erythematosus (Alonso, 2004).

Anti-oxidant and Anti-Bacterial Activity

Hydromethanolic root extract of *Glycyrrhiza glabra* L., showed existence of numerous useful secondary metabolites such as: flavonoids, saponins, alkaloids and so on. Because of these constituents the extract exhibited effective anti-oxidant and anti-bacterial activities. It is able to fight against scavenging

hydroxyl radical and bacterial infection. It may be a significant remedy for inhibition of bacterial infection and scavenging of hydroxyl radicals which are produced during carcinogenesis (Sharma *et al.*, 2013).

Antioxidant activity

High content of phenolic component in ethanolic extract of Liquorice (*Glycyrrhiza glabra* L) is responsible for its powerful antioxidant activity by means of significant free radical scavenging, hydrogen-donating, metal ion chelating, anti-lipid peroxidative and reducing abilities (Visavadiya *et al.*, 2009). Thus, liquorice extract can be efficiently used to formulate cosmetic products for the protection of skin and hair against oxidative damage (Alonso *et al.*, 2004).

Anti-Viral Activity

Antiviral activities of ribavirin, 6-azauridine, pyrazofurin, mycophenolic acid and glycyrrhizin proved that glycyrrhizin was the most efficient in controlling viral replication. Thus, it can be a good prophylactic measure (De-Clercq, 2000; Cinatl, 2003). Glycyrrhizic acid was found to have a distinctive effect against Kaposi sarcoma-associated herpes virus (KSHV) as found in *In vitro* studies. KSHV also becomes latent in infected cells same as other herpes virus. It is proved that glycyrrhizic acid can terminate latent infection of KSHV when all current drugs are found to be ineffective against latent infection. Glycyrrhizic acid down-regulates the expression of latency associated nuclear antigen (LANA) in B lymphocytes. This causes natural cell death (apoptosis) of the KSHV virus (Curreli *et al.*, 2005).

Anticoagulant

Glycyrrhizin is the first plant-based inhibitor of thrombin. It is found to prolong the thrombin and fibrinogen clotting time. It also increases plasma recalcification duration. Glycyrrhizin causes inhibition in thrombin induced platelet aggregation. But there was no effect of glycyrrhizin on Platelet Aggregating Factor (PAF) and Collagen induced agglutination (Mendes *et al.*, 2003).

KISHNEEZ (*Coriandrum sativa*)

Introduction

Coriander is mentioned in the papyrus of Ebers and in the writings of Cato and Pliny. It was well known in England before the Norman Conquest (Pandey, 2010). It is annual herb originating from the Mediterranean (Vaidya, 2000). The whole plant and especially the unripe fruit, is characterized by a strong disagreeable odour, wherever the name coriander (from the Greek k'opis, a bug)(Gruenwalded, 2004).

Action

It has diaphoretic, diuretic, carminative and stimulant. In Iranian traditional medicine, coriander has been indicated for a number of medical problems such as dyspeptic complaints, loss of appetite, convulsion and insomnia (Benjumea *et al.*, 2005; Maghrani *et al.*, 2005; Duke, 2002).

Therapeutic Uses

Digestive tract disorders, respiratory tract disorders, urinary tract infections (Ghani, 2011).

Phytochemicals of coriander

Green coriander contains 84% water. Seeds contain up to 1.8% volatile oil according to origin (BP standard not less than 0.3%). The distilled oil (coriander oil BP) contains 65-70% of (+)-linalool (coriandrol), depending on the source, and smaller amounts of α -pinene, γ -terpinene, limonene and ρ -cymene together with various nonlinalool alcohols and esters. Other constituents isolated from the fruits include flavonoids, coumarines, isocoumarines, phthalides and phenolic acids. 13% resin, astringent principle, malic acid and alkaloids, coriander oil contains coriandrol, jireniol and vebriniol (Evans, 2006; Czygan *et al.*, 2001).

Pharmacological Studies

Anti-hyperglycemic Activity

Its seed extract is used as a traditional medicine for diabetic patients. Incorporation of ground coriander seed extract in diet led to marked decline in blood glucose and rise in levels of insulin in diabetic rats. Besides peroxidative damage inhibition, addition of its seed extract reactivated antioxidant enzymes and antioxidant levels in diabetic rats (Deepa and Anuradha, 2011).

Anti-microbial Activity

Aqueous infusions and aqueous decoctions of *Coriandrum sativum* (coriander) against 186 bacterial isolates belonging to 10 different genera of gram +ve bacterial population and 2 isolates of *Candida albicans* isolated from urine specimens. The well diffusion technique was employed. The aqueous infusion and decoction of coriander did not show any antimicrobial activity against gram -ve urinary pathogens as well as against *Candida albicans* (Perween tariq *et al.*, 2007).

Antioxidant Activity

The antioxidant activity of the studied essential oils and their mixtures was assessed in the aldehyde/carboxylic acid test. This method is also carried out by DPPH radical-scavenging assay, Inhibition of 15LO, Inhibition of phospholipid peroxidation. Extracts from both leaves and seeds showed a concentration-dependent DPPH scavenging activity respectively (Wangensteen *et al.*, 2004).

Sedative Hypnotic Activity

To determine sedative & hypnotic activity Aqueous and hydroalcoholic extract & essential oil administer to rat. The results of experiment show that Aqueous extract prolonged pentobarbital-induced sleeping time at 200, 400 and 600 mg/kg. Hydro-alcoholic extract at doses of 400 and 600 mg/kg increased pentobarbital- induced sleeping time compared to saline-treated group. The essential oil increased pentobarbitalinduced sleeping time only at 600 mg/kg. The extracts and essential oil of coriander seeds possess sedative-hypnotic activity (Emamghoreishi *et al.*, 2006).

SATAVAR (*Asparagus racemosus*)

Introduction

Asparagus racemosus is an indigenous medicinal plant of the family Liliaceae (Chopra., 1956; Anonymous, 1976) is important for its sapogenin content. *Asparagus* is the Greek word for "stalk" or "shoot". About 300 species of *Asparagus* are known to occur in the world in many countries. This species

occurs widely throughout the tropical and subtropical regions (Evans, 1978).

The plant is a spinous under-shrub, with tuberous, short rootstock bearing numerous succulent tuberous roots (30–100 cm long and 1–2 cm thick) that are silvery white or ash coloured externally and white internally (Anonymous, 1987).

Action

Anticancer activity, antidiarrheic activity, antifungal activity, antibacterial activity, anti-inflammatory activities, antiulcer activity, antioxidant activity, anti-abortion activity (Shatvarin 1), Antioxytocic (shatavarin4), spasmolytic to uterus Hypoglycemic, hypertensive activity, anticoagulant activity (Sharma *et al.*, 2000). Antidyspepsia and antitussive effects (Bopana *et al.*, 2007).

Therapeutic Uses

Gastric ulcers, dyspepsia, diarrhea, nervous disorders (Goyal and Lal, 2003), dysentery (Bopana *et al.*, 2007). Depression, inflammation cancer, lithiasis, Hepatotoxicity, diabetes (Lee *et al.*, 2009; Mandal *et al.*, 2000; Ojha *et al.*, 2010; Thakur *et al.*, 2009; Bhattacharya *et al.*, 2002).

Chemical constituent

The major active constituents of *A. racemosus* are steroidal saponins named as shatavarin I and shatavarin IV. 8-methoxy-5,6,4'-trihydroxyisoflavone a new isoflavone was isolated by roots of *A. racemosus* (Saxena *et al.* 2001; Wiboonpun *et al.* 2004), isolated a new antioxidant compound named Racemofuran, together with known compounds asparagamine A, and racemosol. Three steroidal saponin namely Racemosides A, B and C were isolated from the methanolic extract of fruit of *A. racemosus*, earlier reported isoflavones, steroidal glycosides, polycyclic alkaloids and a dihydrophenanthrene derivative were isolated from roots of plant but there has been no report on the chemistry of the constituents of its fruit (Hayes *et al.*, 2006). In root, Saponins—shatavarins I–IV. Shatavarin IV. (Khare 2007; Kabeeruddin, 2005).

Pharmacological Activities

Antiulcer effect

Asparagus racemosus is an effective antiulcerogenic agent whose activity can easily be compared with that of ranitidine hydrochloride. *Asparagus racemosus* causes an inhibitory effect on release of gastric hydrochloric acid and protects gastric mucosal damage. Hence the roots of the Shatavari plant in the form of powder can be administered to chronic ulcer patients along with other patients (Anil Mangal *et al.*, 2004).

Immunomodulant

Thakur *et al.* (2011) worked to screen the activity of polysaccharide fraction of *A. racemosus* as immunomodulant. Phytochemical evaluation confirmed the presence of 26.7% fructo-oligosaccharide (FOS). Natural Killer (NK) cell activity was evaluated as NK cell activity is considered to be important attribute of the immune system. The results indicate that FOS from *A. racemosus* potentiates the NK cell activity and this could be an important mechanism underpinning the chemical properties of this plant.

Antidepressant

Singh *et al.*, (2009) evaluated antidepressant activity of *A. racemosus* in rodent models. They made use of methanolic extract of roots of plant. The results show that methanolic extract of *A. racemosus* decreases immobility in Forced Swim Test (FST) and increases avoidance response in Learned Helplessness test (LH) indicating antidepressant activity.

Anticarcinogen

Many reports support the presence of compounds in *A. racemosus* which can be helpful in treatment of cancer. Bhutani *et al.* (2010) conducted a study on steroidal saponins of *A. racemosus* for apoptosis inducing study. They investigated the anti-proliferative activity of steroidal constituents isolated from *A. racemosus* on human colon carcinoma cells. They concluded that the steroidal saponin have the potential of being used for the development of potential cancer therapeutics.

Antioxidant action

The levels of enzymes like superoxide dismutase, catalase and ascorbic acid increase with significant reduction in the lipid peroxidation. The antioxidant properties were mainly exhibited due to the presence of Isoflavones (Wiboonpun *et al.*, 2004).

CONCLUSION

Peptic ulcer disease (PUD) is one of the most common gastrointestinal disorders. The lifetime prevalence of PUD is 5 to 10% with about equal prevalence in men and women. In Unani Medicine, gastric ulcer is known as Qarah -e-Meda. Peptic ulcers occur due to the imbalance between factors that can damage the gastro-duodenal mucosal lining and defense mechanisms of the GIT which limits the injury.

In Unani System of medicine, treatment of gastritis and associated disorders, drugs having stomachic, astringent, desiccant, styptic, sedative and coolant activities are used. Conventional medicine treats peptic ulcer by proton pump inhibitors (PPI), H₂ receptors antagonist, antacids and antibiotics for *H. pylori* infection. Increasing popularity of alternative system of medicine, it is necessary to conduct research to support the therapeutic claim and also to ensure that the plants are given importance according to their therapeutic value, in modern herbal medicines.

The present paper was aimed to collect information of the medicinal plants used for the treatment of PUD. Some of them are already reported as anti-ulcer drug, but for some still no under researched and these are only used traditionally.

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