GULNAR (PUNICA GRANATUM LINN.): A PLANT ORIGIN DRUG OF UNANI MEDICINE

Waris Ali 1*, Hamiduddin 2, Mohd Aftab Ahmad 3, Abdul Haleem 4, Abdul Nasir 5
1Lecturer, Department of Ilmul Saidla (Unani Pharmacy) Eram Unani Medical College and Hospital Lucknow, India
2Reader, Department of Ilmul Saidla (Unani Pharmacy), National Institute of Unani Medicine (NIUM), Bangalore, Karnataka, India
3Principal, Eram Unani Medical College and Hospital Lucknow, India
4Clinical Registrar, Majeedia Hospital, Jamia Hamdard New Delhi, India
5*Corresponding Author Email: warisali.jamal@gmail.com

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ABSTRACT

Punica granatum belongs to the family Punicaceae. Gulnar is a very significant herbal Drug in Unani system of Medicine. This medicinal herb have Antidiabetic, Antiulcer activity, Antioxidant activity, Allergenic activity, Anti-inflammatory activity and it is used to treat a variety of diseases especially Zaheer (dysentery), Naz-ul-dam (hematemesis), Sul (cough), Khurooj-e-maqad (rectal prolapse), Pyorrhoea, Ishal Safravi, Ishal damwi, Qula (stomatitis), Surkh badua, Karsate haiz (menorrhagia), Salain-ur-raham (leucorrhoea), Diarrhoea, Naksheer (epistaxis ). This review gives a keen view on its phytochemical studies, chemical constituent and pharmacological action and medicinal application of the drug.

Key words: Punica granatum Linn., Pharmacological activity, Hypoglycaemic, Unani Medicine.

INTRODUCTION

Gulnar is equated with sterile flowers of Punica granatum Linn. in Unani system of medicine.1 Gulnar belongs to the family Punicaceae.2,3 It has been depicted in many illustrations dating from the time of Egyptians.4 Anar is one of the oldest drugs known. In Ebers papyrus of Egypt it is mentioned, written in about 1550 BC.5 The term punica is derived from Latin malum punicum meaning ‘an apple’ with many seeds or ‘apple of carthage’.6 Gulnar which are sterile flowers of Punica granatum Linn, used as medicine and for ornamental purpose,5,6 Gulnar blooms thrice a year during March and April, July and August and mid January.7

SYNONYMS: Punica nana Linn.1

SCIENTIFIC CLASSIFICATION6

Kingdom : Plantae
Phylum : Magnoliophyta
Class : Magnoliopsida
Order : Myrtales
Family : Punicaceae
Genus : Punica
Species : granatum

HABITAT AND DISTRIBUTION

Punica granatum Linn. is considered to be a native of Iran, valleys and outer hills of the Himalayas between 900 m and 1800 m and in salt range,6,7 Pomegranate is commonly found in tropics and subtropics.8 It is cultivated throughout India,4,9 It is cultivated as a commercial crop and also as an ornamental plant.10 It can be propagated through seeds cuttings,2

VERNACULAR NAMES

Gulnar (Punica granatum Linn.) (Flower)

BOTANICAL DESCRIPTION

*Punica granatum* Linn. is a deciduous shrub or small glabrous tree of 6-8 metre height with pale brownish bark and small axillary terminal spines. The buds and young shoots are red. Leaves: Opposite or sub-opposite, 2.5 to 6.3 cm, long, oblong-lanceolate, oblong elliptic or oblong-oblancoeolate, glabrous, entire minutely pellucid-punctate, shining above, bright green beneath, base narrowed into a very short petiole. Leaves: Opposite or sub-opposite, 2.5 to 6.3 cm, long, oblong-lanceolate, oblong elliptic or oblong-oblancoeolate, glabrous, entire minutely pellucid-punctate, shining above, bright green beneath, base narrowed into a very short petiole. Flowers: Flowers are bell shaped, 1.5-3.0 cm high, 1.5-2.5 cm broad, mostly solitary, sometime 2-4 together, terminating, short shoots, sometimes apparently axillary, sessile or nearly so; Calyx tube campanulate, coriaceous, prolong above the ovary; ovary inferior. Fruits: Crowning by the somewhat tubular limb of the calyx, large globose, indehiscent, with a curvaceous rind; Pulp red and juicy, sometime white. Seeds: Angular, testa coriaceous.

MAHIYAT (UNANI MORPHOLOGY)

It is a famous plant, which is found in common countries of Asia. It is a deciduous shrub or small glabrous tree of 6-8 metre height with pale brownish bark and small axillary terminal spines. The buds and young shoots are red. Leaves: Opposite or sub-opposite, 2.5 to 6.3 cm, long, oblong-lanceolate, oblong elliptic or oblong-oblancoeolate, glabrous, entire minutely pellucid-punctate, shining above, bright green beneath, base narrowed into a very short petiole. Flowers: Flowers are bell shaped, 1.5-3.0 cm high, 1.5-2.5 cm broad, mostly solitary, sometime 2-4 together, terminating, short shoots, sometimes apparently axillary, sessile or nearly so; Calyx tube campanulate, coriaceous, prolong above the ovary; ovary inferior. Fruits: Crowning by the somewhat tubular limb of the calyx, large globose, indehiscent, with a curvaceous rind; Pulp red and juicy, sometime white. Seeds: Angular, testa coriaceous.

MIZAJ (TEMPERAMENT)

Sard (cold) 2° and Khushk (dry) 2°. Sard (cold) and Khushk (dry) 2°. Sard (cold) and Khushk (dry) 2°. Sard (cold) and Khushk (dry) 2°. Sard (cold) and Khushk (dry) 2°. Sard (cold) and Khushk (dry) 2°. Sard (cold) and Khushk (dry) 2°.

HASASE MUSTAMELA (PARTS USED)

Flowers, 7,9,14 Pulp,10,17 Fruits, 7,9,14 Fresh juice, 17 Seed 10,16,17 Rind,10 Leaves, 13,14,16 Root Bark 7,9,14

AFA’AL (FUNCTION) AS PER UNANI LITERATURE

Flowers: Qabiz (astringent), 2,3 radé (derivative)2,25 mujaffif (desiccative), 25 mudamnil qurooh, 23 daf-i-zaheer (antisyntery), daf-i-ishal (antidiarrhoeal), habis-i-dam (haemostyptic), 1,25 musakkini-safray, 26 Seeds: Qabiz (astringent), mushtai (appetiser), muqawwai qalb (heart tonic), mukawwai jigar (liver tonic), mukawwai meda (gastric tonic), mudire baul (diuretic) 23 Bark of stem and root: Qabiz (astringent), strengthening gum, qatile firke shikam (vermicidal), muhalli warm, mujaffif (desiccative), mushli (laxative), 23 antisyntery. 1 Rind: Qabiz (astringent), muhalli warm, mujaffif (desiccative), gum strengthening. 23 ESTEMAL (USES) AS PER UNANI LITERATURE

Flowers: Zaheer (dysentery), 24,26 nazf-sul-dam (hematemesis), 24,26 sual (cough), 23 khurooj maiqad (rectal prolapse), 24,26 pyorrhoea, 23,25 ishal safrawi, 24,25,26 ishal damsi, 1,24,25,26 qula (stomatitis), 23,24,25,26 surkh bada, 26 kasrate haiz (menorrhagia), sailan-ur-rahim (leucorrhoea), 25 diarrhoea, 23 nakseer (epistaxis), 25 Leaves: Ashoob-i-chashm (conjunctivitis). 27 Seeds: Pechish (dysentery), 25 khaqaan (palpitation), dard-i-seen (chest pain), zauf-i-meda, khanis(cough), qula (stomatitis), 27 mati (noseau), qai (vomiting). 23 Stembark and rootbark: Habbul qara (tape worm). 17 Rind: Bawaseer (hemorrhoid), qula (stomatitis), ishal (diarrhoea), zaheer muzmin (chrony dysentery), khurooj maiqad (rectal prolapse), sailan-ur-rahim (leucorrhoea), kasrat-i-haiz (menorrhagia), silus baul (dribbling of urine), 23 koomi bawaseer (bloody piles), khanis (cough). 19 AFA’AL (FUNCTION) AS PER OTHER LITERATURE

Flowers: Astringent, cooling, 9,10 tonic, 9,11 antisyntery, 20 aphrodisiac, 9 nutritive, 20 laxative, diuretic, 9,10,31 appetiser, 11 Seeds: Astringent, stomachic, demulcent, diuretics, cardiotonic. 9 Leaves: Antifungal, 10,13 CNS depressant, diuretic, hypoergic. 10 Bark of stem and root: Astringent, ant-hermaphrodic, 9,10,12 strengthening gum, 9,11 antifungal, cooling, febrifuge, vermicide, 10 piles, 11 antibacterial, 13. Stem: Astringent, ant-hermaphrodic. 7 Rind: Gum Strengthening, 23 astringent, 7,12 antidiarrhoeal, 10 stomachic, 10,12 antisyntery, 10 digestive, 10,12 cardiotonic; 10 Roots: Astringent, ant-hermaphrodic. 7 ESTEMAL (USES) AS PER OTHER LITERATURE

Flowers: Leucorrhoea, 20 dysentery, 19 haematuria, haemorrhoid, 7 ulcer, 9,10,11 hydrocele, 9,11 diarrhoea, 10,20 haemoptysis in tuberculosis, spermatorrhoea, threatened abortion, 20 pharyngitis,
conception, leucorrhoea, epistaxis, sore throat, sore eye, vomiting; 11;  
Leaves: Stomatitis, conjunctivitis, dysesthesia; 16;  
Seeds: Sore throat, vomiting, excessive thirst, hepatic disorder, splenic disorder, bronchitis, sebaceous, sore eye, decocction of seeds used for treatment of syphilis; 15, 22;  
Fruit: Jaundice, diarrhoea, dysesthesia, fever, sore throat, stomatitis, vomiting; 11;  
Bark of stem and root: Bronchitis, piles, prolapsus ani; 11;  
Rind: Diabetics, diarrhoea, dysesthesia, freckles, gonorrhoea, colitis, dyspepsia. 9

MAZARRANT (TOXICITY)  
Darde sar, Sudhe paida karta hai. 25, 28  
The aqueous extract of fruit skin (rind) is neurotoxic and it is highly toxic, when given in a daily dose of 0.4 ml leads to mortality in all 6 male house sparrow in 72 hrs. 5, 9  
When pelletierine is given in excessive dose, it causes amyllobia, mydriasis, vomiting, diarrhoea, muscular weakness. 9

MUSLEH (CORRECTIVES)  
Kateera (Sterculia urens Linn.). 25, 28  

BADAL (SUBSTITUTES)  
Anar ki kali or chhaal (flower bud or bark of Punica granatum Linn.), 1, 25 Jufte baloot (Quercum indica Roxb.). 25, 28, Zeera (Cuminum cyminum Linn.). 1

TASTE: Tasteless  

MIQDARE KHURAK (DOSE): 3-5 masha (gm), 25-7 gm. 7 masha

MURAKKABAT (COMPOUND FORMULATION)  
Qurse Tabasheer, 29 Sharbat-i-anar; 26 Qurse gulnar, Jawarish anarain, Jawarish podeena, 26 Barood-i-rumman, 27 Kusha chandi, Kusha marjan, 19 Majoone busud, Majoone kalan, Hubbe narkachur, Safoofe as-soos, Safoofe kalan, Sunoone supar.  

CHEMICAL COMPOSITION  
In various part of plant Malvidin pentose glucosides, tannin, ursolic acid. 9  
Flowers: Tannins, saponins, pelargonidin-3, 5-diglucoside, sistorsterol; 7, 10  
ursolic acid, 7, 18 asiatic acid, maslinic acid, pelargonidin-3, 5-diglucoside, gallic acid, 13, 17 sitosterol-d-glucoside. 10  
Fruit: Pectin, vitamin C, delaflavin, nicotinic acid, protein, digycoside, citric acid, malic acid, 3, 11  
glutamine, aspartic acid, thiamine, citric acid, 9, 20 vitamin A, calcium, phosphorus, iron, potassium, sodium, oxalic acid, carbohydrates, tannins. 26 florides, 30  
Seeds: Malvidin pentose glucosides granatin A, granatin B, corilagin, strictinin, punicaic acid, nanodecanoic acid, tricosanoic acid, methylauric acid, delphinidin 3, 5-diglucoside, 30 Estrone, punicic acid. 9

Leaves: Butalic acid, punicatolin, granatins, ellagittanins-granatins A&B, punicaconifolin. 23  
Stembark: Tannins, alkaloid (pelletierine, iso pelletierine, pseudo pelletierine, methyl-iso pelletierine, seinulidine, methyl-pelletierine, N-methyl pelletierine, isoquercetin, butalic acid, gallic acid, D-mannitol). 9, 10, 20

Roothark: Alkaloid (pelletierine, iso-pelletierine, pseudo iso methyl-pelletierine), punico-tanincacid. 8  
Roots: Tannins, alkaloids. 20  
Stem: Carbohydrate, carotene, D-mannitol, tannins. 20  
Rind: Ellagic acid, tannins, ellagittamins as granatin-β, punicalagin, ursoic acid, sisotesterol. 10

REPORTED PHARMACOLOGICAL ACTIVITY  
Anti-diabetic activity: Ethanol (50%) extract of the male abortive flowers, administered orally to normal, glucose-fed hyperglycaemic and alloxan-induced diabetic rats, produced significant blood glucose lowering effect. 4  
Antulcer activity: Orally administered peel, rind and seed extract in a dose, peel (100 mg/kg) (group iv), rind (500 mg/kg) and seed (500 mg/kg) (group vi) on gastric ulcer induced by pylorus ligation in diabetic rats, decreased the mucosal injury significantly at 6th day (last day) and showed antulcer effect. 20  
Antioxidant activity: Fruit juice exhibited a range anti-oxidant activity from 157.33 to 419.33 mmole/100ml, and of peel varied in different cultivars and ranged from 225.17 to 705.50 mmole/100gm. 62 Methanol extract of fruit, at a concentration of 50.0 microliters, was active. Fermented juice and seed oil produced strong antioxidant activity close to that of butylated hydroanisole and the sinensis, and significantly great than that of red wine (Vitis vinifera) Flavonoids extracted from cold pressed seed oil produced 31-44% inhibition of sheep cyclooxygenase and 69-81% inhibition of soybean lipoxigenases. Flavonoids extracted from the fruit peel produced 21-30% inhibition of sheep cyclooxygenase though no significant inhibition of sheep cyclooxygenase. 4  
Allergic activity: Fruit, taken orally by human adults, was active. A case was reported of tongue angioedema following ingestion of fruit. An IgE mediated mechanism could not be demonstrated. 4  
Anti-ascariasis activity: Ethanol (95%) extract of the epicard was active on earth-worm. Paralysis occurred in 18 hours with a death rate of 50%. 4  
Anti-fertility activity: Fruit peel, in the ration of guinea pigs of both sexes at dose of 18.0 gm/kg and in the ration of female rates was active. 4  
Anti-inflammatory activity: Ethanol extract (80%) of dried fruit peel, administered by gastric intubation to male rats at a dose of 100.0 mg/kg, produced weak activity vs carrageenan induced pedal oedema. 23% inhibition of edema was observed ethanol-water (1: 1) extract of areal parts, administered orally to rats at a dose of 0.125 mg/kg, inactive vs carrageenan induced pedal edema. Animals were dosed 1 hour before carrageenan injection. 4  
Anti-mycobacterial activity: Ethanol (95%) extract of dried arial parts, at a concentration of 1:50 on agar plate, produced weak activity on mycobacterium tuberculosis. 4  
Intestinal antisecretory activity: Decotion of dried fruit peel, administered intra-gastrically to rats, was active vs MgSO4 induced enteropooling. The ethanol (95 %) extract, at a dose of 500.0 mg/kg, was active vs MgSO4 induced enteropooling. 4
Antibacterial and antifungal activities: Methanolic extract of Punica granatum peel had antibacterial activity against S. aureus and S. epidermidis. Only at concentration of 8 mg/ml and 12 mg/ml it was effective against L. acidophilus, S. mutans and S. salivarius.  

Anti Dental plaque: Hydro-alcoholic extract from Punica granatum (pomegranate) fruits was very effective against dental plaque, presented also an antibacterial activity against selected microorganisms.  

CONCLUSION

Various phytochemical and pharmacological studies have been conducted on different parts of Punica granatum. The present literature supports the potential of Punica granatum as a medicinal/therapeutic plant. In view of the nature of the plant and immense scope, owing to its classical indications, more research can be done to investigate the unexplored and unexploited potential of this plant.

REFERENCES

19. Multani HC. Hindustan aur Pakistan ki Jadi Bootiyan aur in ke Fawayed. Lahaur; Maktaba Danyal; YNM: 115-117.

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