

Review Article

A brief review of *Terminalia bellerica* (Balela) with special reference of Unani medicine

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ABSTRACT

Unani medicine utilizes *Terminalia bellerica* (known as balela in Unani classics) for the treatment of diseases such as obesity, diarrhea, weakness of digestive system, ageing, greying of hairs, weakness of memory and eyesight, strengthening of immunity, general weakness etc. This paper briefly review this worthwhile drug for its general morphology, chemical constituents, dosage, pharmacological actions, therapeutic uses, compound formulations in Unani medicine and experimental studies.

Keywords Balela, terminalia bellerica, Unani medicine, triphala

INTRODUCTION

Unani system of medicine is one of the oldest system of medicine which has been preventing and treating disease through various modes of treatment. Treatment with drugs (ilaj bil dawa) is one of the mode of treatment which utilizes drugs of herbal, mineral and animal origin but drugs of herbal origin are mostly utilized (Ansari S et al., 2017; Ghani N, 2008). Balela is one of the herbal drug in Unani medicine which has been used extensively for preventive as well as therapeutic aspect. Drug balela consists of pericarp of dried ripe fruits of *Terminalia bellerica* Roxb of Combretaceae family (Deb A et al., 2016). Drug yielding plant is a large deciduous tree 10-12 m or more high, commonly found in plain and forests up to 900 m elevation fruits ripen towards November (Ghani N, 2008). Balela along with amla (*Emblica officinalis*) and halela (*Terminalia chebula*) collectively knowns as 'Triphala' which is base of important Unani formulation named 'Itrifal'. (Ghani N, 2008; Deb A et al., 2016)

VERNACULAR NAMES (Ghani N, 2008; Deb A et al., 2016; Kabiruddin H, NA; Hakeem MAH, 1999; Khan MA, 2012)

Arabic: Balela

Persian: Balelaj

Assamese: Bhaira, Bauri, Bahera, Bahira

English: Belleric Myrobalan

Gujarati: Bahedan, Baheda munjhad, Bahedo, Baheda, Bero, Sag

Hindi: Bahera, Bhaira, Bhera, Buhura

Kannada: Tanrekai, Shantikayi, Shantimara

Kashmiri: Babelo, Balali

Malayalam: Tannikka, Thani, Tannikkai, Tanni, Tusham

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Marathi: Bahera, Behera, Balra, Beda

Oriya: Bahada

Punjabi: Bahera, Birha, Balela, Bayrah

Sanskrit: Vibhita, Aksa, Akshka, Cibhitaka, Anilagnaka, Vibhitaki

Tamil: Thanrikkai, Tani, Thani, Kathuelupay, Tanrikkay, Tankrikkai

Telegu: Thanikkikaya, Tani, Tandi, Tandikeya, Thandra, Vibhitakama, Thana, Bhutavasana, Tadi

Urdu: Bahera.

(Ghani N, 2008; Deb A et al., 2016; Kabiruddin H, NA; Hakeem MAH, 1999; Khan MA, 2012)

DESCRIPTION

(a) Macroscopic: Fruit nearly spherical to ovoid 2.5-4.0 cm. whereas ripe fruits slightly silvery or with whitish shiny pubescent surface mature fruits grey or grayish brown with slightly wrinkled appearance rind of fruit shows variation in thickness from 3-5 mm taste astringent. (Anonymous, 2007)

(b) Microscopic: Transverse section of fruit shows an outer epicarp consisting of a layer of epidermis most of epidermal cells elongate to form hair like protuberance with swollen base composed of a zone of parenchymatous cells slightly tangentially elongated and irregularly arranged intermingled with stone cells of varying shape and size elongated stone cells found towards periphery and spherical in the inner zone of mesocarp in groups of 3-10 mesocarp traversed in various directions by numerous vascular strands bundles collateral end arch simple starch grains and some stone cells found in most of mesocarp cells, few peripheral layers devoid of starch grains rosettes of calcium oxalate and stone cells present in parenchymatous cells endosperm composed of stone cells running longitudinally as well as transversely. (Anonymous, 2007)

STANDARD FOR IDENTITY, PURITY AND STRENGTH

Foreign matter: not more than 2 per cent, total ash: not more than 7 per cent, acid-insoluble ash: not more than 1 per cent,

alcohol-soluble extractive: not less than 8 per cent, water-soluble extractive: not less than 35 per cent. (Anonymous, 2007)

CHEMICAL CONSTITUENTS: Gallic acid, tannic, acid and glycosides. (Deb A et al., 2016)

PHARMACOLOGICAL ACTION:

Stomachic (muqawwi-e-meda), astringent (qabiz), expectorant (munaffis-e-balgham), brain tonic (muqawwi-e-dimagh) and eye tonic (muqawwi-e-basar). (Ghani N, 2008; Kabiruddin H, NA; Hakeem MAH, 1999; Khan MA, 2012)

THERAPEUTIC USE:

Obesity, dyslipidaemia, weakness of stomach (zof-e-meda), weakness of intestinal system (zof-e-ama), diarrhoea (is'hal), weakness of eyesight (zof-e-basarat), weakness of memory and brain (zof-e-dimagh), and dry cough (sual). (Ghani N, 2008; Khan MA, 2012; Anonymous, 2007; Hakeem HMA, 2009)

DOSE: 5 to 7 g. (Ghani N, 2008; Anonymous, 2007)

COMPOUND FORMULATIONS:

Itrifal-e-sagheer, itrifal-e-muqili, itrifal-e-ustukhuddus, majoon-e-jograj gugal, majoon-e-fanjnosh. (Anonymous, 2007; Kabeeruddin HM, NA; Anonymous, 1986)

SCIENTIFIC STUDIES:

Anti-dyslipidaemic, anti-obesity activity, (Ahmad and Mishra, 2017; Pragya M et al., 2016) antidiabetic and antioxidant activity, (Sabu and Kuttan, 2009) anti-atherosclerosis, (Tanaka M et al., 2016) nephroprotective activity, (Fatima and Sultana, 2016) immunomodulator, (Manjunatha M et al., 2011) and hepatoprotective activity. (Pingale SS, 2011)

CONCLUSION

Balela is the botanical name of *Terminalia bellerica*, Roxb of family Combretaceae which has been used in the Unani medicine for the treatment of various diseases such as obesity, atherosclerosis, gastrointestinal disturbances, weakness of memory, greying of hairs, weakness of the immunity, loss of eyesight, general weakness, ageing etc. since centuries. Experimental studies have evidenced its potential as anti-dyslipidaemia, anti-obesity, anti-diabetic, anti-oxidant, nephroprotective, immunomodulator and hepatoprotective.

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CONFLICT OF INTEREST

The authors have no conflicting financial interests.

REFERENCES

Ahmad N, Mishra P. Effect of *Terminalia bellerica* against high fat diet induced hyperlipidemia and obesity. *Pharmacoeconomics*. 2017;2(1):62.

Anonymous. Qarabadine majeedi. (New Delhi, India: Hamdard waqf Lab), pp.23-24, 88, 1986.

Anonymous. The Unani Pharmacopoeia of India. Part I, Volume I. (New Delhi, India: Ministry of AYUSH), pp5-6, 17-18, 32-33, 2007.

Ansari S, Khan QA, Anjum R, Siddiqui A, Sultana K. Fundamentals of Unani system of medicine - a review. *European Journal of Biomedical and Pharmaceutical sciences*. 2017;4(9):219-223.

Deb A, Barua S, Das B. Pharmacological activities of Baheda (*Terminalia bellerica*): A review. *Journal of Pharmacognosy and Phytochemistry*. 2016;5(1): 194-7.

Fatima N, Sultana H. Evaluation of protective effect of *Terminalia bellerica* against gentamicin induced nephrotoxicity in albino rats. *Pharmaceutical and Biological Evaluations*. 2016;3(5):486-4.

Ghani N. Khazainul Advia. 2nd ed. (New Delhi, India: Idara Kitab us Shifa), pp.187-189, 421-422, 1352-54, 2008.

Hakeem HMA. Mufradat Azeezi. (New Delhi, India: CCRUM), pp. 14, 46, 103, 105, 115, 118, 2009.

Hakeem MAH. Bistanul Mufradat. (New Delhi, India: Idara e Kitabul Shifa), pp.72, 100, 347-48, 1999.

Kabeeruddin HM. Biyaz Kabir. Vol 2. Hyderabad, India: Hikmat Book Depo), pp 5, YNM.

Kabiruddin H. Makhzan Al Mufradat. (New Delhi, India: Ejaz Publishing House), pp. 55, 145, 590-91, YNM.

Khan MA. Muhite Azam (New Delhi, India: CCRUM), pp. 213-15, 740-45, 2012.

Manjunatha M, Bhalodiya H, Ansari MA, Vada S, Goli D. Immunomodulatory activity of *Terminalia bellirica* extract in mice. *International Journal of Pharmagenesis*. 2011;2(1):103-108.

Pingale SS. Hepatoprotective action of *Terminalia bellerica* on CCl₄ induced hepatic disorders. *Der Pharma Chemica*. 2011;3(1):42-8.

Pragya M, Nesar A, Tarique M, Arshiya S, Bagga P, Prashant S. Effect of *Terminalia bellerica* against high fat diet induced hyperlipidemia and obesity. *World Journal of Pharmaceutical Sciences*. 2016;4(4):33-7.

Sabu MC, Kuttan R. Antidiabetic and antioxidant activity of *Terminalia bellerica*. *Roxb. Indian J Exp Biol*. 2009;47(4):270-5.

Tanaka M, Kishimoto Y, Saita E, Sugihara NS, Kamiya T, Taguchi C, Lida K, Kondo K. *Terminalia bellirica* extract inhibits low-density lipoprotein oxidation and macrophage

inflammatory response in vitro. Antioxidants (Basel).
2016;5(2):20.