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Vibhitaka [Terminalia Bellirica (Gaertn) ROXB] Its Classical and Ethnomedicinal Uses – Critical Review.

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Abstract:
Vibhitaka [Terminalia bellirica (Gaertn)] has been used extensively in Ayurveda . The drug possess katu, tiktha, kashaya rasa, madhura vipaka and ushna virya . It has action on different diseases like kasa , pandu , apatantraka ,hridroga, netra roga etc .The drug is responsible for the therapeutical actions like anti inflammatory , antibacterial , analgesics and bronchodilatory due to have been scientifically proven . Apart from Ayurvedic classics, vibhitaka has been used for various ethnomedicinal purposes by tribes in the country.

Keywords: Vibhitaka (Terminalia bellirica), Ayurveda classics , Ethnomedicinal claims.

Introduction:

Vibhitaka is one among the ingredient of triphala, which has been in use since ancient times. Rigveda, mentions the use of vibhitaka for making dice, furniture and boat set1. Acharya caraka included vibhitaka in virechanopaga , jwaraharaganas2 and Acharya susrutha included it in mustadi and triphaladigana 3 .
Terminalia bellirica belongs to the family combretaceae . The generic name " Terminalia is derived from Latin word " terminus or terminalis , which mean the leaves being crowded or born on the tip of the shoots. It is a large deciduous tree grows up to 60 ft height. Leaves are gathered at the extremities of branches, which are simple, elliptic. Flowers are greenish yellow with offensive odour. Fruit are drupe, 1 to 2.5 cm in diameter, ovoid, grey in colour .The useful parts are fruit, kernel and bark. In medicinal preparations fruit are commonly used. It is found in plains and lower hills of south east Asia. In India it is growing in Madhya Pradesh, Uttarpradesh, Maharashtra and Kerala. In Kerala mostly seen in Malabar region 4 .Myrobalan contain various phytoconstituents such as glycosides, flavanoides, tannin and phenolic compounds, which are responsible for various pharmacological activities like antimicrobial, antipyretic, antidiabetic and bronchodilatory. The term 'Vibhitaka means it remove the fear of disease and cut the disease from the root itself. 5 The drug has kashaya rasa, laghu, rooksha guna, madhura vipaka, Ushna virya and tridosha samana6. It alleviates the dushti of rasa ,raktha, mamsa, medas, and it is used in different forms in diseases like kasa , swasa and it also has a synonyms 'kasagni, this term reveals the important of the drug in respiratory ailments . This drug is used in other diseases like premeha ,sopha pandu etc. Taila, which is taken from kernel Posses kesya property. Other than the classical text it also being used traditionally by different tribes in the country.

Materials and methods

Compilation and tabulation of classical uses of Vibhitaka were done from classical text, Nighantus, and Ethnomedicinal claims were collected from internet publication and Journal's. The tabulated data were analysed.

Table .1 Rasa panchaka of vibhitaka

S.No	Classical text	Rasa	Guna	Veerya	Vipaka	Prabhava
1	DN [7]	-	Laghu, sara	-	Katu	-
2	SON [8]	Kashāya Madhuram	Laghu, sīta	Sīta	-	-
3	MPN [9]	Kashāya	Rūksha	Ushna	Madhura	-
4	RN [10]	Katu ,tikta, Kashāya	Laghu	Ushna	Madhura	-
5	KDN [11]	Kashāya	Rūksha,laghu	Ushna	Madhura	-
6	BP [12]	Kashāya	Laghu,Rūksha	Ushna	Madhura	-
7	SG [13]	Katu,tiktha,Kashāya	Laghu	Ushna	Madhura	-
8	PN [14]	Kashāya	-	Ushna	-	-

There are different opinion about the rasa panchaka of vibhitaka. Majority of nighantu mentions, vibhitaka possess kashaya rasa. As per Raja and Sodhala nighantu rasa of vibhitaka is katu tiktha kashaya and kashaya madhura respectively. Other than Sodhala nighantu, all other nighantus mentions, vibhitaka as an ushna virya dravya. Vibhitaka possess madhura vipaka, Dhanwanthari nighantu consider it as a katu vipaka

Table 2. Karma of vibhitaka

S. No	Karma	DN	S0N	M.P.N	RN	KD	BP	SA	SG	PN
1	Bhedanam			+		+	+			
2	Krimihara						+		+	
3	Swasakāsahara	+	+	+		+	+		+	+
4	Kesyam	+	+	+		+	+			+
5	Netryam		+	+	+	+	+	+		
6	Madakrit			+		+	+			
7	Vaiswaryajith	+				+	+			
8	Palithagnam				+					
9	Chardigna						+	+		
10	Vaktrarogna	+								
11	Switram		+			+				
12	Pāndu		+			+				
13	Varnyam					+				
14	Śukraharam		+			+				

Table3. Uses in samhitas

Sl.No	Disease	Therapeutical uses	References	Kalpana	Mode of administration	Scientific validation
1	Garbhini	Yoni purana in retained placenta[15]	C.sa 8/41	Kalka	External	Study of the effect of Myrobalan bark extract on isolated rat uterus (Lal yong .et al. 2013)[16].
2 3.	Premeha	Vibhitaka along with rohitaka and kutaja made to choorna and can be given kapha – pitha premeha + honey17Aksha taila used internally for	C.chi 6/36 AH.chi12/1	Choorna Taila	Internal Internal	Terminalia bellirica stimulate the secretion and action of insulin and inhibit starch digestion and protein glycon in vitro (V kasabari et al. 2010.)[18]Anti diabetic

		snehapana before sodhana 19				and antioxidant activity of Terminalia bellirica. (Sabu et al.2009)[20]
4 5.	Sopha	Phala majja lepanam cure all kind of sopha associated with daha.[21] Vibhitaka kalkam with tandulambu[22]	C.chi 12/717 A.S chi 19/3	Kalka Kalka	External External	The drug has properties like decreasing lipid peroxide action and reducing the mediator of inflammation like histamine, COX2 and prostaglandin and several other mediators. (Shameertodengal et al 2012). 23
6 7	Kasa	Leha prepared with pippali,vibhitaki added with honey – kaphaja kasa.[24] Mukha dharana of vibhitaka[26]	AH.chi3/46-47 AH.chi 5/60	Leha	Internal	A clinical study of the anti- tussive and anti asthmatic effect of vibhitaka phala choorna in the case of swasa - kasa.(V.P Trivediet al. 1979)[25] . Anti-Spasmodic and Bronchodilatory Properties of Terminalia bellrica Fruit, (Anwarul Hassan Gilani, Arif-Ullah Khan, Tuba ali, Saad Ajmal) [27]
8	Netryam	Vibhitakasthi majja with honey cure vrana sukra[28]	AH.U 3/46-47		External	
9	Palitham	Aksha taila used for graying of hair[29]	A.H.Su 5/65	Taila	External	
10	Apatantraka	Powder of mustha ,pippali,nagara,athivisha,vibhitaka, along with wine or warm water cure apatantraka [30]	A.S chi .23/21	Choorna	Internal	-
11	Pandu	Powder of vibhitaki along with ayachoorna ,nagara choorna,and tila choorna take equally mix with equal amount of	A.S chi 18/9	Choorna	Internal	-

		jaggery can be use severe pandu roga.[31]				
12	Switra krimi	Vibhitaka taila mixed with cobra snake ash for rubbing over the lesion[32]	A.S chi 22/22	Taila	External	-

Table4. Uses in samgraha

SL.NO	**Disease**	**Therapeutical Uses**	**Reference**	**Kalpana**	**Mode of administration**	**Scientific validation**
13	Jwara	Paste of kernel of vibhitaka is beneficial in burning sensationin jwara [33].	V.M 1/161	Kalkam	Internal	Anti-Salmonella Activity of Terminalia bellirica In vitro and in vivo Studies. (madani et al.2008) [34] Screening of Terminalia bellirica Fruits Extracts for its Analgesic and Antipyretic Activities.(sharma et al.2009)[35]
17	Swasa	Vibhitaki choorna with honey [41]	R.M 11/5	Choorna	Internal	-
18	Parinamasula	Intake of aya churna cooked with juice of aksha ,amalaka ,and siva mixed with jiggery [42] .	V.M 27/50	Choorna	Internal	The anti-ulcer activity of ethanolic extract of Terminalia bellirica fruits ETB was investigated in pylorus ligation and ethanol induced ulcer models in wistar rats. [43] (Gp choudari et al .)
19.	Netra roga	Aksha majja rubbed with stanya cure vrana sukra . [44]	R.M 3/16 .	Kalkam	External	Saha et al. (2011) postulated that the paste of Terminalia bellrica have proper efficacy on wound healing.[45]
20	Hridgatha vatha	vibhitaka and aswagandha made to paste and taken with hot water and honey.[46]	V.S	Kalkam	Internal	-

21	Athisara	Vibhitaka along with saindhava.[47]	V.S 5/172	Choornam	Internal	Antidiarrhoeal activity was performed using castor oil induced diarrhoea ,PGE2 induced entero pooling and gastrointestinal motility test (bimlesh kumar et al 2010)[48]
22	Switra	Seed of avalguja , bakuchi taken with vibhitaki twak and root of kakodumbara[49]	C.K	Kalkam	External	-
23	Pandu	Vibhitaka lavana taken with takra and madhu . [50]	C.K	Lavana	Internal	-
24	Swarabheda	Choorna of vibhitaka, pippali,saidavam with takra to alleviate swarabheda [51] .	CD 13/9	Choorna	Internal	-
25		Powder of vibhitaka ,saindava, pippali along with kanji .[52]	R.M 10/3.	Choorna	Internal	

Table5. Uses in kerala traditional books

S.NO	Disease	Therapeutical Uses	Reference	Kalpana	Mode of administration	Scientific validation
26	Timira	Decoction of vibhitaki,bringaraja,asana added with tila taila used for nasya[53]	S.Y	Taila	Nasya	Evaluation of anticataract potential of triphala in selenite induced cataract :in vitro and in vivo studies . .(S.k Guptha et al 2010)[54]
27	Ballathaka visha	Lepana of rind or bark[55]	S.Y	Kalkam	External	-

28	Jwara in ballathaka visha	Aksha kwatha added with honey ,sitha,jeeraka [56]	A.K.D	Kashaya	Internal	
29		Kwatha prepared with laksha and aksha.	A.K.D	Kashaya	Internal	-
30		Drug aksha grinded with buttermilk is applied externally cure allergic eruption [57]	A.K.D	Kalkam	External	
31	Udumbara visarpa	Seed of aksha ,manjishta,maduka are grinded with nalikera dugdha is applied externally cure disease[58]	A.K.D 18/111	Kalkam	External	-
32	Valmika visarpa	Seed of aksha and flower of madhuka are grinded with masthu is applied externally. [59]	AKD18/121	Kalkam	External	-
33	Switra	Avaguja beeja with vibhitaka kashaya taken in the morning [60]	C.M	Kashayam	Internal	-

Table5. Ethnomedicinal claims

SL.NO	Disease	Ethno medicinal claims	Kalpana	Mode of administration
34	Teeth	Tribals of Ayodya hills use leaves and root paste to cure body pain and stem used as tooth brush.[61]	Kalka	External
35	Acene	Tribal women of Assam apply the paste of fruit to remove pimple spot.it also used as hair tonic .[62]	Kalka	External
36	General debility	Sanatal and oraons prescribe stem bark decoction for general debility.[63]	Kashaya	Internal
37	Leprosy	Treat leprotic wounds with paste of vibhitaka .[64]	Kalka	External

38	Leucoderma	Lodhas use stem bark paste to cure leucoderma[65]	Kalka	External
39	Gastrointestinal Problems	Tribals of Ranji district use dry fruit for stomach disorder.[66]		Internal
40	Mouth disorder	Decoction of vibhitaka used for tooth ache ,sore throat ,bleeding gum[67]	Kashaya	Internal
41	Diarrheoa	For dysentery and stomach pain dried fruits are soaked in one cup water followed by drinking the water on an empty stomach for 1-2 days. During this time, flattened rice has to be taken as meal.[68]	Panaka	Internal
42	Erectile dysfunction	The fruits of Terminalia bellrica, (Gaertn.) Roxb. Terminalia chebula, and Phyllanthus emblica are mixed with Abrus precatorius root and taken with cow's milk to cure erectile dysfunction .[69]	Churnam	Internal
43	Diphtheria	Vibhitaka choornam take with hot water cure diphtheria [70]	Churnam	Internal
44	Malaria	Stem used for making tooth brush in malaria [71]	Churnam	Internal
45	Infertility	Terminalia bellirica (Gaertn.) Leaves are used for Offerings in Infertility, Diabetes [72.]	Kalka	External
46	Vomiting	Paste of two or three tender leaves are prepared and is given thrice a day to cure vomiting and loosemotion[73].	Kalka	Internal

Discussion:

The study of traditional and ethno medicinal uses of medicinal plants is an effective way to explore the wide therapeutical applicability. Different simple combinations of vibhitaka can be seen in many diseases. Analysing the Ayurveda classics, we can understand that the drug vibhitaka works on multisystem level. The drug has kashaya rasa, laghu, ruksha guna, madhura vipaka , Ushna virya and tridosha samaka . It alleviates the dushti of rasa, raktha, mamsa,medas and asthi .

Analyzing both Ayurvedic classicsb and ethnomedicinal practices across the country, got 46 simple combinations for various diseases. kalka is the most common mode of administration, which used as both internal and external. The drug mentioned in the context of premeha, aparapatana, sopha, kasa swasa, vatavyadhi , hridroga , mukha roga and also urdwagata rogas. Various tribal communities are now practicing different simple combinations of vibhitaka for ailments like rheumatological conditions , skin disease , general debility, gastrointestinal , genitourinary diseases, mukaharoga and also using for offering to god to get progeny. Vibhitaka has action on bahya, abhyanthara and madhyama roga marga. But the use of ibhitaka in clinical practicerestricted to only triphala choornam. A part from Triphala, it has a lot of combinations in different diseases. But some of them have no evidence for supporting this data.

Conclusion:

The drug vibhitaka works on different systems of the body. It cure the diseases affecting the triroga margas. There are around 46 simple formulations are mentioned in classics. It has been used for swasa ,kasa ,pandu, switra .krimi, apatantraka, hridroga, etc . Most of the karmas scientifically proved by modern era .The chemical constituents such as Gallo-tannic acid, resins , Ellagic acid, gallic acid, lignans, 7-hydroxy 3'4' flavone , Tannins, chebulic acid, β- sitosterol mannitol are believed to be responsible for this action

.Therefore, this plant is significantly used for the treatment and prevention of diseases. But some therapeutical uses have no scientific evidences to support the data . Therefore , conducting further studies will be beneficial for healthcare system.

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