



## Encyclopedic Study of Haritaki (*Terminalia Chebula* Ritz.) In Reference To Prameha

Authors

Akhilesh Kumar<sup>\*1</sup>, Sanjay Kumar<sup>2</sup>, Sapna Chaudhary<sup>3</sup>, Sanjeev Kumar<sup>4</sup>,  
K. N. Dwivedi<sup>5</sup>, B. Ram<sup>6</sup>

<sup>1</sup>MD Scholar, Department of Dravyaguna, I.M.S, B.H.U, Varanasi, India

<sup>2,3</sup>Ph. D Scholar, Department of Dravyaguna, I.M.S, B.H.U, Varanasi, India

<sup>4</sup>Asistant Professor, Department of Dravyaguna, I.M.S, B.H.U, Varanasi, India

<sup>5</sup>Professor, Department of Dravyaguna, I.M.S, B.H.U, Varanasi, India

<sup>6</sup>Associate Professor, Department of Dravyaguna, I.M.S, B.H.U, Varanasi, India

Email: \*[doctorakhilesh.84@gmail.com](mailto:doctorakhilesh.84@gmail.com), 9452218997

### Abstract

Many people believe in nature cure. Mahatma Gandhi also believed in this system. I may be pardoned to say that no system of medicine is as near to nature as Ayurveda and really speaking Ayurveda is the best nature cure that man has ever invented. Brihatrayi is the collection of basic classic books for ayurvedic practioners and researchers from very begning. Haritaki is an important herbal drug has been used successfully by many more ayurvedic practioners from very begning in prameharoga (diabetes mellitus). The present encyclopedic study aims to highlighten the therapeutic value of Haritaki (*Terminalia chebula* Retz.) in reference to prameha rogaand helps to new researchers and practioners .

**Key Words:** Ayurveda, Haritaki, Brihatrayi, Encyclopedic, Prameharogaetc.

### Introduction

Medicinal plants have been used as natural medicines. This practice has been in existence since prehistoric times. There are different ways in which plants have been found useful in medicines such as crude extract of plants has been used directly because of the presence of natural chemical constituents such as berberine, morphine, psilocin, tannin, flavonoids, vincristine etc<sup>1</sup>. History of drug can be studied under *Vedic kala*, *Upanishad*, *Purana*, *Samhita*, *Nighantu* and *Adhunika kala*. *Haritaki* (*Terminalia chebula* Retz.) is a popular tree, which is used by traditional practioner to cure various ailments. On comprehensive review of *Ayurvedic* classics it

was found that *Haritaki* was not described in *vedic compandia*, but described in *Charaka samhita*, *Sushruta samhita* and both *Ashtanga Samgraha* and *Ashtanga Hradaya*, other *samhita granthas* and in *chikitsagrantha* like *Chakradatta*, *Sharangadhara samhita*, *Yogaratanakara* etc. and also in *nighantus*. Our aim was launched with an aim to explore the possibility of a better control over diabetes by *Haritaki* (*Terminalia chebula* Retz.).

*Terminalia chebula* Retz. is a moderate sized or large deciduous tree, attaining 25-30m in height. Leaf-buds branch lets and youngest leaves with soft, shining, generally rust-coloured hairs. Leaves 7-20 cm. By 4-8cm., glabrous or nearly so when

mature, not clustered, distant, alternate, or sub opposite, elliptic-oblong, acute, rounded or cordate at the base, penninerved, petioles 2-5 cm. Long, pubescent, usually with glands near the top. Flowers are hermaphrodite 4mm across sessile, dull-white or yellow, an offensives small. Bark 6mm thick, dark brown with many generally shallow vertical cracks. Fruit – the mature myrobalan is of an ovoid form, from 2.5 to 3.75 cm. Long, sometimes tapering towards the lower extremity obscurely 5-ribbed<sup>2</sup>.

In *vedic* compendia any description of *Haritaki* was not found. In *Shaunakasamhita* of *Atharvaveda*, term “*Jivanti*” was comes for *Leptadenia reticulata* W. & A. not for *Terminalia chebula* Retz. According to *Bhavamishra* *Haritaki* was originated from the drop of *Amrita* (Nector) which was fall down on earth during drinking of *Amrita* by Lord *Indra*.

#### ***Haritaki (Terminalia chebula Ritz.) in Brihatrayi***

In *Charaka samhita*, *Haritaki* was mentioned with synonyms i.e. *abhaya*, *amrita*, *pathya*, *vijaya*, *shiva* and *haritaki*. it is described among *arshoghna*, *kushthaghna*, *virechanopaga*, *hikkani-grahana*, *kasahar*, *jvarahar*, *prajasthapana*, *vayah-sthapana mahakashaya*. In *Sushruta samhita vachadi*, *mushkakai*, *parushakadi*, *mustadi*, *haritkyadi*, *triphaladi* & *amlakyadi gana* while in *Ashtanga Samgraha Vagbhatta* has mentioned it in *parushakadi gana*, *vachadi gana*, *mustadi gana* etc. In *Charaka samhita Haritaki* is indicated in *jvara*, *prameha*, *kushtha*, *unmada*, *apasmara*, *krimi roga*, *pandu*, *grahani*, *visha*, *madatyaya*, and *bhutabadha* etc<sup>3</sup>.

In *Sushruta samhita Haritaki* was mentioned with synonyms i.e. *abhaya*, *amrita*, *pathya*, *vijaya* and *haritaki*. it is indicated in *kushtha*, *kandu*, *apasmara unmada*, *pandu*, *bhagandara*, *garavisha*, *pliha roga*, *urustambha*, *gandamala*, *nadi vrana*, *netra roga*, *raktapitta*, *prameha*<sup>4</sup>. While in *Ashtanga Hridaya*, *Haritaki* was mentioned with synonyms i.e. *abhaya*, *pathya*, *pranada*, *vijaya*, *shiva* and *haritaki*. it is indicated in *garadosha*, *raktagulma*, *kshata*, *shukra*, *timira*,

*visha*, *vrana*, *ajirna*, *kushtha*, *tvakdosha*, *shopha* and *udararoga* etc<sup>5</sup>.

The pharmacological properties (*guna-karma*) of *Haritaki* fruit are as follows<sup>6</sup> –

- *Rasa* - *Kashaya*, *Amla*, *Madhura*, *Tikta* and *Katu*
- *Guna* - *Tikshna* and *Laghu*
- *Vipaka* – *Katu*
- *VÍrya* – *Ushna*

#### **Materials and Methods**

##### ***Charaka Samhita (1000 B.C. - 4 A.D.)***

This treatise is one of the existing old medical treatises of India, *Charaka samhita* can be considered as one of the oldest book of internal medicine. This text has been composed by *Maharishi Agnivesha* (1000 B.C.), *Acharya Charaka* (2000 B.C.) has reduced it and it is reconstructed by *Acharya Dridhabala* (4<sup>th</sup> Cent. A.D.). In *Charaka Samhita*, various formulations of *Haritaki* were used in *prameha (Diabetes mellitus)*, which are given in the table no. 1<sup>7</sup>.

##### ***Sushruta Samhita (1000 B.C.-500 A.D.)***

This *samhita* is composed by *Vridhdha Sushruta* (1000 B.C.) and is chiefly concerned to Surgery along with the other parts of medicine. This treatise was reduced by *Sushruta* in 2<sup>nd</sup> Cent. A.D. Later on revised by *Nagarjuna*, the greatest scientist of *Bauddha* era during 5<sup>th</sup> cent.A.D. At present time, this *Samhita* appears to be much recent than *Charaka Samhita* because of the fact that its amelioration (*pathashuddhi*) was done by *Chandrata* in 10<sup>th</sup> Cent. A.D. In *Sushruta Samhita* various formulations of *Haritaki* were used in *prameha (Diabetes mellitus)*, which are given in the table no.2<sup>8</sup>.

##### ***Ashtanga Samgraha (600 A.D.)***

This important treatise is written by *Vriaddha Vagbhatta*. He has included 45 *mahakashaya* of *Charaka Samhita* in his treatise. In *Ashtanga Samgraha Haritaki* has mentioned in *parushakadigana*, *vachadi gana*, *mustadi gana* etc. In this *samhita* various formulations of *Haritaki* were used in *prameha (Diabetes mellitus)*, which are given in the table no.3<sup>9</sup>.

**Ashtanga Hridaya (700 A.D.)**

This *samhita* has been written by *acharya Vagbhatta* in 7<sup>th</sup> Cent. A.D. In *Ashtanga Hridaya*, various formulations of *Haritaki* were used or could be used in *prameha* (*Diabetes mellitus*), which are given in the table no. 4<sup>10</sup>.

**Sharangadhara Samhita (1400 A.D.)**

It comes under *Laghutrayi*, writer of this book was *Acharya Sharangadhara* son of *Damodar*. This book is divided into three parts *purva khanda*, *madhyama khanda* and *uttara khanda*. *purva khanda* is concerned with *mana prakarana*, *nadipariksha*, *dipana* and *pachana* actions etc. *Madhayama khanda* is concerned with *bhaishajya kalpana* and *rasashastra*. *Uttarakhanda* is concerned with *panchakarma* and *kriyakalpa*, *ahiphen* is first time introduced here. For the first time this treatise gives difference between *asava* and *arishta*. *Sharangadhara* has introduced *snayu krimi* for the first time. Many new formulations have been applied in this treatise in many diseases according to author's experience like *shakhotaka* in *shlipada*, *shringabhasma* in *hridyashula* and *kanchanara* in *gandamala* etc. *Haritaki* was mentioned in various formulations of *Haritaki* were used in *prameha* (*Diabetes mellitus*), which are given in the table no. 5<sup>11</sup>.

**B.c. Haritaki in chikitsa grantha****Yogaratanakara (17<sup>th</sup> Cent. A.D.)**

This text book was written in 7<sup>th</sup> Cent., this holds different *yogas* (preparations) for different diseases. *Haritaki* was mentioned in different formulations for multiple purposes. The formulations which were indicated for *prameharoga* are mentioned in table no. 6<sup>12</sup>.

**Chakradatta (11<sup>th</sup> Cent. A.D.)**

This *chikitsa grantha* has been written by *Chakrapanidatta*, the great commentator of *Charaka Samhita* and *Sushruta Samhita* has gone to as name *Charaka Chaturanana* and *Sushruta Sahasraksha*. *Haritaki* was mentioned in different formulations for multiple purposes. The formulations which were indicated for *prameha* or *madhumeharoga* are mentioned in table no. 7<sup>13</sup>.

**B.d.1. Haritaki in various Nighantu****i. Saushruta nighantu (6<sup>th</sup> Cent.)**

This *nighantu* was written by *Acharya Saushruta* based on *Susruta samhita*. In this *nighantu*, *Haritaki* has been described in *mushkakadi gana*. *Abhaya*, *Pathya*, *vijaya*, *amrita*, *pranada*, *nandini* are the synonym of it<sup>14</sup>.

**ii. Ashtanganighantu (8<sup>th</sup> Cent.)**

*Ashtanga nighantu* was written by *Vahatacharya*. In this *nighantu*, *Haritaki* has been described in *parushakadi gana*. Its synonym are described here are *pranada*, *putana*, *amogha*, *abhaya*, *jaya*, *pathya*, *amrita*, *haimavati*, *pinditaka*, *kayastha* and *rohini*<sup>15</sup>.

**iii. Dhanvantarinighantu (10<sup>th</sup> Cent.)**

It was written by *Mahendra Bhaugik*. In the beginning of *Nighantu*, author pays homage to lord *Dhanawantari* and again he mentions its name as *Dravyavali*. At the end of *Dravyavali* author desires to describe the drugs of *Dravyavali* with their synonyms and after that he has described their properties and actions along with synonyms. *Haritaki* has been placed in *guduchyadi varga* and *abhaya*, *pathya*, *prapathya*, *putana*, *amrita*, *jaya*, *avyatha*, *haimavati*, *vayastha*, *chetaki*, *shiva*, *pranada*, *nandini*, *rohini* and *vijaya* have been given as its synonym. Regarding its properties, it has been said as *kashaya*, *amla*, *katu*, *tikta*, *madhura* in *rasa*. It is indicated in *lekhana karma*, *medhya karma*, *chakshuroga*, *meha*, *kushtha*, *vrana*, *vamana*, *shopha*, *vatarakata*, *mutrakrichchhra* and *indriyaprasadana*<sup>16</sup>.

**iv. Madanapalanighantu (14<sup>th</sup> Cent.)**

This *nighantu* was written by *Madanpal*. In this *nighantu* *Haritaki* has been found in *abhayadi varga*. Following are the synonym of *Haritaki* are *shiva*, *pathya*, *chetaki*, *vijaya*, *jaya*, *putana*, *prapathya*, *prathama*, *amogha*, *kayastha*, *pranada*, *amrita*, *jivaniya*, *hemavati*, *vritana*, *abhaya*, *vayahastha*, *nandini*, *shreyasi* and *rohini*. Regarding its properties, it has been said as *kashaya*, *katu*, *tikta*, *amla*, *madhura* *rasa*, *ruksha* *guna*, *ushna* *virya*. It is indicated in *dipana*, *medhya*, *vrishya*, *chakshushya*, *brimhana*, *shvasa*, *kasa*, *jvara*, *prameha*, *gulma*, *arsha*, *kushtha*, *shopha*, *udarakaroga*, *krimi*, *grahani*, *vibandha*,

*vishamajvara, gulma, adhmaana, vrana, hikka and kandu*<sup>17</sup>.

#### v. *Rajanighantu* (14<sup>th</sup> Cent.)

This book is written by *Narhari Pandit*, who had add first *Dravyagunain Astanga Ayurveda* and also gives it first place in *ashtanga Ayurveda*. This book is particularly based on the *Dhanwantari nighantu*. The subject matter has been divided into 23 chapters. *Haritaki* is included in *amradi varga* in this *nighantu*. *Haimavati, jaya, abhaya, shiva, avyatha, chetanika, rohini pathya, prapashtya, putana, amrita, jivapriya, jivanika, jivanti, pranada, jivya, kayastha, shreyasi, devi, divya* and *vijaya* have been given as its synonyms. Its *rasa* has been mentioned as *kashaya, Katu, tikta, amla, madhura*<sup>18</sup>.

#### vi. *Bhavaprakashanighantu* (16<sup>th</sup> Cent.)

This *nighantu* was written by *Acharya Bhavmishra*, *Haritaki* has been described in *haritakyadi varga* and the following synonyms are found in this *nighantu*- *abhaya, pathya, kayastha, putana, amrita, haimavati, avyatha, chetaki, shreyasi, shiva, vayastha, vijaya, jivanti, and rohini*. Its *rasa* has been mentioned as *kashaya, katu, amla, madhura* and *tikta rasa, laghu* and *ruksha guna, ushna virya* and *vipaka madhura*. It is indicated in *dipana, medhya, rasayana, chakshushya, anulomana, shvasa, kasa, prameha, arsha, kushtha, shotha, udararoga, krimi, grahani, vibandha, vishamajvara, gulma, adhayamana, chhardi, hikka, kamla, shula, anaha, pliha roga, ashmari, mutrakrichchha* and *mutraghata*<sup>19</sup>.

#### vii. *Shaligramanighantu* (19<sup>th</sup> Cent.)

In this *nighantu* *Haritaki* has been placed in *haritakyadivarga* and *abhaya, pathya, kayastha, putana, amrita, haimavati, avyatha, chetaki, shreyasi, shiva, vayastha, vijaya, jivanti* and *rohini* are said as its synonyms. Its *rasa* has been mentioned as *kashaya, amla, madhura tikta* and *katu* in *rasa; laghu* and *ruksha guna, ushna virya* and *vipaka madhura*. It is indicated in *dipana, medhya, rasayana, chakshushya, anulomana, shvasa, kasa, prameha, arsha, kushtha, shotha, udararoga, krimi, grahani, vibandha, vishamajvara, gulma, adhayamana, chhardi, hikka, kamla,*

*shula, anaha, pliha, ashmari, mutrakrichchhra* and *mutraghata*<sup>20</sup>.

#### viii. *Priyanighantu* (20<sup>th</sup> Cent.)

This book was written by *Acharya Priyavrata Sharma*, In this *nighantu* *Haritaki* was mentioned in *Haritkyadi varga* and *Haritaki, abhaya, kayastha* has been included as its synonym. Regarding its properties, it has been said as *pancarasa* and *alavana* in *rasa*. It is *tridosahara* and indicated in *dosha anulomana, dipana, pachana, arsha, gulma, udavarta, anaha, udararoga, shotha, pandu, svarabheda* and *kasa*<sup>21</sup>.

#### Medicinal aspect and hypoglycemic activity

Experimental study on *Haritaki* (*Terminalia chebula* Retz.) with regards diabetes has been done are:

1. Antihyperglycemic effect of water extract of dry fruits of *Terminalia chebula* in experimental diabetes mellitus<sup>22</sup>.
2. Long-term Effects of *Terminalia chebula* Retz. On Hyperglycemia and Associated Hyperlipidemia, Tissue Glycogen Content and in Vitro Release of Insulin in Streptozotocin Induced Diabetic Rats<sup>23</sup>.

On the basis of above mentioned properties of *Haritaki* and review of experimental study on *Haritaki* (*Terminalia chebula* Retz.) and in API-part-I, Vol.-I, the therapeutic uses in *Prameha* of *Haritaki* is also mentioned, we select this drug for review of its effect on *prameha* (diabetes mellitus).

#### Mode of action of *Haritaki* as per ayurvedic pharmacology

*Prameha* is a *tridoshaja vyadhi*. *Abadhashleshma* is particular *dosha* in all types of *prameha*. The clinical entity in which patient voids the urine having concordance with *madhu* i.e. of *kashaya* and *madhura* taste, *ruksha* texture and *madhu* (honey) like colour and body acquires sweetness is called *madhumeha*. Treatment of *madhumeha* is difficult due to contradictory treatment of *vata* (predominant *dosha*) and *meda* (predominant *dushya*). Drugs which combate *vata* will increase *meda* and *kapha* and vice-versa. In *avaranajanya madhumeha* the treatment must be such that is

should not vitiate vata and should clear avarana also.

*Haritaki* is indicated in *prameha* by authors of *brihattarayi*, other *samhitagrantha*, *chikitsagrantha* and *nighantus*, *kapha*, *abadhha meda* and *vata* are main factors in pathogenesis of *madhumeha*. *Haritaki* having *kashaya*, *katu*, *tikta*,

*amla*, *madhura* in *rasa*, *ruksha* in *guna*, *ushna* in *virya*. It also has *tridoshashamaka* action which is desirable in treatment of *prameha*. By the phytochemical study, UV-Vis. spectroscopy and FTIR study of hydroalcoholic extract of fruit pericarp shows following compounds are present in it, which are mention in table no. 8.

**Table 1: Charaka Samhita**

S.No.	Preparation	Indication	Reference
1.	<i>Santarpana yoga</i>	<i>Kapha prameha</i>	<i>C.Ci. 6/22</i>
2.	<i>Kvatha</i>	<i>Prameha</i>	<i>C.Ci. 6/26</i>
3.	<i>Kvatha</i>	<i>Kapha prameha</i>	<i>C.Ci. 6/27</i>
4.	<i>Kvatha</i>	<i>Kapha prameha</i>	<i>C.Ci. 6/28</i>
5.	<i>Kvatha</i>	<i>Kapha prameha</i>	<i>C.Ci. 6/29</i>
6.	<i>Kvatha</i>	<i>Pittaja prameha</i>	<i>C.Ci. 6/30</i>
7.	<i>Phalatrikadi Kvatha</i>	<i>Sarva prameha</i>	<i>C.Ci. 6/40</i>
8.	<i>Lodhrasava</i>	<i>Prameha, pandu, arsha etc.</i>	<i>C.Ci. 6/41</i>
9.	<i>Kvatha / svarasa</i>	<i>Prameha</i>	<i>C.Ci. 6/46</i>

**Table 2: Sushruta Samhita**

S.No.	Preparation	Indication	Reference
4.	<i>Arishta</i>	<i>Kushtha, meha, pandu etc.</i>	<i>S.Ci. 10/6</i>
5.	<i>Ayaskriti</i>	<i>Kushtha, meha, meda, shotha etc.</i>	<i>S.Ci. 10/11</i>
6.	<i>Mahaushadha ayaskriti</i>	<i>Kushtha, prameha etc.</i>	<i>S.Ci. 10/12</i>
7.	<i>Kvatha</i>	<i>Sarva prameha</i>	<i>S.Ci. 11/8</i>
8.	<i>Kvatha</i>	<i>Phenameha</i>	<i>S.Ci. 11/9</i>
9.	<i>Kvatha</i>	<i>Ksharameha</i>	<i>S.Ci. 11/9</i>
10.	<i>Kvatha</i>	<i>Sarva prameha</i>	<i>S.Ci. 11/11</i>
11.	<i>Dhanvantara ghrita</i>	<i>Meha, shotha, gulma, pidika etc.</i>	<i>S.Ci. 12/5</i>
12.	<i>Navayasa lauha</i>	<i>Shotha, pandu, kustha, prameha etc.</i>	<i>S.Ci. 12/11</i>

**Table 3: Ashtanga Samgrah**

S.No.	Preparation	Indication	Reference
1.	<i>Churna</i>	<i>Sarva prameha</i>	<i>A.S.Ci.14/6</i>
2.	<i>Kvatha</i>	<i>Kapha meha</i>	<i>A.S.Ci.14/7</i>
3.	<i>Kashaya</i>	<i>Lala meha</i>	<i>A.S.Ci.14/8</i>
4.	<i>Kashaya</i>	<i>Kshara meha</i>	<i>A.S.Ci.14/8</i>
5.	<i>Dhanvantara ghrita</i>	<i>Sarva prameha, arsha, kushtha etc.</i>	<i>A.S.Ci.14/12</i>
6.	<i>Lodhrasava</i>	<i>Krimi, shopha, sarva prameha etc.</i>	<i>A.S.Ci.14/14</i>
7.	<i>Dashamularishta</i>	<i>Krimi, shopha, sarva prameha etc.</i>	<i>A.S.Ci.14/15</i>
8.	<i>Mustadi churna</i>	<i>Meha, pliha, pandu etc.</i>	<i>A.S.Ci.14/18</i>

**Table 4: Ashtanga Hridaya**

S.No.	Preparation	Indication	Reference
1.	<i>Kvatha</i>	<i>Sarva prameha</i>	<i>A. H.Ci. 12/6</i>
2.	<i>Kashaya</i>	<i>Kaphaja prameha</i>	<i>A. H.Ci. 12/7</i>
3.	<i>Siddha grita</i>	<i>Sarva prameha, gulma, arsha etc.</i>	<i>A. H.Ci. 12/20</i>
4.	<i>Rodhrasava</i>	<i>Prameha, arsha, kushtha etc.</i>	<i>A. H.Ci. 12/26</i>

**Table 5: Sharangadhara Samhita**

S.No.	Preparation	Indication	Reference
1.	<i>Varadi kvatha</i>	<i>Prameha</i>	<i>Sa.M. 2/110</i>
2.	<i>Vatsakadi kvatha</i>	<i>Prameha</i>	<i>Sa.M. 2/110</i>
3.	<i>Phalatrikadi kvatha</i>	<i>Sarva prameha</i>	<i>Sa.M. 2/111</i>

4.	Mehabaddha rasa	Jirna prameha	Sa.M.12/203
----	-----------------	---------------	-------------

Table 6: Yogaratnakara

S.No.	Preparation	Indication	Reference	Page No.
1.	Kvatha	Kaphaja prameha	Y.R.Utt.Pr.1	82
2.	Kvatha	Kaphaja prameha	Y.R.Utt.Pr.2	82
3.	Kashaya	Lala meha	Y.R.Utt.Pr.1	83
4.	Kashaya	Kshara meha	Y.R.Utt.Pr.2	84
5.	Kvatha	Dvandvaja prameha	Y.R.Utt.Pr.2	84
6.	Phalatrikadi Kvatha	Sarva prameha	Y.R.Utt.Pr.1	85
7.	Nisha triphala yoga	Prameha roga	Y.R.Utt.Pr.1	86
8.	Triphala kalka	Meha roga	Y.R.Utt.Pr.1	86
9.	Triphaladi churna	Prameha roga	Y.R.Utt.Pr.1	86
10.	Nyagrodhadi churna	Prameha roga	Y.R.Utt.Pr.3	86
11.	Svarasa	Prameha roga	Y.R.Utt.Pr.4	86
12.	Karkatibeejadi churna	Mutravarodha	Y.R.Utt.Pr.1	87
13.	Gokshuradi guti	Prameha, vata roga, pradara etc.	Y.R.Utt.Pr.1	87
14.	Chandraprabha guti	Prameha, vata roga, pradara etc.	Y.R.Utt.Pr.1	88
15.	Asava ghrta	Pandu, arsha, udararoga, prameha	Y.R.Utt.Pr.1	90
16.	Simhmriata ghrta	Prameha, bhagandara	Y.R.Utt.Pr.1	90

Table 7: Chakradutta

S.No.	Preparation	Indication	Reference
1.	Triphaladi kvatha	Phenameha	C.D.Pr. 10
2.	Kvatha	Kaphameha	C.D.Pr. 11
3.	Kvatha	Pittaprameha	C.D.Pr. 13
4.	Kashaya	Pittaprameha	C.D.Pr. 15
5.	Kvatha	Sarvaprameha	C.D.Pr. 21
6.	Phalatrikadi kvatha	Sarvaprameha	C.D.Pr. 22
7.	Katamkateryadi kvatha	Sarvaprameha	C.D.Pr. 23
8.	Triphaladi kvatha	Sarvaprameha	C.D.Pr. 24
9.	Churna	Sarvaprameha	C.D.Pr. 25
10.	Nyagrodhadi Churna	Sarvaprameha	C.D.Pr. 29,30
11.	Dhanvantara ghrta	Sarvaprameha	C.D.Pr. 35,38
12.	Mahadadimadi ghrta	Sarvaprameha	C.D.Pr. 46
13.	Tryshananadi gutika	Sarvaprameha	C.D.Pr. 52

Table 8: Phytochemical study of hydroalcoholic (50%-50%) extract of fruit pericarp of Haritaki

S.No.	Chemical tests	Hydroalcoholic extract Haritaki
	Carbohydrates	-
	Protiens	+
	Amino acids	+
	Glycosides	+
	Flavanoids	+
	Alkaloids	+
	Tannins and Phenolic Compounds	+
	Steroids	-
	Vitamins	+

**Abbreviations:** C. - Charaka samhita, S. - Sushruta samhita, A.H. -Ashtanga Hridaya, Su. -Sutrasthana, Ci. - Chikitsasthana, K.- Kalpasthana, Si. - Siddhisthana, U. - Uttaratantra

### Discussion

In Charaka samhita Haritaki is indicated in jvara, prameha, kushtha, unmada, apasmara, krimi roga, pandu, grahani, visha, madatyaya, and bhutabadha etc. In Sushruta samhita it is indicated in kushtha, kandu, apasmara unmada, pandu, bhagandara, garavisha, pliha roga, urustambha, gandamala, nadi vrana, netra roga, raktapitta, prameha. While in Ashtanga Hridaya, it is indicated in garadosha, raktagulma, kshata, shukra, timira, visha, vrana, ajirna, During review of prameha it has been revealed that madhumeha is included under ashtamahagada

mentioned by *acharya Charaka* (C.S.In.9/8), and *prameha* is included under *ashtamahagada* by *acharya Sushruta* (Su.S. 33/4) and *acharya Vagbhatta* (A.H.Ni.8/30). Aggravated *kapha*, *pitta*, *meda* and vitiated *vata* are the factors involved chiefly pathogenesis of *prameha*. *Haritaki* is indicated in *prameha* by some *nighantukara* also. Its properties and actions are *kashaya*, *katu*, *tikta*, *amla*, *madhura rasa*, *ruksha guna* and *ushna virya* by which it could be effective in *prameha roga* (Diabetes mellitus). According to modern concepts tannic acid reduces glucose absorption by coating the inner layer intestine. By the research works in past we can say the presence of flavonoids, tannins are possibly supports and provide strong evidence of its hypoglycemic effect<sup>24,25</sup>.

### Conclusion

The present review on *Haritaki* starting from *vedic* era upto modern era. On review it was noted that in *vedic* compendia *Haritaki* has not mentioned, but in *brahatrayi* and *Ashtanga samgraha* a lot of references regarding its synonyms, properties, indications are available. In *brahatrayi* use of *Haritaki* fruit is indicated in *jvara*, *prameha*, *kushtha*, *unmada*, *apasmara*, *krami roga*, *pandu*, *grahani*, *visha*, *madatyaya*, and *bhutabadha* etc. *Madhumeha* is one among *vatika prameha*. Aggravated *kapha*, *pitta*, *meda* and vitiated *vata* are the factors involved chiefly pathogenesis of *prameha*. The properties of *Haritaki* are *kashaya*, *katu*, *tikta*, *amla*, *madhura rasa*, *ruksha guna* and *ushna virya* and by all these properties *Haritaki* could be effective in *prameha roga* specially in *madhumeha* (Diabetes mellitus type-2). In this regard, further studies need to carry out to explore *Haritaki* for its therapeutics potential in preventing and treating *prameharoga* (diabetes mellitus).

### Acknowledgement

With devotion I bow down at the Lotus feet of Lord Vishwanath and my beloved mother *Late Smt. Yagya Kumari* who blessed me and my ambition to come true, I offer my sincere regards

to *Bharata ratna Mahamana Pt. Madan Mohan Malviya Ji's* soul, founder of this renounced alma mater, for asking God to carve my stars in a way that I became fortunate enough to pursue my higher education in his divinely masterpiece, the mighty internationally famous university, B.H.U., in the holy city Varanasi. With immense pleasure and gratitude, I regard my deep respect to my learned and reverend Supervisor Dr. B. Ram (Associate Professor) and Co-supervisor Prof. K. N. Dwivedi (Professor) and to my sir Dr. Sanjeev Kumar (Assistant professor), Department of Dravyaguna, Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu University, Varanasi, those gave me scientific searchlight at every stage. It is only their guidance, ability and supervision and extra ordinary constant hard work taken in each step that has enabled me to complete my work. I also want to thank to Dr. Sapna Chaudhary, Mr. Sanjay Kumar for helping me for completion of this article.

### References

1. Balandrin *et al.*, Natural Plant Chemicals: Sources of Industrial and Medicinal Materials. Science., 1985; 228: 1154-1160.
2. Dr. Gyanendra Pandey, Dravyaguna Vijyana, part-I, Published by Chaukhambha krishnadas Academy, Varanasi, Ed.- 2005, pp-750-751.
3. Shri Agnivesha, Charaka Samhita, Revised by Charaka and Dridhbala, Introduced by Sri S. N. Sastri, Elaborated Vidyotini Hindi Commentary by Pt. Kasinatha Sastri And Dr. Gorakha Nath Chaturvedi, Chaukhambha Bharti Academy Varanasi, Edition- 2009.
4. 'Ayurveda tatvasandipika' tika of Sushruta Samhita, Kaviraj Dr. Ambika Dutt Sastri, Chaukhambha Sanskrit Santhan, Edition- 2009.
5. Kaviraj Atrideva Gupta, 'Vidyotini' Tika of Ashtanga Hridaya, Chaukhambha Prakashana, Edition-2009.
6. Prof. P. V. Sharma, Dravyaguna Vijyana, Vol.- II, Published by Chaukhambha

- Bharti Academy, Varanasi, Ed.- 2006, pp-753.
7. Shri Agnivesha, Charaka Samhita, Revised by Charaka and Dridhbala, Introduce by Sri S. N. Sastri, Elaborated Vidyotini hindi Commentry by Pt. Kasinatha Sastri And Dr. Gorakha Nath Chaturvedi, Chawkhambha Bharti Academy Varanasi, Edition- 2009.
  8. Kaviraj Dr. Ambika Dutt Sastri, 'Ayurvedatatvasandipika' tika of Sushruta Samhita, Chaukhamba Sanskrit Santhan, Edition- 2009.
  9. Acharya Indu, 'Shashilekha' Sanskrit Comentary on Ashtanga Samgraha of Vriddha Vagbhatta, Edited by Dr. Shivprasad Sharma, Chaukhamba Sanskrit Series office, Edition- 2008.
  10. Kaviraj Atrideva Gupt, 'Vidyotini' Tika of Ashtanga Hridaya, Chaukhamba Prakashana, Edition-2009.
  11. Dr. Shailaja Srivastava, 'Jivanprada' hindi commentary on Sharangdhara Samhita of Acharya Sharangadhar, published by Chaukhamba Orientalia, Edition- 209.
  12. Vaidya Laksmipati Shastri, 'Vidyotini' hindi commentary on Yogaratnakar, Edited Bhishagratna Bramhashankar Shastri, Chaukhamba Prakashana, Edition-2012.
  13. Dr. Indradev Tripathi, 'Vaidhprabha' hindi commentary on Chakradutta, Edited by Prof. Ramanath Dwivedi, Chaukhamba Sanskrit Santhan, Edition- 2011.
  14. Acharya Sausruta, Sausruta Nighantu, edited by Kashiraja Sharma and Narendra Nath Tiwari; Pub. by Mahendra Sanskrit Vishvavidhalaya, Nepal, 1st Edition, 2001. P. no. 75.
  15. Astanga Nighantu by Vahatachaya, Edited by P.V.Sharma, 1st Edition, Kuppuswamy Shastri Research Institute, Madras, 1973, P. no. 7.
  16. *Mahendra Bhaugik*, Dhanwantari Nighantu, edited by Prof. P. V. Sharma, published by Chaukhamba Orientalia, 2009, P. no. 53.
  17. Madanapala, Madanapala Nighantu by Pt. Ramaprasad Patiyala with Hindi commentary, Pub. By Khemraj Srikrishnadas Prakashana Bombay, 1998, P. no. 2.
  18. Dr. Indradev Tripathi, Raj Nighantu, Acharya Vishwanath Durvedi Pub. Krishna Das Academy Varanasi 1982, P. no. 384.
  19. Bhavmishra. Bhavaprakash Nighantu edited by Chunekar KC and Pandey CS. 6th edition, Chaukhamba Bharat Academy, Varanasi.1982 P. no. 3.
  20. Lala Shaligramji Vaishya, Shaligramnighntubhushana, published by Khemraj Shrikrishnadass, Mumbai, Jan. 2011, P. no.72.
  21. Sharma PV, Priya Nighantu, Chaukhamba Surabharati Prakashana, Varanasi, 2004, P. no. 5.
  22. Y. K. Murali *et al.*, Indian Journal of Clinical Biochemistry, 2004, 19(2) 202-204.
  23. Y. K. Murali *et al.*, DOI10.1055/s-2007-982500 Exp Clin Endocrinol Diabetes, 2007; 115: 1 – 6© J. A. Barth Verlag in Georg Thieme Verlag KG Stuttgart · New York ISSN 0947-7349.
  24. Gin et al., Effects of red wine, tannic acid, or ethanol on glucose tolerance in non—insulin-dependent diabetic patients on starch digestibility in vitro Metabolism, Pubmed, 1999.
  25. Antihyperglycaemic and antioxidant effect of rutin, a polyphenolic flavonoid, instreptozotocin-induceddiabetic wistar rats, Kamalakkannan, Basic & clinical pharmacology and toxicology, 2006.



