



## KRIMIGHNA MAHAKASHAYA OF CHARAK SAMHITA: A CRITICAL REVIEW

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### ABSTRACT

The term “Krimi” is frequently used in ancient Ayurvedic classics and it is a causative factor for various pathological conditions like weight loss, anaemia, vomiting, headache etc. The Krimi may be external or internal in nature. The Krimi described in ancient texts are more or less similar to microbes or helminths mentioned in present time. Ayurveda has advised specific drugs for specific Krimi. Acharya Charaka has mentioned a group of ten medicinal plants with Krimighna properties and actions, which is known as Krimighna Mahakashya. On close observation it has been observed that plants of this group have specific rasa, guna, veerya, vipaka and prabhava by which they act. They are used in clinical practice frequently in form of single drug or in

combinations. Here an attempt has been made to critically analyse the Krimi and Krimighna Mahakasaya individually as well as in group.

**KEYWORDS:** Charak Samhita, Krimighna Mahakashya, Helminths.

### INTRODUCTION

Ayurveda the science of life has ample literature about the Krimi. Even in the Vedic period the knowledge of Krimi is well known and comprehended. Our pioneer texts Brihatrayee (Charak samhita, Sushruta samhita, Ashtang hridaya) and Laghutrayee (Bhavaprakash

samhita, Madhav nidana, Sharangdhar samhita) has given a systematic description of Krimi rogas including their causative factor, origin, classification, symptoms, habitat, treatment and preventive measures. The word Krimi by etymology means as the “one which causes sufferings and ill health”<sup>[1]</sup>. Krimi has been used in Ayurveda in broader sense i.e. it includes all the microbes and worms (both pathogenic & non pathogenic) covering a wide range of infections and infestations. Krimighna dravyas are those which are used to kill or expel out pathogenic & non pathogenic microbes or worms from the body<sup>[2]</sup>. On close observation it can be said that modern correlation of Krimighna dravyas can be made with anthelmintic, antimicrobial, vermifuge or vermifuge drugs.

Ayurveda is distinct in its treatment approach to Krimi, covering both preventive & curative aspect by using herbal drugs/ Medicinal plants. Acharya Charaka has described a group of ten plants, known as Krimighna Mahakashaya, having antimicrobial or anthelmintic properties. Among these dravyas Vidanga (*Embelia ribes* Linn.) is considered as the superior one<sup>[3]</sup>. Similarly Sushruta Samhita has also mentioned Arkaadi, Sursaadi, Trapyaadi and Lakshaadi ganas<sup>[4]</sup> containing many medicinal plants having Krimighna properties and actions. Besides the dravyas mentioned in Charaka and Sushruta Samhita literature of many more plants with Krimighna action is available in ancient texts. Here an attempt has been made to critically analyse the various Krimi and their treatment strategy by using plants of Krimighna Mahakasaya individually as well as in group.

### **Description of Krimi**

Krimi are thought to be a major causative factor for a number of diseases. Factors responsible for the growth of Krimi are intake of food in indigested state, excess use of madhura and amla rasa, pishtana jaggery, milk, kusumba oil, til oil, fish, anoop mamsa, sedentary life style, excess day sleeping and use of dietetic incompatibilities etc<sup>[5,6]</sup> Almost all the Acharyas has mentioned 20 types of Krimi which are further classified under different groups which are as follows:

1. According to site of the body
  - a) Bahya or External Krimi eg. Liksha & Yuka
  - b) Abhyantara or Internal Krimi eg. Antrada, Udumbar etc
2. According to effect on the body
  - a) Sahaja (Non Pathogenic)
  - b) Vaikarika (Pathogenic)

3. According to source of origin
  - a) Malaja – originated from bahya mala like sweat
  - b) Raktaja – originated from blood vessels(Dhamani)
  - c) Kaphaja – originated from Amashaya(Stomach)
  - d) Purishaja - originated from Pakvashaya(Large Intestine)

The number and nomenclature of krimi's mentioned in various ancient texts is described in table 1 and table 2 respectively.

**Table no. 1 - Classification of Krimi in Samhitas**

Sr. No.	Samhitas	Bahya Krimi	Abhyantara	Total No. of Krimi
1.	Charaka Samhita	02	K=07, R= 06, P= 05	20
2.	Sushruta Samhita <sup>[6]</sup>	-	K=06, R= 07, P= 07	20
3.	Ashtanghridya <sup>[7]</sup>	02	K=07, R= 06, P= 05	20
4.	Harita Samhita <sup>[8]</sup>	07	K=06	13
5.	Sharangdhar <sup>[9]</sup> Samhita	02	K=07, R= 06, P= 05 And Snayuka Krimi	20+1=21

K = Kaphaja krimi ; R = Raktaja krimi ; P = Purishaja krimi

**Table no. 2 - Nomenclature of Krimi in Samhitas**

Sr. no.	Types of Krimi	Charaka Samhita C.S.Vi. 7/10-13	Sushruta Samhita S.S.U.54/8,12,15
1.	Bahya Krimi	Yuka, Liksha	-
2.	Kaphaja Krimi	Antrada, Udarada, Hridyachara, Mahaguda, Churu, Darbhpushpa, Sugandhika	Darbhpushpa, Mahapushpa, Praloona, Chipita, Pippalika, Daruna
3.	Raktaja Krimi	Keshada, Lomada, Lomadvipa, Saurasa, Udumbara, Jantumatra	Keshada, Romada, Nakhada, Dantada, Kikkisha, Kushtaja, Parisarpa
4.	Purishaja Krimi	Kakeruka, Makeruka, Leliha, Sashoolaka, Shausurada	Ajawa, Vijawa, Kipyra, Chipya, Gandupada, Churu, Dvimukha

Kaphaja and Purishaja krimis are visible to naked eyes while Raktaja krimis are invisible.

In present scenario the Krimi are categorized in two groups

1. Samanya Krimi (General worms).
2. Vishishta Krimi (Specific worms) like Spheet krimi (Tape worm), Gandupad Krimi (round worm), Ankushmukhi krimi (hook worm), Sutra krimi (thread worm) etc.

### Treatment principle of various Krimis

Acharya Charaka has advised following three methods for the treatment of Krimi<sup>[5]</sup>

1. Apakarshana (it refers to forceful expulsion of harmful substances by Shodhana procedures like vamana, virechana, asthapana basti and shirovirechana)

2. Prakruti Vighata (breaking the pathogenesis)- It is done by creating an unfavorable environment or medium which is opposite to the habits of the worms. It is advised to do so by using Katu, Tikta, Kshaya and Ushana dravyas and the substances which are opposite to the quality of kapha and purish.
3. Nidana Parivarjanam – It means to avoid all the causative and predisposing factors responsible for the growth of Krimi.

Apart from above said classical methods of treatment of Krimi modern Ayurvedic scholars advocated many herbal plants which is mentioned in table 3.

**Table no. 3 - Medicinal Plants used for the treatment of Krimi –**

Sr. No.	Bahya Krimi (Insecticide)	Samanya (General) Krimi	Vishistha (Specific) Krimi <sup>[10]</sup>
1.	Nimba	Aranyajeerak	<b>Gandupada</b> – Chauhar, Palashbeej, Vidanga, Paribhadra, Indrayava
2.	Vacha	Ingudi	<b>Spheeta</b> – Kampilaka, Puga, Dadim twak
3.	Dhatuira	Yavani	<b>Tantu</b> – Kumari, Chirayata, Nimba
4.	Katphala	Aphsantin	<b>Ankusha</b> – Yavani satva, Bhallataka taila
5.	Lahsuna	Barbari	<b>Sleepada</b> – Shakhotaka
6.	Karanja	Nimba	<b>Snayu</b> – Nirgundi, Shigru

### Krimighna Mahakashaya

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Acharya Charaka has classified the dravyas as per pharmacological actions into 50 mahakashaya (50 groups of dravyas)<sup>[11]</sup> Each group contains ten dravyas for a particular action. Out of these 50 mahakashaya Krimighna mahakashaya is the 15<sup>th</sup> number mahakashaya. The name of dravyas mentioned in this mahakashaya are Aksheev, Maricha, Gandeer, Kebuka, Vidanga, Nirgundi, Kinihi, Swandantra, Vrishparnika and Akhuparnika. Acharya Chakrapani commented on few drugs of this list viz- Aksheev as Abdaka/Shobhanjana, Gandeer as Shamatha shaka, Nirgundi as Sindhuvara, Kinihi as Katabhi, Akhuparni as Mushikaparni and Vrishparni as the variety of Akhuparni.<sup>[12]</sup> The scientific data of the dravyas of Krimighna mahakashaya is mentioned in table 4 & 5.

Table no. 4 – Showing name, Latin name, family, habit & parts used<sup>[13, 14]</sup>

Sr. No.	Sanskrit name	Common name	Latin name	Family	Habit	Parts used
1.	Aksheev	Shigru/ Shahinjan	<i>Moringa oleifera L.</i>	Moringaceae	Tree	Root bark, seeds
2.	Maricha	Kalimirch	<i>Piper nigrum L.</i>	Piperaceae	Climber	Fruits
3.	Gandeer	Snuhi Bhed	<i>Euphorbia antiqurum L.</i>	Euphorbiaceae	Shrub	Latex
4.	Kebuka	Kemuk	<i>Costus speciosus Smith.</i>	Scitaminae	Herb	Rhizome
5.	Vidanga	Baiyvidang	<i>Embelia ribes Burm.f.</i>	Myrsinaceae	Shrub	Seeds, root
6.	Nirgundi	Sindhuvaar	<i>Vitex negundo L.</i>	Verbenaceae	Small tree	Leaves, root
7.	Kinihi	Apamarga/ Latjeera	<i>Achyranthes aspera L.</i>	Amaranthaceae	Herb	Seeds, root, leaves, whole plant
8.	Swadanshtra	Gokshur	<i>Tribulus terrestris L.</i>	Zygophyllaceae	Herb	Root, fruit
9.	Vrishparnika	Musakarni bhed	<i>A variety of Ipomea reniformis Chois.</i>	Convolvulaceae	Creepers	Whole plant
10.	Akhuparnika	Musakarni	<i>Merremia emarginata Burm. f.</i>	Convolvulaceae	Creepers	Whole plant

Table no. 5 – Shows Rasapanchaka, Chemical constituents, Pharmacological properties &amp; action of Krimighna Mahakashaya.

Sr. No.	Name of plant	Rasapanchaka <sup>[14,15]</sup> (Properties)	Chemical Constituents <sup>[16]</sup>	Pharmacological properties & action
1.	Aksheev	Guna - LRT Rasa- Katu, Madhura Virya- U Vipaka- K	Moringanine, Morangine, flavonoids, proteins, Pterygospermin	Leaves, bark, pods, seeds showed antibacterial <sup>[17]</sup> and antifungal <sup>[18]</sup> activity whereas its seed oil possess anthelmintic <sup>[19]</sup> activity
2.	Maricha	Guna - LT Rasa- Katu Virya- U Vipaka- K	Piperine, Piperidine, Piperitine, Chavicine	Piperine shows antibacterial activity against many gram + ve bacteria and antifungal activity against <i>Fusarium oxysporum</i> . <sup>[20]</sup>
3.	Gandeer	Guna -LS Rasa- Katu Virya- U Vipaka-K	Antiquorin, Traxerol, Triterpinoids	Its latex shows antibacterial, insecticidal & antifungal activity <sup>[21]</sup> . Purgative action <sup>[22]</sup> of its latex helps in expulsion of worms from the intestine.

4.	Kebuka	Guna – L Rasa-Tikta Virya- Sheet Vipaka-K	Costusic acid costunolide eremanthin saponins and sapogenins	Rhizome & roots possess antibacterial <sup>[23]</sup> & antifungal activity whereas the ariel parts shows anthelmintic <sup>[24]</sup> activity.
5.	Vidanga	Guna - LRT Rasa-Katu, Kashaya Virya- U Vipaka- K	Embelin, Embelic acid, Christembine	Its seeds shows marked Anthelmintic activity against ascaris, taenia & hookworms. <sup>[25]</sup> Embelin showed bactericidal activity against Gram +ve, bacteriostatic against Gram –ve organisms <sup>[26]</sup> and antifungal <sup>[27]</sup> activity against candida.
6.	Nirgundi	Guna - Laghu Rasa-Katu, Kashaya Virya- U Vipaka- K	Negundoside, nishindaside, agnuside, aucubin, camphene	Root, bark & leaves showed potential antibacterial <sup>[28]</sup> activities against Gram positive bacteria in comparison to Gram negative bacteria. Leaves are anthelmintic <sup>[29]</sup> , vermifuge whereas stem bark is insecticidal <sup>[30,31]</sup> in properties. Seed oil has mosquito repellent activity <sup>[32]</sup> .
7.	Kinihi	Guna –LRT, sara Rasa- Katu, Tikta Virya- U Vipaka- K	Ecdysone, saponins, oleanolic acid, achyranthine	Whole plant & root is used as a laxative, anthelmintic, anti viral, anti plasmodic <sup>[33]</sup> , antibacterial & antifungal <sup>[34]</sup> drug.
8.	Swadanshtra	Guna -GS Rasa- Madhura Virya- Sheet Vipaka- Madhura	Saponin, potassium nitrate, glycosides, sapogenins,	Saponin extracted from its roots showed inhibiting effect on Gram-positive and Gram-negative bacteria <sup>[35]</sup> . Antibacterial anthelmintic, styptic and antifungal activity of aqueous extracts from fruits, leaves and roots is also well reported <sup>[36]</sup> .
9.	Vrishparnika	Guna -LRT Rasa- Kashaya, Katu, Tikta Virya-U Vipaka- K	Ferulic & sinapic acid, caffeic Scopoletin	Various leaf extract of Ipomea exhibit antimicrobial activity against gram +ve & gram – ve bacteria <sup>[37]</sup> . Its Juice & root acts as purgative.
10.	Akhuparnika	Guna –LRT Rasa- Kashaya, Katu, Tikta Virya-U Vipaka- K	Tannins, Flavonoids, amino acids, terpinoids, starch	Ethanollic & aqueous extracts of its whole plant showed anthelmintic activity against <i>Ecinia foetida</i> & <i>Pheretima posthuma</i> <sup>[38]</sup> . Its leaf extracts exhibits antibacterial activity <sup>[39]</sup> .

L= Laghu, R= Ruksha, T= Tikshana, S= Snigdha, K= Katu vipaka, U = Ushana virya

## DISCUSSION

The identity of all the members of Krimighna mahakashaya is well established according to Ayurveda as well as botanically except Vrishparnika and Akhuparnika. Acharya Chakrapani commented Akhuparni as Mushikaparni and Vrishparni as a variety of Akhuparni. As per the updated knowledge Akhuparni is considered to be equivalent to *Merremia emarginata* or *Ipomea reniformis* and Vrishparni is a variety of *Ipomea reniformis*. The treatment principle

of Krimi is Apakarshana (Expulsion of harmful substances through shodhan chikitsa), Prakriti vighata (counteracting/ modalities) and nidanaparivarjan. The drug having katu, tikta, kashaya, kshara and ushna properties and the opposite qualities of kapha and purish are used for prakritivighata. All the dravyas belongs to krimighna mahakasaya have laghu, ruksha, tikshana guna, katu, tikta, kasaya rasa, Katu vipaka and ushna virya (which is kapha shamaka) except swadantra. Gokshur possess guru, snigdha guna, madhura rasa and vipaka, and sheeta virya (as shown in table- 5) which doesn't support the principle of prakriti vighata. But it may produce the krimighna action through Apakarshan as all its quality facilitates the removal of krimi through virechana or it may act due to its prabhava and specific properties. Many evidence from clinical literature as well as from current researches also supported the krimighna action of these ten drugs as all these drugs have antibacterial, anthelmintic, antiprotozoal activity. Among these ten drugs Vidanga (*Embelia ribes* L.) is considered as the best Krimighna dravya.

## CONCLUSION

Krimighna mahakashaya is one of the important group of drugs among the 50 mahakasaya. From the classical literature and recent clinical trials it is observed that the drugs of this mahakashaya has the potential to treat the krimi effectively. It should be used singly or in combined form in different pharmaceutical forms as per the need. It is further suggested to evaluate the effect of these drugs on specific organisms experimentally & clinically.

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