



“REVIEW STUDY ON PURISHAJA KRIMI IN CHILDREN “

Dr. Pradnya Prakash Sudarshani¹, Dr. Yogesh Surse²

1. Pg Scholar, Dept Of Kaumarbhritya

Saptashrungi Ayurved Mahavidyalaya Nashik, Maharashtra

2. Guide, Professor, Hod Kaumarbhritya Dept,

Saptashrungi Ayurved Mahavidyalaya Nashik, Maharashtra

ABSTRACT-

The living being which born from the vapours of faecal matter in the intestinal tract or in similar environment if created else were. The Nidanarthkara Roga is the unique conceptual contribution of Ayurveda. The description of Krimi done in Vimansthana is mainly deals with the description of Sthula Krimi wherein the regimen pertaining to extract them out the body is detailed. The term *Krimi* is used to denote tiny living beings which reside in the human body in Vedas except Sama Veda. Concept of the *Krimi* and their relation in the development of disease is described in all available Ayurvedic Literature. *Acharyas* also describe *Krimi* as an etiological factor in various diseases; eg. *Krimija Hridroga*, *Krimija Shiroroga* etc. But the vast details of pathology of each and every *Krimi* is not found in our classics, may be because *Acharya* where devoid of sophisticated devices as available at present and their views were different in comparison with conventional medicine. But the classification, morphology etc. are described very well. The legend, *Acharya* Charaka classified *Krimi* into 20 types which come under the two broad groups i.e. *Bahya* and *Abhyantara*. He also postulated the line of treatment of *Krimiroga* i.e, *Apakarshana* (extraction of *krimi*), *Prakriti Vighata* (destruction of the favorable environment for survival of *krimi*) and *Nidana Parivarjana* (avoidance of etiological factors responsible for growth of *krimi*)⁵ mainly by through diet, medicines, hygiene and lifestyle management. This set of protocol for the management of *Krimiroga*, where the approach is aimed at the prevention and eradication of the intestinal worm infestations is very logical and also easy to follow. Many such guidelines are available in *Susruta Samhita*, *Kashyapa Samhita*, *Ashtanga Hridaya*, *Bhava prakasha* etc. The description of Sukshma Krimi is made specific to the pathology they cause and are explained with context of those diseases. This is done because the presence of Sukshma Krimi denotes the dushti of Kshetra where in there is no need for a separate treatment regimen, treatment of that particular pathology caused by them

is in itself is its cure. Acharya Charak mentions a common list of aetiology of Udara Krimi (Shleshmaja and Purishaja).

KEYWORDS- *Ayurveda, Krimi, Purishaja Krimi, Nidan, Chikista*

INTRODUCTION-As worm infestation appears as one of the major economic burden to the country, Nepal government has initiated National Deworming Program in recent years to control it. However, according to WHO, 1100 million people were defecating in the open resulting in high levels of environmental contamination and exposure to the risk of worm infestations in year 2008. Therefore, this study reviewed literatures related to krimi roga in children and role of Ayurveda in its management.

“ Krimi Kitetyadi Krumaya Kostha Purishadi Baspasambhava” (Dalhan, Sushruta Samhita - Su.1/30).

The description of Nidanarthkara Roga is mentioned in Charak Nidana. The clinical condition where in already pre-existing disease is potentiated by other disease specific etiological factors; giving rise to a clinical complex¹. The description of Krimi is done in Charak Vimansthana which in itself is suggestive of its importance. The Nidana and Chikitsa of Krimi is different from the diseases mentioned in Chikistastana; hence the description is done in Vishita sthana Vimansthana.

i) Ashtang Hridaya (4TH CENT.A.D.) and Asthang Samgraha:

Explained Nidaan, classification, lakshana of Krimi in the Nidansthan. The treatment is given in the Chikitsa sthan.

ii) Sharangdhar ^[2] -

Described Krimiroga in Prathama Khanda, seventh chapter. Number of Krimi stated is 20, etiology, classification, symptomatology is also mentioned. Here the snayuka krimi and vana krimi are additions.

iii) Bhavaprakasha Samhita ^[3]:

In this classification, etiology, symptomatology is explained in Madhyama Khanda, Adhyaya7.

iv) Madhavanidana (7th cent.A.D.)^[3]:

The 7th chapter “Krimi Nidan” mentions the external and internal types of Krimis; internal Krimi further classified into three such as Raktaja, Purishaja and Shleshmaja. Total 20 Krimis described according to their origin and habitat.

The sequence further deals with ‘Pandu Nidaan’, giving a clue of relation between these 2 conditions.

v) Kalyankaraka ^[4]:

Krimiroga and its treatment with Pathya-Apathya is described in 17th Pariccheda named Krimi Rogadhikara. vi) Ras-Ratna Samucchaya:

The 20th Chapter, “Krimi Chikitsa” describes Krimi. Ras Aushadhis were described with Kastha Aushadhi in treatment.

Classification of krimi in general:

Classifications under various headings are made by Acharyas. Sushruta has categorised as Drishta and Adrishta variety as in Vedic literature.

Charak states as Sahaja and Vaikarika. Has a description in details of Vaikarika variety. Charak and Sushrut mention as twenty while Harita stated as thirteen. Sharangdhara mentioned as twenty-two. While rest of workers, like Vagbhata, Madhavkara and Bhavmishra followed Charak.

Morphological Classification of Udara Krimi according to Charak ^[5]

This is the most scientific and ignored area by previous workers. The categorisation can be made basis for correlation. The names further given in the Samhita are based upon this grouping but specification in respect to colour, size, and shape denotes who is not clearly understood.

Mahaguda, Darbhakusuma, Mahapushpa, Praloon, Chipita, Pipillika, Makeruka, Chipya, Gandupada, Dwimukha, Pruthumunda, Dhanyankuranibha, Suchimukha, Kinchuk sannibha, Anawah and Sukshma.

- **Names according to movements** -Ajawa and Vijawa
- Names according to Pathological status -Antrada, Udarada(Udarveshta), Hridayada, Darun, Sashula and Leliha

Names having no etymological meaning -Churu, Saugandha, Kakeruka, Sausurada and Kipyra

This nomenclature raises difference of opinions and controversies as no samhita-kars has neither mentioned basis of such naming system nor further described symptomatology and treatment accordingly.

- **Table no-1 Classification on the basis of Colour: *Purishaja Krimi***

No.	Colour	Charaka	Sushruta	Vagbhata
1.	<i>Sweta</i>	+	+	+
2.	<i>Shyava</i>	+	-	+
3.	<i>Neela</i>	+	-	-
4.	<i>Harita</i>	+	-	-

These details show that colours depend upon the habitat in which *Krimi* lives.

• **Table no -2 -Classification On The Basis Of Morphology**

No.	Morphology	Charaka	Sushruta	Vagbhata
1.	<i>Sukshma</i>	+	+	-
2.	<i>Vritta</i>	+	-	+
3.	<i>Dirgha</i>	+	-	-
4.	<i>Urnamasu samkasa</i>	+	-	-
5.	<i>Sthula</i>	+	-	+
6.	<i>Prithu</i>	-	At the tail site	+
7.	<i>Tanu</i>	-	-	+

• **Table no 3-Classification According To Habitat**

○ *Purishaja Krimi*

Sr.no.	Habitat	Charaka	Sushruta	Vagbhata	Harita
1.	<i>Pakawasaya</i>	+	+	+	-
2.	<i>Malashya</i>	-	-	-	+

Nidaan:

The general etiological are mentioned by Sushruta, Madhavkara, Bhavmishra, Harita and Vangasen followed by specific for Shleshmaja, Purishaja. But surprisingly Charak and Vagbhata have not mentioned such a differentiation, wherein both mentions only specific causative agents. To add on Charak mentions a common list of etiology of Udara Krimi (Shleshmaja and Purishaja).

Table no -4-Specific Classical Aetiological Factors of Udar Krimi

Shleshmaja	CH	SU	VA	MA
Kshira, Guda	+		+	+
Tila, Taila	+	+	-	+
Mamsa, Masha	-	+	+	+

Matsya, Anupamamsa, Pishtanna, Parmanna, Kusumbha	+	-	-	-
Snehajeerna, Putiklinna, Sankirna, Viruddha, Asatmya bhojan	+	-	-	-
Dadhi	-	+	+	+
Shukta	-	-	+	-
Purishaja				
Same as Shleshmaja	+	-	-	-
Masha, Pishtanna	-	+	-	+
Vidala	-	+	-	-
Parnashaka	-	+	+	+
Dhanya, Ulaka	-	-	+	-
Guda, Amla, Lavana	-	-	-	+

Charaka mentioned origin of Purishaja Krimi from that of aetiology of Shleshmaja. Sushruta added Vidala, Parnashaka which is also stated by Vagbhata and Bhavmishra Vangasen opined as Shaka.

Samprapti -

The pathogenesis of Krimi roga is as such not clearly described in classics. Vijatiya bhava like Krimi is tried to explain on basis of Dosha, Dushya, Agni, Aam and Srotas.

As described in Nidana prakaran, etiological factors if analysed are mainly causing

- Mandagni
- Kapha Prakopa

Also, the classification is made as Shleshmaja indicating produced by Kapha while Purishaja indicating disturbed metabolism leading to production of more Mala Bhaga especially Purisha helping its growth.

These are Vyanjak Hetu which creates a suitable environment for growth.

Charak and Harita further on the basis of site of location made divisions like Bahya and Abhyantar.

Chakrapanidutta while commenting on Charak Samhita also expressed his views on numerology stating that as twenty is a pleural noun thus number of krimi is more than twenty.⁵

I. According to the site of location classified into two as:

- Bahya (external)
- Abhyantar (internal)

This pattern is particularly followed by Charak and Harita, whereas Sushruta does not seem to mention the same, but as only stated internal Krimi.

Harita describes 7 varieties of external Krimi as- Sweta, Krishna, Charmayukika, Binduki, Vartula, Matkuna and Yastika.

II. According to the Yoni Charak, Vagbhat, Madhava, Bhavamishra Acharyas categorise Abhyantar Krimi as⁸:

- Shleshmaja,
- Purishaja,
- Raktaja.

Harita has followed a unique type of division wherein only number of internal krimi is mentioned and no further classification is made.

III. Classification found in Vedic literature can also be included as

- Drishta(visible)
- Adrishta(invisible)

This classification is also seen in Samhita wherein Sushruta mentions 13 varieties of Drishta Krimi under headings of Shleshmaja (6) and Purishaja (7).

Present study deals with Udar Krimis. Hence nomenclature of the same by various acharyas is mentioned in details.

The word Udara Krimi is nowhere used in the texts but previous workers like Bajoria K.R.(1980) working on the subject assigned this after considering symptamatology which showed mixed features of Shleshmaja and Purishaja variety with respect to modern recognised parasites.

Table no 5- Contraindications in Krimi Roga¹³

Sushruta	Amla, Madhura rasa, Shitodaka, Mamsa, Milk, Ghrita, Leafy Vegetables, Dadhi.
Vagbhata and Bhavmishra	Amla, Madhura rasa, Mamsa, Milk, Ghrita, Leafy Vegetables, Dadhi
Yogratnakara	Amla, Madhura rasa, Mamsa, Milk, Ghrita, Leafy Vegetables, Dadhi, Sauvira and Kshara.
Bhaishjya Ratnavali	Amla, Madhura rasa, Mamsa, Milk, Ghrita, Leafy Vegetables, Dadhi, Vaman veg Dharan, Diwaswpna, Ajeerna, Pishtamaya padarth, Urada, Liquid diet articles.

All Acharyas have stated to avoid Amla, Madhura rasa, Mamsa, Milk, Ghrita, Leafy Vegetables and Dadhi, thus can be said as general contraindications.

Treatment of Krimi

Acharya Charak has given a 3-fold line of treatment in Vimansthan 7 as:

- Apakarshan,
- Prakruti Vighata
- Nidaan Parivarjan.

Apakarshan- means expulsion. Word is made up of 'Krusha-Vilekhane Dhatu which imply to stretch out or to purge out, mainly Dosha, Mala and Krimi Sanghat. The regimen includes two modes- Bahya and Abhyantar. Bahya is Apakarshan of external krimi which are driven off manually or with the help of surgical appliances.

Children diet in Krimi Roga -

One must ensure that whatever food is consumed, it must be washed and cooked thoroughly. The same applies for drinks. Some foods to avoid during worm infections are:-

- ♣ Red meats including mutton, beef and pork
- ♣ Milk and milk products (especially milk that is not pasteurized properly)
- ♣ Ghee
- ♣ Water that is not boiled
- ♣ Vegetables that are not washed and cooked well

Some foods that are beneficial during worm infestations are

- ♣ Rice that has been aged and wet
- ♣ Buttermilk
- ♣ Vegetables like brinjals and bitter gourd
- ♣ Garlic, coriander and asafoetida

Drug used in krimi roga-

Ajwain: Ajwain is botanically obtained from

Hyoscyamus niger (Family; Solanaceae) which is a poisonous plant. Its seeds have a beneficial effect in curing intestinal worms. Ajwain seeds taken with jaggery and dissolved in cold water early in the morning help to expel worms out during defecation.

Bael: Bael is obtained from *Aegle marmelos* (Family; Rutaceae) and exhibited anthelmintic activities. It is also useful in all inflammatory conditions of the bowels.

Karpooora: Karpooora has been extracted from leaves of *Cinnamomum camphora* (Family Lauraceae). It is used as a general treatment for intestinal worms.

Palasha: It is obtained from *Butea monosperma* (Family; Leguminaceae) seeds. The seeds of the palasha are taken with buttermilk twice daily for removal of roundworms.

Tulsi: It collects from *Ocimum basilica* (Family; Lamiaceae, a botanically sources. Its seeds are highly cooling effects. It is also taken as the sweet basil in the form of a drink. This is a highly beneficial remedy in curing all kinds of intestinal worms, especially tapeworms.

Vidanga: It is obtained from *Embelia ribes* (Family; Rubiaceae) which has anti-flatulent and laxative properties. Its seeds must be powdered and taken on an empty stomach. This is beneficial in the expulsion of tapeworms.

Ayurvedic preparations for Krimi in Children -

Asava/Arishta : Khadiradi Arishta, Vidanga Arishta, Deva Darya Arishta, Vidangaasav, Kutjarista.

Bhasma/Kashaya : Loha Bhasma, Vanga Bhasma

Choorna : Vidanagadi Choorna

Ghrita : Bimbi Ghritam, Vidanagadi Ghritam

Rasa : Krimikaalanala Rasa, Krimi Mudgarasa, Krimikuthara Rasa

Taila : Bhallatak Taila

PATHYA AND APATHYA IN KRIMI ROGA-¹⁰⁻¹²

Bhaishya Ratnavali has recommended use of some herbs like-Patola, Vetagra, Rasona, Chitraka, Kantakari, Vidanga, Haritaki, Tada, Bhallataka, Hingu, Yavakshara, Ajmoda, Khadira, Kutaja, Jambhira, Ajmoda, Devdaru, Agaru.

Harita mentioned Shatpushpa, Jivanti and Shunthi while Sushruta has opined Tambula.

- Samshodhana Karma, above mentioned herbs and some grains with meat and animal products perhaps work as Agni Pradipaka and create Prakruti Vighata.
- Some fermented articles are also accepted as Pathya may be perhaps to effect on parasites from intestine so that they dislodge faster.

PREVENTION OF KRIMI ROGA –

Following clean hygiene and sanitation habits is the best method of preventing worm's infestation. In this regards, general guidelines have been postulated;

- One should always ensure properly filtered and boiled drinking water for their family.
- The food must be properly cooked, especially if it is red meat like beef and pork. Vegetables must be washed thoroughly before putting in the cooking pot.
- Fruits must be washed thoroughly, and ideally peeled, before consumption. After outdoor activities like gardening, wash your hands and legs thoroughly with a disinfectant soap. Hands must be washed after each visit to the toilet.
- All laundry must be washed on a daily basis. Underwear must be washed and dried separately from other clothes. As an extreme measure, each person's clothes must be washed separately.
- Footwear must be worn whenever stepping out of the house. If one person in the house is affected, then treatment must be given to all members living in the house. This is to prevent further transmission.

DISCUSSION-

The present study is basically related to Abhyantar Krimi is hence concentrating on the aspect; they are mentioned to be of three varieties: Kaphaja, Purishaja and Raktaja. Among them Kaphaja and Purishaja can be considered as Udara Krimi as the habitat mentioned is Amashaya and Pakwashaya respectively.

This classification as Kaphaja and Purishaja does not seem maintained further. The aetiologies mentioned are common to both varieties and also the treatment portion shows no specificity pertaining to classification. Thus, the motto of classification is limited upto giving an idea of the Prakruti (causative factor) or Yoni (origin) of Krimi.

CONCLUSION-

A list of Pathyas for the Krimi Roga is also available in the classics mentioned (wherein categorisation is done under suitable headings. By analysing it gives a impression that they might be helping in Prakruti Vighata and some also perform action of Agni enhancer. The preventive measures in modern parasitology are concerned with

sanitation and contamination of food etc as they stress upon source of infection whereas Ayurveda gives more importance to soil (body) rather than seed (Krimi). The combination of both is the key to freedom from invading Helminths. Ayurveda has also emphasized on the sanitation aspect by stating to wash paad (feet), Malayana (all external opening including anus) frequently.¹⁰

The list of Apathya i.e. things to be avoided are also mentioned (Table no 4), but how these produces parasites in the intestine is not clarified. Only possible explanation can be production of Aam which in turn produces good environment for parasites to thrive on. The description of Shlesmaja and Purishaja Krimi in classics fits very well in the available literature regarding modern recognised intestinal helminths. The mixed symptomatology of Shlehmaja and Purishaja is seen in accordance to helminths. Thus they should collectively be termed as Udara Krimi.

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