

**KRIMIROGA IN CHILDREN – A LITERARY REVIEW****Avinash Karambhe\*<sup>1</sup> and Sonam Kanzode<sup>2</sup>**

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**ABSTRACT**

Krimi exist its importance in Medical science from ages. Starting from Rig Veda to Samhita Krimi is accepted as a causative factor of diseases. Though there is mention of non-pathological Krimi in the texts, but elaboration not done. Whereas, there is wide narration of pathological Krimi found in different Samhita. Description of etiologies, habitat, nomenclature, morphology, and clinical conditions produced due to Krimi is done by different Acharyas. The clinical conditions produced due to Krimi in host may be broadly categorized under GIT ailments, skin ailments and features of Anemia. Regarding management of Krimi, there is sufficient explanation of treatment principles in Samhita. Various research works have been done

concerning treatment aspects of Krimi. In this article an attempt is made to throw the light on Ayurveda and Modern concept on Krimi-roga.

**KEYWORDS:** Ayurveda, Krimi-roga, Samhita.

**INTRODUCTION****Nirukti of Krimi**

“Kramati Kramu Pada Vikshepe.” (*Halayudh kosha*, page –242). The term “Krimi” is derived from the word Kramu, which means to step, to roam, or to walk. It has come out from “Kramu Padvikshepe”, means which move with the legs are termed as Krimis. While observing the description of Krimi given in Ayurvedic literature and comparing with that of in Halayudh Kosha regarding the many of Krimis which do not possess legs, the description

given in Halayudh-kosha seems to be incomplete. Among many of legless Krimi Raktaja Krimi is found round and footless.

**“Kravye Medyati Kramte Wa Syat Saran Karmanah Kramte Wa.”** (Yaskacharya Niruktaam 6/3/13) Means those organisms which thrive on raw flesh and perform some movements can be designated as Krimi e.g. *Wuchereria bancroftii*.

**Kramau Kshudra-jantou, Rogabhede Krimi Shabde.** (Amarkosha) At the same time Amarkosha says Krimi word is derived from “Kram + en” and this word stands for Kshudra-jantu and in differentiation of Rogas. Krimi, Kram – en (**Aat Ichcha**) Kramau Kshudra-jantau, Rogabhede Krimi Shabde.

**“Lumpayanti Kida Krimayah Paritah”** (Vachaspathyam 3rd part) It means those which are capable to break or injure the surroundings can be said as Krimi or Kidah.

### Classification of Krimi with Naming

**Charaka Sharangdhara Vagbhatta Sushruta**<sup>[1],[2],[3],[4]</sup>

#### A. Bahya

1. Yuka- Krishna Yuka
2. Pipilika- Sweta Leeksha
3. Charmyukika
4. Binduki
5. Vartuna
6. Matkuna

#### B. Abhyantara

##### B.I- Shleshmaja Krimi

1. Antrada - Antrada Mahapushpa
2. Hridayada - Hridayada Praloona
3. Udarad - Udaravestha Chipita
4. Churu - Churu Pipilika
5. Mahaguda - Mahakuha Daruna
6. Saugandhika - Saugandha -
7. Darbhakushma - Darbakusuma Darbhapushpa

**B.II- Purishaja Krimi**

1. Kakeruka Prithumunda Kakeruka Ajwa
2. Makeruka Dhanyankuranibha Makeruka Vijya
3. Sausurada Suchimukha Sausurada Kipyra
4. Sasulka - Saluna Chipya
5. Leliha Kinchuksannibha Leliha Gandupad
6. - Anawah - Churu
7. - Sukshmah - Dwimukha

**B.III- Raktaja Krimi**

1. Keshad Keshada Keshada
2. Lomada Lomavidwanca Romada
3. Lomadwipa - Lomadwipa Nakhad
4. Saurasa - Saurasa Dantada
5. Udumbara - Udumbara Kikkisha
6. Jantumatara - Matraha Kushthaja
7. Parisarpaja

Ayurveda view- The below said factors are responsible for Worm infestation according to Ayurveda<sup>[5]</sup> –

अजीर्णभोजी मधुराम्लसेवी द्रवप्रियः पिष्टगुडोपभोक्ता।

व्यायामवर्जी च दिवाशयी च विरुद्धभोक्ता लभते क्रेमीश्च॥ {यो.र}

**Ajeernabhoji** – Taking foods which cause indigestion (gut-foe's) or Taking food in condition of indigestion. This allows the indigested food or stale food to remain for more time in the gut (and cells) which provides an ideal environment for worm / parasitic manifestation and infestation.

**Madhurasevi:** Excess consumption of sweets or foods rich in sweet taste, Addicted to sweet

**Amlasevi:** Excess consumption of sour or foods rich in sour taste, Addicted to sour.

**Dravapriyaha:** Excessive consumption of liquids or liquid diet (dilutes metabolic fire, causes indigestion and prepares a backdrop for worm infestation)

**Pishta Upabhokta:** Excessive consumption of foods prepared using flour

**Guda Upabhokta:** Excessive consumption of Jaggery or derivatives of sugarcane

**Vyayamavarji:** Keeping away from exercise

**Divaashayi:** Habituated to Day-sleeping

**Viruddhabhokta:** Taking of unsuitable and incompatible foods

Symptoms of Krimi Roga (Intestinal worms)<sup>[6]</sup>

ज्वरो विवर्णता शूलं हृद्रोगसदनं भ्रमः।

भक्तद्वेषोऽतिसारश्च संजातक्रिमिलक्षणम् ॥

(सु.उ. 54-19)

- Fever
- Palloriness
- Abdominal Pain
- Giddiness
- Anorexia
- Diarrhoea
- Weight loss
- Grunting of teeth during sleep
- Anal itching




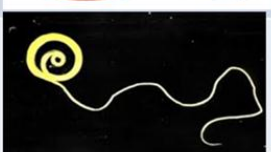
**Modern view**-There are a vast number of worms which reside within the human body. These worms obtain their nutrition from the digestive tract especially in the intestine which is its main site. Hence worms are parasites and human is host. Since worms live inside the body of their host, they are also biologically termed as endoparasites. Intestinal worm infestation is one of the major childhood health problem in developing countries like Nepal, Bangladesh, Shrilanka & India. All Ayurveda classical texts describe Krimi roga as a major disease where its major etiological factors are described as sweet products, contaminated foods and drinks, etc. Worm infestations are present in people of all ages but children are much more prone to it as they are at the stage of beginners to learn how to cope with these parasitic enemies.<sup>[7]</sup> Doctor visit are because of common bowel complaints in child suffering from worm infestation. However, with some elementary information and knowledge, a person can quite effectively face the problems of worm infestations. Ayurveda has several effective remedies for solving all kinds of worms.

Prevalence in some areas appears very high while less elsewhere in the country. Report shows that almost 35% people, mainly children, in India take medicine against worm<sup>[8]</sup> infestations. Developing countries in Southeast Asian region spent 3.76% of total annual

budget for health in year 2010. 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. According to W.H.O., 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. So study on such matters appears very much necessary even today.<sup>[9]</sup>

**Table no. 1: Mode of Transmission Of Worms.**<sup>[10,11]</sup>

## Modes of Transmission

Worms	Image	Mode of transmission
Flatworms		Spread through consumption of raw and undercooked meats
Pinworms		Spread from person to person directly
Roundworm		Spread through consumption of contaminated solid and liquid foods
Whipworms		Spread through consumption of contaminated solid and liquid foods

Child who are at Risk of Intestinal Worms (Krimi Roga)-The following is a list of Child who are the most susceptible to worm infections.<sup>[12]</sup>

Children are at the highest risk of Krimi Roga. In infants, worms can pass in through improperly boiled milk; and in children the different foods that they eat can cause worm infections.

Child who live in very close contact with the soil are also vulnerable. These include Child who work intimately with the earth, such as farmers and gardeners. Even Child who are in the habit of strolling barefooted in their gardens and lawns can attract pinworms and hookworms through the soles of their feet.

Child who do not take care much of their own personal hygiene are at a very great risk of inviting some worms into their intestines.

### **Complications of Intestinal Worms (Krimi Roga)<sup>[13]</sup>**

#### **Flatworms**

Some Child consider that flatworms are beneficial in small numbers as they help to digest difficult food. But large numbers can be serious causing anemia and asthma. The pork tapeworms can lodge themselves in the brain or eye. When these are killed by the antibodies within the body, they leave behind calcium deposits, causing severe complications.

#### **Pinworms**

Pinworms can cause severe digestive disorders such as diarrheas with bloody stools. The accompanying dehydration could be fatal, especially in children. In women, pinworms can cause vaginal infections causing discharge. Insomnia is very common in Child with pinworms.

#### **Roundworms**

Roundworms are responsible for asthma and anemia in their victims. Child suffer from insomnia and general discomfort during the daytime. Rashes occur in various places on the body. One more complication caused by roundworms is pain in the eye.

#### **Whipworms**

As in all worms, diarrheas are common with whipworm infection. Bloody stools are seen, and there may be a rectal prolapse. Anemia is observed.

#### **Hookworms**

Since hookworms can directly burrow into the skin of the humans, they are the most dangerous. They can cause severe abdominal discomfort. Edema can be caused. Large numbers of hookworms are fatal.

### **Management of Intestinal Worms (Krimi Roga)<sup>[15]</sup>**

Principal of treatment

- Apakarshana
- Prakritivighata
- Nidan parivarjana

It is told that all krimis should be extracted or eliminated first thereafter the factors responsible for the production of the krimi should be counteracted and as the third principle of the treatment the causative factors (nidana both ahara and vihara) should be avoided.

**Table no. 2: List of The Herbs That are Beneficial with Their Actions on The Human Body.**

**The following is a list of the herbs that are beneficial with their actions on the human body:-**

Ayurvedic Name of the Herb	Biological Name of the Herb	Common English Name of the Herb	Topical Action
Ajwain	<i>Hyoscyamus niger</i>	Henbane	Though the henbane is poisonous, its seeds have a beneficial effect in curing intestinal worms. <i>Ajwain</i> seeds taken with jaggery dissolved in cold water early in the morning help in the expulsion of worms during defecation.
Bael	<i>Aegle marmelos</i>	Bael tree	Bael has anthelmintic properties, i.e. it can kill the worms within the body. They are useful in all inflammatory conditions of the bowels.
Karpooora	<i>Cinnamomum camphora</i>	Camphor	Camphor is used as a general treatment for intestinal worms.
Palasha	<i>Butea minor</i> (Blu-Palash)	Flame of the Forest	The seeds of the <i>palasha</i> are taken with buttermilk/jaggery twice daily. This is effective in the removal of roundworms.
Tulasi	<i>Ocimum basilicum</i>	St. Joseph's Wort, Sweet Basil	The highly cooling seeds of the sweet basil are taken in the form of a drink. This is a highly beneficial remedy in curing all kinds of intestinal worms, especially tapeworms.
Vidanga	<i>Embelia ribes</i>	False Black Pepper	<i>Vidanga</i> is an anti-flatulent herb with laxative properties. Its seeds must be powdered and taken on an empty stomach. This is beneficial in the expulsion of tapeworms.

### Prevention of Intestinal Worms (Krimi Roga)

Following clean hygiene habits is the best method of preventing intestinal worms. The following are some guidelines:-

- Always ensure that the water you drink is properly filtered and boiled.
- 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.
- Diet for Child with Intestinal Worms (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<sup>[13]</sup>**

- 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 infections are<sup>[14]</sup>**

- Rice that has been aged and wheat
- Buttermilk
- Vegetables like brinjals and bitter gourd
- Garlic, coriander and asafetida

## CONCLUSION

Worm infestation is the most common health problem of childhood. In spite of having many disinfectants and hygiene measures, the prevalence rate is still high. Ayurveda gives a detailed knowledge about Krimiroga and a wide management has also been described. These Ayurveda principles should be followed to minimize the prevalence and complications of worm infestation in children.

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