



THE CONCEPT OF KRIMI FROM AN AYURVEDIC PERSPECTIVE WITH MODERN CORRELATION - A REVIEW

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ABSTRACT

The existence of *Krimi* is not a new concept. Description of *Krimi* is found since the *Vedic* period. Enough descriptions of *Nidana* (cause), *Bheda* (classification), *Rupa* (signs and symptoms), *Samprapti* (pathogenesis), and *Chikitsa* (treatment) of *Krimi Rogas* are found in the *Samhita* period. According to Modern Science, there are separate branches of helminthology (for worms) and microbiology (for microbes) but in *Ayurveda*, the word *Krimi* is used for all worms and microbes. Worm infestations are considered the most common disease of children living in developing countries. In ancient times the existence of *Krimi* was detected by *Anumana* and also by watching signs and symptoms. Now-a-days through a microscope almost all microbes can be visible. *Ayurveda* prescribes various treatment approaches for the management of *Krimi Roga* such as *Apakarshana*, *Prakriti Vighata*, and *Nidana Parivarjana*.

Keywords: *Krimi*, Worm, Microbes, Helminthes, *Abhyantara Krimi*, *Bahya Krimi*.

INTRODUCTION

The *Veda* has indicated the existence of *Krimi*. *Ayurvedic* classics have also described *Krimi* with his classification. India is a widely prevalent Asian

country with 60% to 80% of estimated cases found in West Bengal, Bihar, Orissa, Punjab, Tamil Nādu (east coast), and Andhra Pradesh^[1]. Proper sanita-

tion, providing pure water, uncontaminated food, and maintenance of personal hygiene are the key solutions to Helminthiasis. As *Ayurveda* believes in *Prakriti* (nature of the individual), if we can change the internal environment of the intestine (*Kostha*) by enhancing the strength of *Agni*, then affinity towards production and multiplication of parasites may be arrested. *Ayurveda* prescribes various treatment approaches for the management of *Krimi Roga* such as *Apakarshana*, *Prakriti Vighata*, and *Nidana Parivarjana*. To arrest and eradicate the genesis as well as multiplication of the *Krimis*, some drugs (*Katu* (pungent), *Tikta* (bitter), *Kashaya* (astringent), *Ushna* (hot) *Dravyas*, etc.) are used in *Ayurveda*.

ETYMOLOGY OF KRIMI

In *Vedic* and *Ayurvedic* literature, the word '*KRIMI*' is used to denote "tiny living beings". The word '*KRIMI*' is derived from the root '*KRAMU*' which means 'to step' or 'to walk' [2]. Those who are capable to break or injure the surroundings are termed *Krimi* or *Keeta* [3].

HISTORY OF KRIMI

1. **VEDIC PERIOD** (5000B.C. - 2500B.C.)-In *Rigveda*, the word *Adrishta* (invisible to the naked eye) denotes the *Krimi*. In *Yajurveda*, *Krimi* is mentioned in context to *Nilangu* which is said to be a species of worm (Tapeworm). A detailed description of *Krimi* is available in *Atharvaveda* including its synonyms, habitat, origin, classification, pathogenicity, and treatment. *Krimighna* medicines such as *Ajashringi*, *Guggulu*, *Naladi*, *Peela*, *Mahavriksha*, etc. are used in *Atharvaveda*. In *Atharvaveda*, some synonyms are used for *Krimi* such as *Rakshasa*, *Pishacha*, *Yatudhana*, *Kimidin*, *Asura*, *Gandharva*, and *Apsara*.

2. **SAMHITA PERIOD** (2500 B.C. - 600 A.D.)-

a. *Charaka Samhita* (2500/1000 B.C.)-*Charaka* has given the classification and nomenclature of *Krimi* in *Sutra Sthana* [4] and *Krimi Roga* is described in detail in *Vimana Sthana* [5], Chapter 7.

b. *Susruta Samhita* [6] (500 B.C.)-*Nidan*, *Rupa*, classification, and treatment of *Krimis* were described in

detail in chapter 54 of *Uttara Tantra*. The description of *Bahya Krimi* is not available in *Susruta Samhita*. Detail description of *Gandupada Krimi* has been mentioned.

c. *Bhela Samhita* [7] (1000 B.C.)-Here no. of *Krimis* (20 types) and their names are mentioned.

d. *Harita Samhita* [8] (1000 B.C.)-In the 3rd *Sthana*, Chapter 5, *Nidan*, classification, *Samprapti*, *Rupa*, *Chikitsa*, etc. were described. The no. of *Krimis* is given as 13.

e) *Kashyapa Samhita* [9] (100-300 A.D.)-Only the treatment portion of the *Krimi Roga* is found in the *Chikitsa Sthana* of *Kashyapa Samhita*. In this chapter administration of bitter and pungent drugs in *Krimi Roga* are well explained.

3. **MEDIEVAL PERIOD (SANGRAHA KALA)** (600A.D.-1300 A.D.)

a. *Astanga Samgraha* and *Astanga Hridaya* [10] (7th Century A.D.) -These explained *Nidan*, classification & *Lakshana* of *Krimi Roga* in *Nidana Sthana* & treatment was given in *Chikitsa Sthana*.

b. *Madhava Nidana* [11] (900 A.D.) -In the 7th chapter, the external and internal types of *Krimis* were classified. 20 types of *Krimis* were described according to their origin and habitat.

c. **MODERN PERIOD** (After 1300 A.D. – till date)

d. *Sharangdhara Samhita* [12] (1300-1400 A.D.)-The number of *Krimi* i.e., 21, aetiology, classification, and symptomatology are mentioned.

e. *Rasaratna Samuchaya* [13] (1300 A.D.)-In the 20th chapter, *Krimi Chikitsa* has been explained. Many *Rasaushadhis* were described with *Kasthaushadhi* for the treatment of *Krimi Roga*.

f. *Bhavaprakasha Samhita* [14] (1600 A.D.)-Classification, aetiology, and symptomatology of *Krimi* are explained very well in *Madhyama Khanda*, 7th *Adhyaya*.

TYPES OF KRIMI

A) According to the basis of pathogenesis: *Krimis*

are divided into *Avaikarika* (Sahaja) & *Vaikarika*. *Sahaja* (non-pathogenic organisms) *Krimis* are present in the gut flora as a symbiotic agent naturally. *Vaikarika* (pathogenic organisms) *Krimis* are of two types-*Bhahya* (external) & *Abhyantara* (internal).

B) ACCORDING TO SITE IN THE BODY: According to the habitat they are classified in two broad headings i.e., *Bhahya* (external) and *Abhyantara* (internal). *Abhyantara Krimis* are of 3 types, such as *Raktaja Krimi*, *Sleshmaja Krimi*, and *Purisaja Krimi*.

Table 01: Shows the Total number of *Krimi* according to their Sites as mentioned in different *Ayurvedic* classics.

| Sl. No. | Ayurvedic Text | Bahya or Malaja Krimi (External) | Abhyantara Krimi (Internal) | | | | Total No. of Krimi |
|---------|----------------------------|----------------------------------|-----------------------------|---------------|-----------------|-----------------------|--------------------|
| | | | Kaphaja Krimi | Raktaja Krimi | Purishaja Krimi | Sleshma-Raktaja Krimi | |
| 1. | <i>Charaka Samhita</i> | 2 | 7 | 6 | 5 | - | 20 |
| 2. | <i>Sushruta Samhita</i> | - | 6 | 7 | 7 | - | 20 |
| 3. | <i>Bhela Samhita</i> | - | - | - | - | - | 20 |
| 4. | <i>Harita Samhita</i> | 7 | 6 | - | - | - | 13 |
| 5. | <i>Astangahridaya</i> | 2 | 7 | 6 | 5 | - | 20 |
| 6. | <i>Sarangdhara Samhita</i> | 2 | 7 | 6 | 5 | 1 | 21 |
| 7. | <i>Madhava Nidana</i> | 2 | 7 | 6 | 5 | - | 20 |
| 8. | <i>Bhava Prakasha</i> | 2 | 7 | 6 | 5 | - | 20 |
| 9. | <i>Yoga Ratnakara</i> | 2 | 7 | 6 | 5 | - | 20 |

Table 02: Nomenclature of *Krimi* in *Samhitas*

| Sl. No | Types of Krimi | <i>Charaka Samhita</i> [15] | <i>Sushruta Samhita</i> [16] | <i>Madhava Nidana</i> [11] |
|--------|------------------------|---|---|--|
| 1. | <i>Bahya Krimi</i> | <i>Yuka, Liksha</i> | - | <i>Yuka, Liksha</i> |
| 2. | <i>Kaphaja Krimi</i> | <i>Antrada, Udarada, Hridyachara, Mahaguda, Churu, Darbhpushpa Sugandhika</i> | <i>Darbhpushpa, Mahapushpa, Pralona, Chipita, Pippalika, Daruna</i> | <i>Antrada, Udarada, Hridyachara, Mahaguda Churu, Darbhpushpa Sugandhika</i> |
| 3. | <i>Raktaja Krimi</i> | <i>Keshada, Lomada, Lomadvipa, Saurasa, Udumbara, Jantumatra</i> | <i>Keshada, Romada, Nakhada, Dantada, Kikkisha, Kushtaja, Parisarpa</i> | <i>Keshada, Lomada, Lomadvipa, Saurasa, Udumbara, Jantumata</i> |
| 4. | <i>Purishaja Krimi</i> | <i>Kakeruka, Makeruka, Leliha, Sashoolaka, Shausurada</i> | <i>Ajawa, Vijawa, Kipyra, Chipya, Gandupada, Churu, Dvimukha</i> | <i>Kakeruka, Makeruka, Leliha, Sashoolaka, Shausurada</i> |

Table 03: Shows the site of *Krimi* as mentioned in *Brihatrayee*

| Sl. No | Ayurvedic Text | Malaja | Raktaja | Kaphaja | Purishaja' |
|--------|-------------------------|-----------------------------|-----------------------------|-----------------|-------------------|
| 1. | <i>Charaka Samhita</i> | <i>Kesha, Shmasru, Loma</i> | <i>Rakta-Vahini Dhamani</i> | <i>Amashaya</i> | <i>Pakwashaya</i> |
| 2. | <i>Sushruta Samhita</i> | - | - | <i>Amashaya</i> | <i>Pakwashaya</i> |
| 3. | <i>Ashtanga Hridaya</i> | <i>Kesh, Loma</i> | <i>Rakta-Vahini Sira</i> | <i>Amashaya</i> | <i>Pakwashaya</i> |

Table 04: Shows an explanation of all *Krimis* according to their name.

| | |
|----------------|------------------------------------|
| <i>Keshada</i> | Causing hair to fall off the body. |
|----------------|------------------------------------|

| | |
|-----------------------|---|
| <i>Lomadwipa</i> | Capable of destruct hair follicles. |
| <i>Saurasa</i> | Produce reddish yellow scars over the skin when they are affected. |
| <i>Audumbar</i> | May produce Udumbara-like nodular growths over the body. |
| <i>Parisarpa</i> | Produce diseases that spread all over the body. |
| <i>Antrada</i> | (<i>Antra</i> =intestine; <i>Ada</i> =to erode/to eat). It is denoted <i>Krimis</i> , which is located in the intestinal canal and eats the intestine or producesulceration in the lower bowels. |
| <i>Udarada</i> | Worms occupy the upper portion of the abdomen and makeulceration in the mucosa of the duodenum and jejunum. |
| <i>Udaravestha</i> | (<i>Udara</i> =abdomen, <i>Veshta</i> =belting of abdomen) The <i>Krimis</i> thatbelt the abdomen (intestine) like cloth are called <i>Udaraveshta</i> and these are so big. |
| <i>Chipita</i> | (<i>Chipita</i> =flat). It is a flat type of <i>Krimi</i> or Plate worm. |
| <i>Hridayada</i> | <i>Krimi</i> which licks /affects the heart. |
| <i>Hridayachara</i> | (<i>Hridaya</i> =Heart, <i>Chara</i> =to move). Worms pass through the heart. |
| <i>Churuvo/ churu</i> | (<i>Chur</i> = to make noise) It has been mentioned for producing sound, especially in the intestinal tract, probably after the formation of gases in theintestine. |
| <i>Darvapuspa</i> | <i>Krimi</i> resembles a flower of <i>Darbha</i> in appearance. |
| <i>Mahapushpa</i> | <i>Krimi</i> is like a big flower in shape. |
| <i>Saugandhika</i> | It produces a peculiar smell itself or causes bad-smelling diarrhoea. |
| <i>Mahaguda</i> | (<i>Maha</i> =large; <i>Guda</i> =anus) It has a large anus & fully developed G.I. tract. |
| <i>Praluna</i> | Same as <i>Antrada</i> (<i>Sushruta</i>). Wormsbreak into pieces as a group of taenias. |
| <i>Pipilika</i> | <i>Krimi</i> is similar to an ant in shape and size. |
| <i>Daruna</i> | <i>Krimi</i> is hard or rough in touch and produces pain and discomfort. |
| <i>Makeruka</i> | (<i>Makara</i> =Crocodile) It has rough ridges like a crocodile on the dorsal surface of the body. |
| <i>Leliha</i> | It has a snake-like movement of the tongue, or it may belong to theshape of a snake. |
| <i>Gandupada</i> | (<i>Gandu</i> =Knot, <i>Pada</i> =foot) Similar to earthworms. |
| <i>Dvimukha</i> | <i>Krimi</i> has a double mouth or mouth-like structure on both ends ofthe body. |
| <i>Ajava</i> | Without segment |
| <i>Vijava</i> | With segment |
| <i>Sashulaka</i> | This <i>Krimi</i> causes pain in the abdomen. |

| | |
|------------------|---|
| <i>Sausurada</i> | This produces fermentation in the lumen, survives on the same, and causes irritation in the large intestine by eroding the lumen. |
| <i>Kakeruka</i> | Motile in nature |

Table 05: Shows the correlation of *Purisaja Krimi* of *Ayurveda* with Intestinal Helminth of Modern Medical Science.

| Ayurvedic Nomenclature | Probable Parasitism | Mode of Infection | Habitat | Morphology | Pathogenicity |
|----------------------------|---|-----------------------------------|-----------------------------|--|--|
| <i>Leliha (Charaka)</i> | Nematodes & Threadworms | Contaminated food | Caecum | Small, White | Pruritus, Perineal pain in the abdomen. |
| | <i>Ascaris lumbricoides</i> | Contaminated food | Small intestine | Same as Gandupada | Same as Gandupada |
| | <i>Trichuris trichura</i> | Contaminated water & food | The large intestine, Caecum | Thin, hair-like, round, brown | Pain in abdomen |
| <i>Gandupada (Susruta)</i> | <i>Ascaris lumbricoides</i> | Contaminated food | Small intestine | Large cylindrical worm with tapering ends, pale pink or flesh coloured | Low grade fever, dry cough, asthmatic wheezing, urticaria, malnutrition |
| <i>Sasulaka</i> | Sarcodina <i>E. histolytica</i> <i>Ankylostoma duodenale</i> <i>Trichuris trichura</i> | Contaminated food | Large intestine | Round blunt pseudopodia | Loose motion Pain in the abdomen, cysts in the liver, lungs, and brain. |
| <i>Sausurada</i> | Ciliata <i>Balantidium coli</i> , <i>Enterobius vermicularis</i> | Infected food | Large intestine | The oval body is covered with cilia. | Do |
| <i>Kakeruka</i> | Trematodes Gastro-discoids <i>hominis</i> | Contaminated uncovered vegetables | Caecum and Ascending colon | Hamidial pink coloured | Diarrhoea |
| <i>Churu</i> | Enterobacteriaceae, <i>Shigella</i> | Contaminated water & food | Large intestine | Short rod shaped | Fever, Diarrhoea |

| | | | | | |
|---|---|--|-----------------|--|--|
| <i>Makeruka</i> | H. nana, Taenia saginata, Taenia solium | | Small intestine | | |
| The descriptions of the nomenclature of <i>Ajava</i> , <i>Vijaba</i> , <i>Kipya</i> , <i>Chipya</i> , and <i>Dwimukha Krimis</i> are not available properly, so no equivalence can be made. | | | | | |

Table 06: Shows the correlation of *Slesmaja Krimi* of *Ayurveda* with Intestinal Helminth of Modern Medical Science.

| Ayurvedic Nomenclature | Probable Parallence | Mode of Infection | Habitat | Morphology | Pathogenicity |
|---|--|---|--|----------------------------------|--|
| <i>Antrada Praluna</i> | Mastigophena Giardia lamblia Intestinalis, E. homones | Contaminated food and water | Duodenum the jejunum and small intestine | Pear-Shaped, flagellated | Diarrhoea, Pain abdomen, Abdominal distension, Vomiting, Anorexia |
| <i>Idaravesta Idarda Chipita</i> | Cestodes | Infected food | Small intestine | Long and flat | Loss of appetite, Headache Vomiting, Visual disturbance Deafness, Diarrhoea Pain abdomen |
| <i>Churu</i> | Enterobacteria Salmonella typhoid | Infected food and water | Small intestine | Small rod-shaped | Fever, Spleen, bonemarrow, and kidney are infected |
| <i>Saugandhika</i> | Spirillanae Vibreo cholerae | Infected food and water | Small intestine | Small, comma-shaped, flagellated | Diarrhoea Vomiting, Muscular cramps |
| <i>Mahaguda</i> | Nematodes | Infected vegetables | Small intestine | Round, brown-pink coloured, long | Fever, cough, jaundice intestinal obstruction etc |
| <i>Darbhapuspa</i> | Trematodes F. buski | Ingestion and stem of edible water plants | Small intestine | Thick fleshy oval, long | Diarrhoea, Abdominal pain, oedema |
| <i>Daruna</i> | W. wastoni | Infected food, Water plants | Small intestine | Reddish/ Yellow, long & round. | Diarrhoea |
| The descriptions of the nomenclature of <i>Pipilika</i> , <i>Mahapuspa Hridayada</i> , and <i>Hidayachara Krimis</i> are not available properly, so no equivalence can be made. | | | | | |

Table 07: Showing the correlation of *Raktaja Krimi* of *Ayurveda* with Intestinal Helminth of Modern Medical Science

| | |
|--|---|
| Ayurvedic Nomenclature | Probable Parallence |
| <i>Kesada</i> (<i>Charaka</i> , <i>Susruta</i> and others) | Fungi-a) Trichophyton, b) Microsporum |
| <i>Nakhada</i> (<i>Susruta</i>) | Fungi- a) Epidermophyton |
| <i>Lomadwipa</i> (<i>Charaka</i> and others) <i>Dantada</i> (<i>Susruta</i>) | Bacteria-a) Staphylococci, b) Streptococci, c) Niesseria gonorrhoea |
| <i>Sourasa</i> (<i>Charaka</i> and others) <i>Kikkisha</i> (<i>Susruta</i>) | Virus-a) Adeno, b) Myxo c) Pox d) Herpes, e) Papova, f) Arvo, g) Picron, h) Rio |
| <i>Audumbara</i> (<i>Charaka</i> & others) <i>Kusthaja</i> (<i>Susruta</i>) and <i>Snayuka</i> (<i>Sarangadhara</i>) | Mycobacterium Leprae Mycobacterium Tuberculosis |
| <i>Matraha</i> (others) and <i>Jantumatraha</i> (<i>Charaka</i>) | Nematodes-a) Strongyloides stercoralis |

SAMANYA NIDANA (GENERAL ETIOLOGY)-According to Madhava Nidana,^{7th} Chapter ^[17], Samanya Nidanas of *Krimi Roga* is as follows-Ajimabhoji, excessive intake of *Madhura*, *Amla*, *Drava Dravya* (dry powder), *Pishtanna*, *Guda*(jaggery), *Vyayama Varyi* (avoid physical exercise) and *Divasayana* (Day sleep).

VISHISHTA NIDANA (SPECIFIC ETIOLOGY)-In Madhava Nidana ^[17], there is a description of *Malaja Krimis*, but aetiology had not been mentioned. Due to defective personal hygiene of the body and clothing etc., these *Krimis* are produced and locate themselves at different sites of the body externally. According to *Madhava Nidana*, the use of *Masa* (black gram), *Pista Dravya* (dry food), *Amla*(sour) and *Lavana* (salty food), *Guda*(jaggery) and *Saka* (leafy vegetables) gives rise to the growth of *Purisaja Krimi*. The use of Mutton, fish, jaggery, Milk, curd, fermented sugarcane juice, etc. gives rise to *Kaphaja Krimi*. Indulgence in *Viruddha Dravya* (incompatible foods), and *Saka* (uncooked leafy vegetables) give rise to *Raktaja Krimis*.

LAKSHANAS (Sign & Symptoms)- Signs & Symptoms of *Bahya Krimis* are *Kandu* (itching), *Kotha* (putrefaction), *Pidika* (eruption), and *Ganda* (nodular swelling) ^[17].

Table 08: *Samanya Lakshanas* (general features) and *Vishesha Lakshanas* (specific features) of *Abhyantara Krimis*.

| <i>Samanya Lakshanas</i> ^[11] | <i>Vishesha Lakshanas</i> ^[18-21] | | |
|--|--|--|--|
| | <i>Sleshmaja Krimi</i> | <i>Purishaja Krimi</i> | <i>Raktaja Krimi</i> |
| <i>Jwara</i> (fever), <i>Vivarnata</i> (Skin discolouration), <i>Shoola</i> (pain), <i>Hridroga</i> (Cardiac troubles), <i>Bhrama</i> (vertigo), <i>Bhaktadwasha</i> (aversion to food), <i>Atisara</i> (diarrhoea), <i>Sadana</i> (lassitude), <i>Chhardi</i> (vomiting), <i>Jathara garjanam</i> , <i>Mandagni</i> (Diminution of Agni), <i>Pipasa</i> (thirst), <i>Pitanetra</i> (yellowish eyes) | <i>Hrillasa</i> (nausea), <i>Avipaka</i> (indigestion), <i>Jwara</i> (fever), <i>Arochaka</i> (anorexia), <i>Murchha</i> (vertigo), <i>Jrimbha</i> (yawning), <i>Kshavathu</i> (sneezing), <i>Anaha</i> (flatulence), <i>Angamarda</i> (body ache), <i>Chhardi</i> (vomiting), <i>Karshya</i> (emaciation), <i>Parusya</i> (dryness), <i>Kasa</i> (coughing), <i>Pinasa</i> (rhinitis), <i>Shoola</i> (pain), <i>Shwayathu</i> (swelling), <i>Hridroga</i> , <i>Pratishyaya</i> (rhinitis), <i>Shiro Roga</i> , <i>Netra-Talu-Shrotra Roga</i> | <i>Purisha Bheda</i> , <i>Karshya</i> (emaciation) <i>Lomaharsa</i> (horripilation), <i>Parushya</i> , <i>Guda-Vinirgamana</i> , <i>Guda Kandu</i> (itching in the anus), <i>Shoola</i> (pain), <i>Agnisada</i> (diminish digestive fire), <i>Pandu</i> (anaemia), <i>Vishtambha</i> , <i>Balakshaya</i> (weakness), <i>Praseka</i> (nausea), <i>Aruchi</i> (anorexia), <i>Hridroga</i> (cardiac troubles) | <i>Raktaja Vyadhi</i> , <i>Kesha Smashru</i> , <i>Nakha</i> , <i>Loma</i> , <i>Pakshma</i> <i>Dhwamsa</i> (loss of body hairs), <i>Harsha</i> , <i>Kandu</i> (itching), <i>Toda</i> (Pricking pain), <i>Twak-Sira-Snayu</i> – <i>Mamsa-Tarunasthi</i> <i>Bhaksanam</i> |

SAMPRAPTI-By excessive intake of *Nidanas* of *Krimi Roga*, the *Dosas* first get vitiated and then affect the *Dushyas* such as *Ahara Rasa*, *Purisa*, *Rakta*, etc. Vitiated *dosas* produce "*Jatharagni Mandya*" and also lead to the production of *Ama*. The *Dosas* and *Dushyas* affect the *Annavaha* and *Purishavaha Srotas* and all these make a suitable environment for the *Krimis* to multiply the *Slesmaja Krimis* located in *Amasaya* and the *Purishaja Krimis* in *Pakwasaya* and the diseases become manifest. The functions of *Agni* are impaired and later this condition goes to the stage of *Grahani Dosa* which may ultimately lead to the development of *Grahani Roga*. The multiplication of *Krimi* needs nutrition, which is taken from the host, resulting in emaciation, dehydration, nausea, anaemia, vomiting, etc.

SAMPRAPTI GHATAKA

Dosha- Tridosha (Kapha pradhana)

Dushya – (Dhatu) Rasa, Rakta, Mamsa, Meda, Asthi, Majja.

Srota- Annavaha, Purishavaha, Raktavaha, Mamsavaha, Swedavaha

Adhisthana - Pakwasaya (Purishaja Krimi); Raktavahi Dhamani (Raktaja Krimi) Amasaya (Kaphaja Krimi)

Kesha, Shmashru, Loma, Pakshma, Vasana (Malaja Krimi)

Agnidusti-Mandagni (Ama formation)

Rogamarga-Abhyantara & Bahya

Vyakti- (a) Krimi Lakshana (sign & symptoms)

(b) Krimi Darshana (in microscopic examination ova or cyst present)

Svabhava - Chirakari (Chronic) & Asukari (Acute)

CHIKITSA SIDDHANTA ^[22] (LINE OF TREATMENT)-*Acharya Charaka* described *Samanya Chikitsa Shidhanta* of *Krimi Roga* in a three-fold method. These are-

(1) *Apakarsana- Apakarshana* means removal or expulsion of the *Krimis* from their site and location. The *Krimis* from the intestine can be expelled by the administration of *Sirovirechana* (errhines), *Vamana* (vomiting), *Virechana* (purgation), and *Asthapana* (corrective enema). According to *Charaka*, *Krimis* may be extracted by hand with or without the help of instruments.

(2) *Prakriti Vighata*-It means the removal of the causative factors which are responsible for the production and development of the *Krimis*. *Katu* (pungent), *Tikta* (bitter), *Kashaya* (astringent), *Ushna* (hot) *Dravyas*, etc. may change the intestinal environment which ultimately may hamper the growth of the *krimis*.

(3) *Nidana Parivarjana*-Avoidance of the *Nidanas* or the etiological factors of the *Krimi Rogas* are included in this measure.

SADHYASADHYATVA(PROGNOSIS)-*Alpa Kala* (less duration of illness), *Alpa Roga Bala* (less severity of the disease), and *Adhika Rogi Bala* (more strength of the patient), such a condition is *Sukha Sadhya* (easy to cure). Whereas, if the *Rogi Bala* is less, *Roga Bala* is more and *Krimi* persists for a long time, it may lead to *Krichhrasadhya* or *Asadhya* (incurable) condition.

DISCUSSION

According to Ayurveda, *Krimis* are of two types – *Drishya* and *Adrishya*. *Adrishya Krimi* was recognized with the help of *Anumana Pramana* through the analysis of signs and symptoms. Now a day, it becomes easy to identify with the help of a microscope. On the basis of pathogenesis, *Krimis* are divided into *Avaikarika* and *Vaikarika*. According to habitat, they are classified in two broad headings i.e., *Bahya* (external) and *Abhyantara* (internal). Ayurveda described three types of *Abhyantara Krimis* viz. *Raktaja Krimi*, *Kaphaja Krimi* and *Purishaja Krimi*. Several etiological factors are responsible for the genesis of *Krimis* such as *Adhyashana* (eating before digestion of the previous meal), *Ajirna Bhojana* (eating in indigestion), *Asatmya Bhojana* (unwholesome food), *Viruddha Bhojana*, *Malina Bhojana* (contaminated food), *Ati Guru* (excessive heavy), *Ati Snigdha* (excessive unctuous), *Ati Drava Dravya*, *Avyayama* (lack of exercise), *Divaswapna* (day steep), etc. By these *Nidanas*, the *Dosas* first get vitiated and then affect the *Dushyas* such as *Ahara Rasa*, *Purisa*, *Rakta*, etc. and produce "*Jatharagni Mandya*" which leads to the production of *Ama*. The *Ama* creates a suitable environment for the existence, genesis, and

multiplication of Krimi in the Purusha Vaha Srota. These Krimis start to move into a different part of Anna Vaha Srotas and Purisha Vaha Srotas and produce several hazards regarding digestion, metabolism, and assimilation of the ingested food. The specific signs and symptoms of Krimi Roga such as Purisha Bheda (diarrhoea), Gudamukha Todakandu (perineal itching), Loma Harsha (horripilation), Kashaya (emaciation), etc. are mentioned in Ayurvedic literature and are more or less similar to the helminthiasis of modern medicine. So, examination of the stool for routine examination; ova, parasite and cyst, occult blood test. etc. are very much useful to confirm the diagnosis. Proper sanitation, providing pure water, uncontaminated food, and maintenance of personal hygiene are the key solutions to Helminthiasis. As Ayurveda believes in Prakriti (nature of the individual), if we can change the internal environment of the intestine (Kostha) by enhancing the strength of Agni, then affinity towards production and multiplication of parasites may be arrested.

CONCLUSION

Krimi is a great health hazard to personal health as well as social health. The *Veda* has indicated the existence of *Krimi*. *Charaka Samhita* described *Krimi* more elaborately than other *Samhitas*. *Sushruta* described *Ahara Sambandi Nidan* and *Vihar Sambandi Nidana* for *Krimi Roga*. *Acharyas* have described *Krimi* in various *Samhitas* in detail they also believe that *Krimi* can be an etiological factor for various diseases like *Krimi Hridroga* and *Krimi Shiroroga* etc. For the management of *Krimi roga*, *Apakarsana*, *Prakriti Vighata*, and *Nidana Parivarjina* are essential.

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