

**AN OUTLOOK OF KRIMI ROGA IN CHILDREN IN THE CONTEXT OF AYURVEDA
WITH CORRELATION IN MODERN SCIENCE****Dr. Amit Singh^{*1}, Dr. Chandan Singh² and Dr. S. N. Shahi³**¹Assistant Professor, Dept. of Kaumarbhritya, Chandrashekhar Singh Ayurved Sanshathan Kaushambi, U.P. India.²Associate professor, Dept. of Samhita Sidhant, G.S. Ayurveda Medical College & Hospital Hapur, U.P. India.³Principle & Professor, Dept. of Kriya Sharir, Aroma Ayurvedic medical college & Hospital Roorkee Uttarakhand. India.***Corresponding Author: Dr. Amit Singh**

Assistant Professor, Dept. of Kaumarbhritya, Chandrashekhar Singh Ayurved Sanshathan Kaushambi, U.P. India.

Article Received on 07/01/2021

Article Revised on 27/01/2021

Article Accepted on 17/02/2021

ABSTRACT

Ayurvedic therapeutic system is primogenital in origin with resources of knowledge about practices. In Ayurveda all acharyas cited the term Krimi and maximum of the authors defined the classification, causes, symptoms and treatment of the Krimi. Ayurvedic physicians were well alert about Krimis and Krimirogas. Word 'Krimi' is used as broad nous for all worms and microorganisms standpoint of contemporary science. Concept of krimi is not new its explanation is found since Vedic period. Krimis are categorized into two groups, Bahya and Abhyantara krimi. Abhyantara or internal krimi are supplementary sub-classified into three groups i.e, Raktaja, Kaphaja or Shleshmaja and Purisaja. Acharya Charaka has defined three folded treatment of Krimiroga viz. Apakarshana, Prakritivighata and Nidanparivarjana. Samshodhana is measured as a basic treatment of Krimiroga in Ayurveda. Concept of Krimi and Krimi Roga are accessible since Vedic period, but comprehensive descriptions are originate in samhita period along with three fold treatment of krimiroga. According to time era profundity of literature varies which had more aspect description regarding Krimiroga. Krimi word illustrations the all microorganism helminthes, protozoa, bacteria and virus in the Ayurvedic literature. So it is very trying to understand the correlation between the term krimi and modern science because of lack of detail explanation of individual krimi. Although management of krimi roga designated by text of Ayurveda are step by step in proper way but it is not well established practically because it is grim to follow the all steps of management specially in children.

KEYWORDS: Krimi roga in Children, Krimi roga, Bhaya Krimi, Abhyantara Krimi.**INTRODUCTION**

Salmonellosis is a major problem in most countries. It is caused by the Salmonella bacteria and symptoms are fever, headache, nausea, vomiting, abdominal pain and diarrhoea. Examples of foods involved in outbreaks of Salmonellosis are eggs, poultry and other meats, raw milk and Chocolate. Campylobacteriosis is a widespread infection. It is caused by certain species of Campylobacter, bacteria and in some countries; the reported number of cases surpasses the incidence of Salmonellosis. Food-borne cases are mainly caused by foods such as raw milk, raw or undercooked poultry and drinking water. Acute health effects of Campylobacteriosis include severe abdominal pain, fever, nausea and diarrhoea. In two to ten per cent of cases the infection may lead to chronic health problems, including reactive arthritis and neurological disorders. Cholera is a major public health problem in developing countries, also causing enormous economic losses. The disease is caused by the bacterium Vibrio-cholerae. In addition to water, contaminated foods can be the vehicle

of infection as Rice, Vegetables, Millet, and Gruel etc. Infections due to enterohaemorrhagic (causing intestinal bleeding) E. coli, e.g. E. coli O157, and listeriosis are important diseases which have emerged over the last decades. Although their incidence is relatively low, their severe and sometimes fatal health consequences, particularly among infants, children and the elderly, make them among the most serious infections. Naturally occurring toxins, such as mycotoxins, marine biotoxins, cyanogenic glycosides and toxins occurring in poisonous mushrooms periodically cause severe intoxications. Mycotoxins, such as aflatoxin and ochratoxin A, are found at measurable levels in many staple foods; the health implications of long-term exposure of such toxins are poorly understood. Unconventional agents such as the agent causing bovine spongiform encephalopathy (BSE, or "mad cow disease"), is associated with variant Creutzfeldt-Jakob (vCJD) Disease in humans. Consumption of bovine products containing brain tissue is the most likely route for transmission of the agent to humans. Persistent Organic Pollutants (POPs) are

compounds that accumulate in the environment and the human body. Known examples are Dioxins and PCBs (polychlorinated biphenyls). Dioxins are unwanted by products of some industrial processes and waste incineration. Exposure to POPs may result in a wide variety of adverse effects in humans. Metals, such as lead and mercury, cause neurological damage in infants and children. Exposure to cadmium can also cause kidney damage, usually seen in the elderly. These (and POPs) may contaminate food through pollution of air, water and soil. Some other causal organisms are also the culprits behind various similar type infections or diseases as Amoebiasis (amebic dysentery, amebic hepatitis), Giardiasis (lambliasis) etc. by Intestinal Protozoa; Trypanosomiasis, Leishmaniasis, Malaria, Babesiosis, Toxoplasmosis, Pneumocystis pneumonia etc. by Blood Protozoa; presence of Nematodes (Intestinal helminthes), Cestodes (The tapeworms); Schistosomiasis (Bilharziasis), Fasciolopsis buski (Giant intestinal fluke), Clonorchis sinensis (Chinese Liver Fluke), Paragonimus westermani (Lung Fluke) etc. by Trematodes and various similar infections caused by Arthropods - Fleas, lice, chiggers. According to CDC surveillance summaries, MMWR 1991; 40(no. SS-4) (authors; Paul Z. Siegel, M.D., M.P.H., Robert M. Brackbill, Ph.D., M.P.H., Emma L. Frazier, Ph.D., Peter Mariolis, Ph.D., Lee M. Sanderson, Ph.D., Michael N. Waller, State BRFSS Coordinators, Behavioral Risk Factor Surveillance Branch, Office of Surveillance and Analysis, National Center for Chronic Disease Prevention and Health Promotion, CDC) based on results of testing for intestinal parasites by state diagnostic laboratories, United States, 1987 results of 216,275 stool specimens examined by the state diagnostic laboratories in 1987 were analyzed; parasites were found in 20.0%. Percentages were highest for protozoans Giardia lamblia (7.2%), Entamoeba coli and Endolimax nana (4.2% each), Blastocystis hominis (2.6%), Entamoeba histolytica (0.9%), and Cryptosporidium species (0.2%). Identifications of G. lamblia increased broadly from the 4.0% average found in 1979, with 40 states reporting increases and seven decreases. Seasonally, Giardia identifications increased in the summer and fall, especially in northern states. The most commonly identified helminthes were nematodes: hookworm (1.5%), Trichuris trichiura (1.2%), and Ascaris lumbricoides (0.8%). Other less commonly identified helminthes include Clonorchis and Opisthorchis species (0.6%), Strongyloides stercoralis (0.4%), Hymenolepis nana (0.4%), Enterobius vermicularis (0.4%), and Taenia species (0.1%). Tape tests for Enterobius, reported for 35 states, were positive for 11.4% of 9597 specimens. Nine states (California, Colorado, Hawaii, Idaho, New Jersey, Oregon, Rhode Island, and Washington, Wisconsin) reported hookworms in more than 2% of specimens; none were states traditionally associated with indigenous transmission. They may be transmitted due to the globalization of the food supply, the inadvertent introduction of pathogens into new geographic areas, travelers, refugees, and immigrants exposed to

unfamiliar food borne hazards while abroad, changes in microorganisms, change in the human population, changes in lifestyle etc. To overcome such problems W.H.O. in partnership with other stakeholders is developing policies that will further promote the safety. These policies cover the entire food chain from production to consumption and will make use of different types of expertise. Work of the W.H.O. Food Safety Programme and other W.H.O. Programme and departments includes strengthening food safety systems, promoting good manufacturing practices and educating retailers and consumers. Education of consumers and training for safe food handling is one of the most critical interventions in the prevention of similar illnesses.

W.H.O. is promoting in-country laboratory-based surveillance of diseases in humans and animals, as well as the monitoring of pathogens in foods. In co-operation with its Member States, W.H.O. is working to support the development of internationally agreed-upon guidelines for data collection in countries. W.H.O. is also compiling outbreak and surveillance databases, and is broadening its epidemic surveillance capacity.

W.H.O. is expanding its global network of participating institutions to monitor chemical contamination of the food supply and drinking water, particularly in developing countries.

W.H.O. is promoting the use of all technologies which may contribute to public health, such as pasteurization, food irradiation and fermentation.

W.H.O. has undertaken an important new initiative to strengthen the scientific basis of food safety activities through the establishment of a W.H.O./F.A.O. (Food and Agriculture Organization of the United Nations) expert advisory body to assess microbiological risks.

W.H.O. is increasing its involvement in the work of the F.A.O./W.H.O. Codex Alimentarius Commission, whose standards, guidelines and recommendations are regarded as the international reference for safety requirements by the World Trade Organization. W.H.O. and F.A.O. are initiating a thorough review of Codex primo 2002.

On the other hand Sushruta Sutra Sthana 15/3 says that the base of body is Dosha, Dhatu and Mala, while Sushruta Sutra Sthana 21/2 deals with the origin of the body from Vata, Pitta and Kapha and Sushruta Sutra Sthana 21/7 explains that for its normal functioning each should act separately. However, all the bio-physiochemical actions are said to be done by these Tridosha i.e. Vata, Pitta and Kapha. When these are in Samyavastha (normal and balanced) they maintain health and life and when these are imbalanced or vitiated, various diseases come in existence. Similarly modern day life style, socio-economic plights, environmental pollution, change in population etc. also give rise to various diseases. Among all aforesaid reasons, in the

human body, G.I.T. is the abode of many helminthes, but some of them live in tissues if they migrate into tissues. They harm the host by depriving of food, causing blood loss, injury to organs intestinal or lymphatic obstruction and by secreting toxins. Poor children come across with helminthiasis. Hence the role of pediatrician becomes pivotal to cure them. As the meaning of Greek word Pedia, itrec and ics clearly indicate that pediatrics is the science of the childcare preventive as well as curative. This branch of science is not new to Ayurveda but it is considered as one of Ashtanga Ayurveda and as separate branch by the name Kaumarbhritya as the Sushruta. Su. 1/5 deals. It deals with the problems related to Bala. (Sushruta Sutra 1/5) The awareness regarding the Krimi and its incidents in children was described in Atharvaveda. Such a description is available in the special Mantra or it is shown by ancient seers "Krimi in Kumar". Ath11 Tropical countries like India have relatively, much acute problem of worm infestation among adult and children due to various reasons. Children are more prone to worm infestation frequently but adult are also vulnerable. Parasitic infestation, some times leave greater impact on the growth and development of the children.

Three methods of eradication of worm infestation have been described in Charak Samhita that is Apakarshana, Prakriti-Vighata and Nidana Parivarjana. Apakarshana means the removal of the Krimi (parasite) from the body by mechanical and therapeutic methods. Prakriti-Vighata indicates creation of such an environment in the gastro-intestinal tract, which hinder growth and development of the Krimi at the place of habitat. This regimen has other two aspects that is, immediate Prakriti-Vighata, which lead to instant removal or death of Krimi and another sustained action, so to say the regular use of regimen at shorter intervals along with food. Research works have been conducted in the field of Ayurveda to find out specific anthelmintic drugs for specific parasites. Honigberger (1852) described that Vidanga is a vermifuge. Neelmani (1974) showed Vidanga have been found to have positive anthelmintic activity against roundworm, and tape worm infestation. (Sharma et.al.1988) showed that Vidanga has high efficacy against oxyuriasis.

Krimis in Ayurveda

With reference to Sharma, P.V (*Ayurveda ka Vaigyanik Itihaas*. Chukhambha Orientalia, Varanasi, 2002) literatures of Ayurveda along with specific practices of Ayurveda can be differentiated in Samhitas, mainly Charaka (about 700 BC) and Sushruta (in between 300-200 B.C.), Sangraha mainly Vagabhatta's Ashtanga Sangraha, (most probably in between 200-400 A.D.) Nighantus (900 to 1800 A.D.) and modern era. Descriptions about the classification, pathogenesis and treatment of Krimi Roga are taken into account by many of workers from time to time.

Charaka Samhita mentions the total number of Krimi (twenty) in 19th chapter of Sutra Sthana. It has divided Krimis into two broad groups Sahaj (non-pathogenic) and Vikaraj (pathogenic) and further as Drishta and Adrishta in 7th chapter of Vimana Sthana, "Vyadhirupiya Vimana". Further classification of Krimis is only concerned with Vikaraj Krimis, as Internal and External Krimi. External Krimis are told of two types as Yuka and Pippalika while Internal is said to be of three type viz. Purishaja, Shleshmaja, and Shonitaj. Detailed description of Krimi Roga is mentioned in Ch.Vi.7/9 to32 with its three fold Chikitsa i.e. Apakarshan, Prakriti-Vighata, and Nidana Parivarjan.

Harita Samhita explains Krimi in 3rd sthana 5th chapter by dealing its number, size, shape, classification and habitat. Aetiology, pathogenesis, symptomatology and treatment of Krimi are explained in a nice way. In this book, Krimi is divided as internal and external Krimi with seven types of external Krimis and six types of internal Krimis. Descriptions relevant to survival of Krimi in Kostha are also mentioned.

Bhela Samhita mentions only twenty type of Krimi with their names (Bh.sam.26/7).

Kashyapa Samhita, deals with paediatrics problems i.e. Kaumarbhritya Tantra. It has mentioned the total number of Krimi and its treatment in the Chikitsa Sthan "Krimi Chikitsa". In this chapter administration of bitter and pungent drugs in Krimi Rogas are well explained for children. In Dwivraniya Adhyay of Kashyap Samhita indications about the medicated bath for external Krimis are also given.

Sushruta has described special chapter for Krimi dealing with number, Nidana, Rupa, classification, and treatment in Uttar Sthan 54th chapter under the title of f"Krimi Roga Pratishedha Adhyaya" in *Sushruta Samhita*. It has indicated twenty types of Krimi under various categories as *Drishta* and *Adrishta*, and as *Purishaja*, *Raktaja* and *Shlesmaja* Krimi. All the Krimis explained are of 'Abhyantara' type. Bahya Krimis are not mentioned here. Sushruta has also mentioned general cause (Samanya Nidana) of Krimi. The name of Gandupada Krimi is seperately mentioned in Purishaja type. The destruction of Kesha, Roma, Nakha etc. were responsible for the pathogenesis attributed to some of the Raktaja Krimis. The further knowledge about this is not known.

Ashtanga Sangraha and Ashtanga Hridaya, supposed to have originated from Charaka and Sushruta Samhitas explains the Nidana, Classification and Lakshanas of Krimi in Nidana Sthana and treatment of the Krimi in Chikitsa Sthana respectively. According to the origin and habitat twenty types of Krimis are told in *Madhava nidana*. Krimis are classified as external and internal Krimis. Internal Krimis are categorised in three types such as Raktaja, Purishaja and Shaleshmaj. The

treatment of Krimi borne diseases are mentioned in 7th chapter by named “Krimi Nidana”.

Sharangadhara Samhita has explained twenty two types of Krimis in Prathama Kanda seventh chapter according to etiology and symptomatology. References of Snayuka and Vrana Krimis are first found in this Samhita.

Nirukti of Krimi

“**Kramati Kramu Pada Vikshepe.**” Ay1 (*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 feetless.

“Kravye Medyati Kramte Wa Syat Saran Karmanah Kramte

Wa.” (Yaskacharya Niruktaam 6/3/13) Means those organisms which thrives on raw flesh and perform some

movements can be designated as Krimi e.g. *Woucheria 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**” (Vachaspatyam 3rd part) It means those which are capable to break or injure the surroundings can be said as Krimi or Kidah. According to Paniniya Vyakaran both the words (Krami & Krimi) bears the similar meaning. But for derivation of word Krimi, as per this book word Krami changes to Krimi after addition of suffix “en”. “**En Bhrameh Samprasanachacha**” means “en” suffix is used in sense of movement or roaming about.

Number of Krimis

Different authors do not agree on same number of Krimi. They have listed different number; work of few of them can be summarized in table as:

Table Number of Krimi in Different text.

Sr. Nu.	Ayurvedic Text	Number
1.	Charaka samhita	20
2.	Harita Samhita	13
3.	Bhela Samhita	20
4.	Ashtanga Sangraha	20
5.	Madhava Nidanam	20
6.	Sharangadhara Samhita	22
7.	Bhav Prakash	20

Classification of Krimis

Screening of texts from Veda till today, an idea about the host and parasite relationship being either harmful or non-harmful is got. The Krimi can be differentiated mainly in two categories on broad spectrum according to their pathogenic nature as:

1. Sahaja Krimi

2. **Vaikarika Krimi** 1) *Sahaja Krimi* → Those Krimi which do not leave any adverse alteration to human physiology, are termed as Sahaja Krimi. Some of them are found to be useful as *Lactobacillus* etc. Such types of Krimi are cited in buccal cavity of mouth, alimentary canal, vaginal canal etc. 2) *Vaikarika Krimi* → It is general psychology of human being that Krimis are harmful to human body. Exactly this psyche is due to Vaikarika type of Krimis. Means these are harmful Krimis. According to Charka they are divided in two types as Bahya and Abhyantara. Bahya Krimis are those which are found on external surface of the body as skin while the Abhyantara Krimis are found inside the body. Charaka and Vagbhatta have differentiated as above

(two types) but Sushruta did not mention anywhere the Bahya Krimi. Sushruta further classifies Abhyantara Krimis into twenty types under two groups as *Drishya* and *Adrishya*. In addition to this, Sushruta keeps Shleshmaja and Purishaja in Drishya and Raktaja in Adrishya type of Abhyantara Krimis. Amongst the Raktaja Krimis, Keshada and Romanda are told to be Asadhya (S. U. 54/20). Sharangadhara has described two more Krimis other than the twenty (mentioned by most of the authors) like Snayuka Krimi and Vrana Krimi, while Chakrapanidutta in comment of Charaka Samhita also expressed this similar view. Harita has told thirteen types of Krimis in Harita Samhita. By combining the names given by Charaka and Sushruta the total number goes upto thirty seven. Internal Krimis are divided in to three groups, eighteen in number according to Charaka, Vagbhatta, Madhavakara, and Bhavamishra and twenty according to Sushruta and six according to Harita. These internal Krimis are classified in to three groups. 1. Shleshmaja 2. Purishaja 3. Raktaja Going ahead to the classification of Sushruta for Abhyantara Krimi in to Drishya (Visible) Krimi, and Adrishya (invisible) Krimi,

thirteen Drishya Krimis (means those which are visible) are told. Of these thirteen, six are placed under Shleshmaja Krimis and seven under Purishaja Krimis. Adrishya Krimis are said of seven types as Keshad,

Lomad, Nakhad, Dantad, Kikkishah, Kusthaja and Parisharpaja under Raktaja Krimi. So, as a whole Krimis can be classified as in table no. 2.

Table 2: Classification of Kramis according to number.

Sr. Nu.	Name of Ayurvedic	Bhaya Krami	Abhyantar Krami				Grand Total
			Kaphaja	Purishaja	Raktaja	Total	
1.	Charak	2	7	5	6	18	20
2.	Sushrut	-	6	7	7	20	20
3.	Vagbhata	2	7	5	6	18	20
4.	Madhavkar	2	7	5	6	18	20
5.	Sarangdhar	2	7	5	6	18	20
6.	Bhav Prakash	2	7	5	6	18	20

Table 3: Names of Bhaya Krimis.

Sr. Nu.	Charak	Sushrut	Vagbhata
1.	Yuka	-	Yuka
2.	Piplika	-	Leeksha

Table 4.1: Name of Shleshmaj Abhyantara Krimis.

Sr.Nu.	Charak	Vagbhata	Sushrut
1.	Antrad	Antrad	Mahapushpa
2.	Hridayad	Hridayad	Pruloon
3.	Udarad	Udarvestha	Chipita
4.	Churu	Churu	Pipilika
5.	Mahaguda	Mahaguda	Daruna
6.	Saugandhika	Saugandhika	-
7.	Darbhakushma	Darbhakushma	Darbh

Table 4.2: Name of Purishaj Abhyantara Krimis.

Sr.Nu.	Charaka	Vagbhata	Sushruta
1.	Kakeruka	Kakeruka	Ajwa
2.	Makeruka	Makeruka	Vijya
3.	Sausurada	Sausurada	Kipyra
4.	Sasulka	Saluna	Chipya
5.	Leliha	Leliha	Gandupad
6.			Churu
			Dwimukha

Table 4.3: Name of Raktaj Abhyantara Krimis.

Sr. Nu.	Charaka	Vagbhata	Sushruta
1.	Keshad	Keshada	Keshad
2.	Lomada	Lomavidwanca	Romada
3.	Lomadwip	Lomadwip	Nakhad
4.	Saurasa	Saurasa	Dantad
5.	Udumbara	Udumbara	Kikkisha
6.	antumata	Matraha	Kushthaja
7.	-	-	Parisarpaja

Pathogenicity (Sign and Symptom)

The Krimi mentioned under different headings produce different signs and symptoms as:

Malaja (External) - These are responsible for causing itching and urticarial rashes after affecting the body.

Abhyantara (Internal) – Almost all the Ayurvedic texts except Charaka Samhita have described common signs and symptoms for all Krimi viz. fever, paleness of skin, cramping pain, cardiac trouble, lassitude, vertigo, aversion of food and diarrhoea. A typical picture of man infected with Krimi suddenly falls down on the ground,

becomes blind for a while with the froth coming out of mouth. The description of Krimija pandu is available in Charaka and other Samhitas. Some specific sign and symptoms are also described in Ayurvedic texts caused by individual and specific Krimi.

Sleshmaja - The Krimi of this group produces signs and symptoms related to upper gastro-intestinal tract, thorax, head and neck. Charaka and other Samhitas have given similar views, but Sushruta Samhita differs totally in this regard. The symptom like nausea, vomiting, ptilyism, anorexia, indigestion, fever, fainting, yawning, sneezing, bodyache, emaciation and roughness of body, mentioned in Charaka Samhita, Ashtanga Sangraha and other texts describe the above enumerated symptoms with certain added symptom i.e. cough, cold, heart diseases etc. while Sushruta has held them responsible for causing diseases of heart, eye, ear, nose, thorax, respiratory organs with degenerated changes of bone marrow, ear, palate and arms.

Purishaja – This type of Krimi causes mainly pain in anal region and diarrhoea, for which all the Samhitas have the same opinion. Thus it becomes obvious that these Krimi cause symptoms of lower gastro intestinal tract. Charaka has also mentioned that these Krimi produce stool-like smell from the mouth of infected person along roughness of body and manifestation of horripilation. Ashtanga Sangraha and others of later era have added paleness of skin, anorexia in described symptoms like cramps in intestine, distention in abdomen, loss of strength, waterbrash, and aversion of blood, heart diseases and loose motion. All the above mentioned symptoms with cutting pain in anus, rumbling sound, loose motion and indigestion are caused by Gandupada Krimi.

Raktaja - The signs and symptoms of these Krimis are clearly mentioned in Charaka and Sushruta Samhitas but other Acharyas have described them with one word i.e. “Kushthaik Karmanah”. According to Charaka Samhita these Krimis cause hyperesthesia, itching, pricking pain, creeping sensation in normal presence and erode skin, vessels, muscles and cartilages along with falling of hairs when they grow extensively. Sushruta has described that these Krimi cause Kustha Visharpa and Pidika etc.

Probable Correlation:- The commentators of Ayurvedic literatures have always tried to correlate the various Krimi and its science with the modern concept of parasitology, microbiology, and bacteriology. Present work also reconsiders probable correlations keeping in view the following points as:

™ Mode of entry and etiology

™ Sites (habitat)

™ Morphology

™ Namings

™ Pathogenecity.

Malaja - The Bahya Krimi described in Ayurveda, can be very well correlated with the parasitic lice, ticks, *Sarcoptes Scabiei* and *Pediculous pubis* of man mentioned in modern medical literature as per the similarities of their site, morphology and pathogenecity.

Shleshmaja (Kaphaja) - Even the vivid etiological meaning of these Krimis made by different scholars have some disparities, but all talk it spreading by ingestion of unwholesome food material i.e. Mithya Ahara especially Anupa Mamsa, fish and Parnashaka. So it can be undertaken as that under this heading only those microorganism caused by mediatory habits should be included. These can effect in two ways that is ova, cyst and bacteria can reach inside the body with such food and by providing favourable media for the microbes to flourish. Amashaya has been mentioned as the site of this Krimi by all the Acharyas, which denotes upper gastro intestinal tract, keeping in view the description of pathogenecity of Sushruta. The site of Kaphaja Krimi seems to be head neck, thorax alongwith upper gastro intestinal tract. None of the Acharyas after Sushruta have supported his view even then description given by Sushruta seems to be practical, and coincides with the pathogenecity described in all the Ayurvedic texts. So according to Sushruta upper gastro intestinal tract up to the upper part of small intestinal and thoracic cavity seems to be the site of the Kaphaja Krimi and micro organism. The morphology of Krimi described by Sushruta is found entirely different, when Agnivesh and other later Acharyas compared it. It seems that Sushruta has included in this group all the microbes. Charaka Samhita, Sushruta Samhita, Ashtanga Sangraha, Ashtanga Hridaya, Madhava Nidana and Yoga Ratnakara have also mentioned the morphological characters of these Krimi with such similarities. Prithu, Braghna, Gandupada, Tantwakriti are of white color means these morphological characters are only found in Kaphaja Krimi and not in any other group of Krimi described by them. This aspect must be kept in consideration at the time of correlation and finding of body equivalence. Naming of these Krimis seem to be given according to their effect on the body, the signs and symptoms (fever, vomiting, excessive salivation, and other symptoms of upper gastro intestinal tract) produced by Kaphaja Krimi which may be related to microbes. Similarly the parasite and bacteria caused by malfeeding habits and living in small intestine having white colour and round flat thread like shape can also be considered.

Purishaja - The mode of entry and etiology of this group of Krimi is almost similar in all the Ayurvedic texts. Charaka and other Acharyas have given special morphological characters of these Krimis. They say about their wool like appearance, thick and round shape, white-yellow and blackish colors. Sushruta has described them having red color and long shape and told their site of completely in large intestine and lower part of small intestine. Main symptoms mentioned by all Samhitas of this Krimi are itching in anal region and stool smell from

the mouth. Sushruta has made a special reference of Gandupada Krimi, which indicates towards the nematodes. *Ancylostoma duodenalis* cannot be included in both Purishaja and Kaphaja Krimi as it is not caused by malfeeding habits. The description of nomenclature of this Krimi is not available except of Leliha, which means snake, Gandupada and Dwimukha in Aryan languages. Hence no equivalence can be made as per their morphological character and pathogenicity. The detail of equivalence can probably be understood from the given table.

Raktaja - The etiological meaning of this group of Krimi is considered similar to Kustha. Sushruta says that they all are invisible according to morphology, pathogenicity and nomenclature of this group of Krimi. It seems that they include all micro-organisms living in the blood and lymphatics e.g. bacteria, fungus, virus, actinomyces, rickettsia and other blood parasites. Some probable equivalence in tabular forms can be illustrated as follows:

Table 5:

1.	Leliha, (Charaka). Gandupada (Shu.)	Nematodes (a) Thread worm (b) <i>Trichuris trichuria</i> (c) <i>Ascaris lumbricoides</i> (Shu.)
2.	Sashula (Ch. & others)	Sarcodina (a) <i>E. histolytica</i> (b) <i>E.nana</i>
3.	Sousharada (Ch. & others)	Ciliata (a) <i>Balantidium coli</i>
4.	Kakeruka (Ch. & others)	Trematodes (a) <i>Gastro-discoids hominis</i>
5.	Churu (Sushruta)	Entero-bacteriaceae (a) <i>Shiegella</i>

CONCLUSION

Concept of Krimi and Krimi Roga are accessible since Vedic period, but comprehensive descriptions are originate in samhita period along with three fold treatment of krimiroga. According to time era profundity of literature varies which had more aspect description regarding Krimiroga. Krimi word illustrations the all microorganism helminthes, protozoa, bacteria and virus in the Ayurvedic literature. So it is very trying to understand the correlation between the term krimi and modern science because of lack of detail explanation of individual krimi. Although management of krimi roga designated by text of Ayurveda are step by step in proper way but it is not well established practically because it is grim to follow the all steps of management specially in children.