



ISSN 2456-3110

Vol 7 · Issue 4

May 2022

Journal of
**Ayurveda and Integrated
Medical Sciences**

www.jaims.in

JAIMS

An International Journal for Researches in Ayurveda and Allied Sciences



Maharshi Charaka
Ayurveda

Indexed

Sleshmaja Krimi vis a vis Helicobacter Pylori: A Literary Review

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ABSTRACT

From the Vedic period onwards *Krimi* is accepted as an etiological factor of various diseases. In *Ayurveda*, *Krimi* is widely explained especially by *Acharya Charaka* who gave full details in *Vimanasthana Vyadhitroopiya Adhyaya*. There is detailed description of *Saptaka Gana* – *Samuthana* (*Nidana*/cause), *Sthana* (habitat), *Samsthana* (morphology/ form), *Varna* (colour), *Nama* (name), *Prabhava* (effect) & *Chikitsa* (treatment). Only a few studies have been carried out in *Ayurveda* to identify the type of *Krimi*, infection based on their types, etc. Some researchers tried very well to correlate various *Krimi* with some microbes. The probable correlation of *Krimi* with the contemporary infectious microbes may be possible by examining the resemblance of their habitat, morphology and effect on the host. But it is little bit a difficult task to correlate *Krimi* with the microbes due to lack of sufficient description of individual *Krimi*. Under the word *Krimi*, all microorganisms like bacteria, virus, parasites, fungi, etc. can be considered. Here we consider *Sleshmaja Krimi* w.s.r to *Helicobacter pylori* and also its habitat mucous layer as *Kledaka Kapha*. *Helicobacter pylori* is a gram-negative bacillus, which lives in gastric mucus, some adherent to the mucosa & some enters the cells or penetrates the mucosa; its distribution is not systemic. It is motile in the mucous environment because of its spiral shape & flagella. Colonization of this organism is an important risk factor in causing peptic ulcer, gastritis, gastric adenocarcinoma, etc. In some conditions like gastro-esophageal reflux disease, etc. *H.pylori* colonization may offer protection against the complications. Through this article, an effort has been made to describe the concept of *Sleshmaja Krimi* from different *Ayurvedic* treatises and also to correlate with *Helicobacter pylori*, based on the habitat and effect on human body.

Key words: *Sleshmaja Krimi*, *Helicobacter pylori*, *Amasaya*, *Stomach*, *Mucous layer*, *Kledaka Kapha*.

INTRODUCTION

In *Ayurveda*, the word '*Krimi*' can be widely used for all worms and microorganisms. But in the modern science, it's given separate branches for worms and microbes, viz, helminthology and microbiology respectively. The concept of *Krimi* is available from the

Vedic times. Almost all the *Acharyas* mentioned the term *Krimi* along with its *Nidana* (causes), *Lakshana* (signs & symptoms), *Chikitsa* (treatment), etc. *Acharya Charaka*, especially in *Vimanasthana Vyadhitroopiya Adhyaya*, gave details of *Krimi* elaboratively, in the form of *Saptaka Gana* of *Krimi Chikitsa* - *Samuthana* (*Nidana*/cause), *Sthana* (habitat), *Samsthana* (morphology/ form), *Varna* (colour), *Nama* (name), *Prabhava* (effect) & *Chikitsa* (treatment). There is description of 20 types of *Krimis* under four sub-divisions *Malaja*, *Raktaja*, *Shleshmaja* and *Purishaja*, in which the location of *Shleshmaja* and *Purishaja Krimis* are Gastro-intestinal tract.^[1] They produce local as well as general symptoms in human body.

Acharya Charaka has described three main treatments of *Krimiroga*- *Apakarshana* (extraction), *Prakriti-Vighata* (destruction of the source of origin) and

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Submission Date: 19/03/2022

Accepted Date: 23/04/2022

Access this article online

Quick Response Code



Website: www.jaims.in

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Nidana-Parivarjana (abstinence from the etiological factors).^[2] *Apakarshana* or extraction is done by means of hand or by instruments as per need. In case of internal *Krimi* extraction can be done by *Sodhana* (elimination therapies). These include *Sirovirechana* (medication through nasal route), *Vamana* (emesis), *Virechana* (purgation) and *Asthapana* (decoction enema). *Prakriti-Vighata* which is the destruction of susceptible environment of the *Krimi*, can be achieved by the use of drugs which are *Katu* (pungent), *Tikta* (bitter), *Kashaya* (astringent), *Kshara* (alkaline substances) and *Ushna* (hot in potency); and other measures which are contrary to *Kapha Dosha* mainly and thereby leading to the destruction of the source. Thereafter, *Nidana-Parivarjana* which means abstinence from the etiological/causative factors.^[3]

The *Sleshmaja Krimi*, which is located in the stomach is correlated here to *Helicobacter pylori* that resides in the gastric mucous. Also, the gastric mucous can be compared to the *Kledaka Kapha* (type of *Kapha* located in the stomach).

Helicobacter pylori is a gram-negative bacillus, that colonizes the stomach in ~50% of the world's human population. It lives in gastric mucus, some adherent to the mucosa & some enters the cells or penetrates the mucosa; its distribution is not systemic. It is motile in the mucus environment because of its spiral shape & flagella. It has acid resistant mechanisms, requires low oxygen levels & is slow-growing. Colonization of this organism is an important risk factor in causing peptic ulcer, gastritis, gastric adenocarcinoma, mucosa-associated lymphoid tissue (MALT) lymphoma, etc. Recent researches point out that *H.pylori* colonization is also a risk factor for some of the extra-gastric diseases. Proper treatment for *H.pylori* may provide permanent cure. In some conditions like gastro-esophageal reflux disease (GERD), esophageal carcinoma, etc. *H.pylori* colonization may offer protection against the complications.^[4]

OBJECTIVES

To establish the correlation between *Sleshmaja Krimi* & *Helicobacter pylori* and also between *Kledaka Kapha* & gastric mucous.

Sleshmaja Krimi Vis-A-Vis Helicobacter Pylori

Etiology

Description of etiological factors for both *Bahya* and *Abhyantara Krimi* are there in *Samhitas*. The *Bahya* (external) *Krimi* are produced due to "Mrija Varjana" (lack of cleanliness). Regarding *Abhyantara Krimi* some general and some specific etiological factors are mentioned. Here we are considering *Sleshmaja Krimi* only, so the causes include the excess intake of *Ksheera* (milk), *Guda* (jaggery), *Tila* (*Sesamum indicum*), *Matsya* (fish), *Anupa Mamsa* (meat of animals living in marshy area), *Pishtanna* (pastries), *Paramanna* (milk preparations like *Kheer*), *Kusumbha Sneha* (oil of *Carthamus tinctorius*), *Ajirna-Puti-Klinna* (uncooked, putrefied & softened food items), *Samkeerna* (food mixed with dirt, etc.) & *Virudha Asatmya Bhojana* (incompatible & unwholesome food).^[5]

The risk factors for *H.pylori* infection are domestic crowding, unsanitary living conditions, unhygienic food or water and exposure to gastric contents of an infected person. Transmission of *H.pylori* occurs from person to person, following an oral-oral or faecal-oral route.^[6]

Habitat

Amasaya (stomach) is considered as the habitat of *Sleshmaja Krimi*. When grown in excess, they move upwards or downwards.^[7] *Sleshma* in *Amasaya* is considered as the *Kledaka Kapha* which can be correlated with the mucous present in the gastric mucosa or mucous layer.

The mucosa of the stomach has 2 types of glands- oxyntic (acid forming) glands and pyloric glands, located between mucus secreting cells, called surface mucous cells.

Mucous neck cells, peptic/chief cells and parietal/oxyntic cells constitute the oxyntic glands located inside the body and fundus; besides secreting HCl, pepsinogen and intrinsic factor also secrete mucous.

Located at antrum, the pyloric glands secrete mainly mucus, pepsinogen and gastrin. The mucus produced

from these cells, especially from pyloric glands and surface mucous cells helps to lubricate movement of food and helps to protect stomach wall from auto-digestion. *Kledaka Kapha* should be seen in this point of view.^[8]

H.pylori is found most commonly in the deeper portions of the mucous gel coating the gastric mucosa or between the mucous layer and the gastric epithelium. It has been designed accordingly to live in the aggressive atmosphere of the stomach. Initially it resides in the antrum, later migrates toward the more proximal segments of the stomach.^[9]

Form & Colour

Some are big & flat (tape-like) in shape & white in colour while some are round in shape similar to earthworm & white colour with coppery tinge. Some others are minute long thread-like in structure & white in colour.^[10]

H.pylori is S-shaped (~0.5-3 µm in size) with multiple sheathed flagella.^[11]

Types of Sleshmaja Krimi

Antrada, *Udarada*, *Hridayachara*, *Churava*, *Darbhapushpa*, *Saugandhika* & *Mahaguda* are the names of various *Sleshmaja Krimi* as per Acharya Charaka.^[12]

Signs & Symptoms

Jwara (fever), *Vivarnata* (discoloration), *Soola* (pain in abdomen), *Hridroga* (disorders in the region of heart), *Bhrama* (giddiness), *Annadhvesha* (aversion to food) & *Atisara* (diarrhoea) are the symptoms of worms present in the human body. The clinical features due to *Sleshmaja Krimi* are *Hrillasa* (nausea), *Asyasamsravanam* (salivation), *Arochaka* (anorexia), *Avipaka* (indigestion), *Jwara* (fever), *Murcha* (fainting), *Jrumbha* (yawning), *Kshavadhu* (sneezing), *Anaha* (constipation), *Angamardha* (malaise), *Chhardi* (vomiting), *Karshyam* (emaciation) & *Parushya* (dryness).^[13]

The ultimate result of *H.pylori* infection may include gastritis, PUD, gastric MALT lymphoma and gastric cancer, which are determined by the complex interplay

between bacterial and host factors.^[14] The symptoms of gastritis mainly include nausea, vomiting, loss of appetite, abdominal pain and weight loss and that of gastric cancer include poor appetite, nausea, vomiting, heartburn, abdominal pain, blood in stool, weight loss, etc. Peptic ulcer disease shows symptoms like belching, heartburn, indigestion, nausea, vomiting, abdominal discomfort, etc.^[15]

Treatment

All the *Krimis* (parasites) should be extracted first, then the factors responsible should be counteracted and the causes of production of the parasites should be avoided. *Samshodhana* (purificatory therapy) is considered as a basic treatment of *Krimiroga*. When it is done along with *Prakriti Vighata* and *Nidan Parivarjana*, it can eradicate *Krimiroga* from the base.^[16] The avoidance of *Aharas* and those *Viharas* which are conducive for the formation of *Krimi* can inhibit the growth of parasites and other micro-organisms and also prevents the secondary infection or re-infestation. *Samshodhana* is not desirable in *Bala* (children), *Vridhdha* (elderly people), etc. So, keeping this in mind *Samshamana* therapy may be selected by the Ayurvedic practitioners with suitable *Krimighna* drugs which are described in classics such as *Krimighna Dashaimani* (10 drugs that can cure *Krimi*) in *Charaka Samhita Sutrasthana*.

Pathya-Apathyas

The *Pathya Aharas* to be followed are *Rakta Sali*, *Patola*, *Vetragra*, *Rasona*, *Vastuka*, *Brihati-Phala*, *Vidanga*, *Katu-Tikta Kashaya Bhojana*, etc. The *Apathyas* include *Vega-Dharana*, *Virudha-Pana-Ashana*, *Divaswapna*, *Pishtanna*, *Dadhi*, *Amla-Madhura Rasa*.^[17]

DISCUSSION

As per Ayurveda, the term *Krimi* stands for both macro and micro-organisms. The word *Krimi* can be correlated with microbes and parasites depend upon their habitat, available morphological features along with sign and symptoms they produce in the host. Particular correlation of all the *Krimis* with the microorganisms is not easy but some of them possess

similar features and shows similar effects like that of microbes and parasites. Ayurvedic scholars had made some attempts to correlate various types of *Krimi* with the microorganisms and parasites.

The *Sleshmaja Krimi* lives in *Amasaya* (upper part of gut), but when multiplies, they travel through both upward and downward directions of gut. *Sleshma* in *Amasaya* is considered as the *Kledaka Kapha* which can be correlated with the mucous present in the gastric mucosa or mucous layer. These *Krimi* possess different shapes such as thick, flat, elongated, round, ring-like, etc. and produce symptoms like nausea, vomiting, salivation, anorexia, indigestion, fever, emaciation etc. *Helicobacter pylori* is most commonly seen in the gastric mucosa or between the mucous layer and the gastric epithelium. It lives in the aggressive atmosphere of the stomach. Initially it resides in the antrum, later migrates toward the more proximal segments of the stomach. The symptoms of infection by *H.pylori* are like that of gastritis, PUD, gastric MALT lymphoma and gastric cancer, which may include nausea, vomiting, loss of appetite, abdominal pain, heartburn, weight loss, blood in stool, belching, etc. Thus, it is clear that *Sleshmaja Krimi* can be correlated to *H.pylori* by considering similar habitat and symptoms produced.

CONCLUSION

Krimi is a term used broadly for describing all the worms and microorganisms. The existence of *Krimi* has been described from Vedic period onwards, but detailed description given in Samhita period. In the modern era due to invention of instruments like microscope the study of microbes became easy. In Samhitas, classification, nomenclature, etiology, signs & symptoms, and treatment of various types of *Krimi* are well described. These microorganisms enter into the human body through contaminated food, water, soil, etc. The general symptoms include diseases of GIT, skin and anaemia, etc. as per contemporary science. From their habitat inside host, clinical features they produce, etc. these *Krimi* can be compared with various bacteria, viruses, fungi, and parasites described in modern science. *Apakarshana*, *Prakriti Vighatana*,

and *Nidana Parivarjana* are the main principles of treatment applied for *Krimi*. The *Sleshmaja Krimi* lives in *Amasaya* and *Helicobacter pylori* is seen in the gastric mucosa or between the mucous layer and the gastric epithelium. *Sleshma* in *Amasaya* is considered as the *Kledaka Kapha* which can be correlated with the mucous present in the gastric mucosa or mucous layer.

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How to cite this article: Megha Murali, Sumit Kumar, Nitish Raj, Sujeet Kumar. Sleshmaja Krimi vis a vis Helicobacter Pylori: A Literary Review. J Ayurveda Integr Med Sci 2022;4:40-44.

Source of Support: Nil, **Conflict of Interest:** None declared.
