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# A critical review on *Krimidanta* in *Shalaky Tantra*

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## ABSTRACT

*Krimidanta* is one of the most common dental problems in today's world. In ancient texts one could find a vast description of *Krimidanta*, it's included mainly in *Dantagata Rogas*. Importance of *Krimidanta* can be understood by the fact that *Acharya Vagbhatta* has mentioned about *Krimidanta* in there ten *Dantarogas*, *Acharya Sushruta*, *Acharya Bhavaprakash*, *Acharya Yogratanakar* have mentioned about *Krimidanta* in there eight *Dantarogas*, while *Acharya Harita* has mentioned about *Krimidanta* in five *Dantarogas*. On the basis of the clinical features mentioned by *Acharyas*, *Krimidanta* can be compared to dental caries. Where dental represents teeth and the word caries is derived from the latin word meanings rot or decay.<sup>[1]</sup> Dental caries is irreversible microbial disease of the calcified tissues of the teeth, leading to destruction of dentine, enamel and cementum, and ultimately tooth decay.<sup>[2]</sup> Dental caries can occur throughout life, both in primary and permanent dentitions, and can damage the tooth crown and in later life expose tooth surfaces. Modern science has provided many remedies for the treatment of dental caries or *Krimidanta* but besides been expensive these remedies cause harmful effects which are better termed as side effects. Scientific researches confirm it, as according to a recent research, daily use of fluoride tooth paste is seen as the main reason for the overall decline of dental caries worldwide over recent decades.<sup>[3]</sup> Thus *Ayurvedic* line of treatment becomes the mode of choice in case of *Krimidanta* as the treatment is natural and there is no recurrence.

**Key words:** *Krimidanta*, dental carries, *Dantarogas*, *Ayurvedic*, treatment.

## INTRODUCTION

Oral health is the key indicator of overall health of the individual, and his quality of life. It environs various diseases like dental caries, oral carcinoma, periodontal diseases, etc. Oral health has been one of the significant fields of concern since ancient times. In

*Ayurveda* texts *Acharyas* have provided detailed information about *Dantagata Rogas* and *Mukhagata Rogas* which are very helpful today in understanding the present versions of *Rogas* especially *Krimidanta*, it includes both diagnosis and treatment of *Krimidanta*. Whereas modern science provides us with the theories of dental caries three of the famous theories related to dental carries are;

- 1) The Acidogenic Theory which was first postulated by Willoughby D. Miller in 1890,<sup>[4]</sup>
- 2) The Proteolytic Theory which was proposed by Gottlieb in 1944.<sup>[5]</sup>
- 3) The Proteolysis-Chelation Theory which was proposed by Schatz in 1955.<sup>[6]</sup>

Dental caries is an irreversible microbial disease of the calcified tissues of the teeth, caused mainly by micro-organisms like lactobacillus, actinomyces viscosus, norcardia, etc. Similar to dental caries *Krimidanta* is

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mentioned in *Ayurvedic* texts by *Acharyas* suggest *Krimi* as the main cause of *Krimidanta*, which is justifying the modern microbial cause of the disease.

#### Localization of carious micro flora in animal models and its significance to humans.<sup>[7]</sup>

Types of dental caries	Micro organism	Human
Pit and Fissure	S. Mutans	Very Significant
	S. Sanguis	Uncertain
	Lactobacillus Species	Very Significant
	Actinomyces Species	By Chance
Smooth Surface	S. Mutans	Very Significant
	S. Salivarius	By Chance
Root Surface	S. Mutans	Very Significant
	S. Sanguis	Very Significant
	A. Viscosus	Significant
Deep Dentinal Caries	Lactobacillus Species	Very Significant
	Other filamentous rods	Very Significant
		Very Significant

The above classification of micro-organisms shows their variety and types of dental caries they can cause, similarly according to *Ayurved* about 20 different types of *Krimi* are mentioned which are categorised according to their size, shape and colour, Among these some of the *Krimi* effect *Danta* (teeth) also leading to *Krimidanta* or dental caries.

#### Ayurvedic Review

**Krimi:** is made up of two words, “Krum” + “In” which means; *Keet* (Insect) + *Roga*. Here *Danta* means tooth, together making *Krimidanta*.

#### Samanya Nidan and Samprapti of Krimidanta

*Krimidanta* occurs mainly due to *Vata Dushti*, it is characterized by black discolouration, cavity formation, loose tooth, pus formation, swelling and pain.<sup>[8]</sup> Generally stale static food which remains in between the teeth triggers *Krimidanta* or dental caries as the food which is stuck in between the teeth starts to decay, due to which bacteria (*Krimi*) starts to grow there causing discolouration of teeth. Another factor that causes *Krimidanta* is deficiency of calcium and vitamin D in the body.

*Nidhana Sevana* → Vitiation of *Vata Dosha* → *Krimidanta*

#### Samanya Chikitsa for Krimidanta<sup>[9]</sup>

*Chikitsa* of *Krimidanta* has been described beautifully by *Acharya Sushruta*; he has mentioned two senates of *Krimidanta*, which are movable *Krimidanta* and immovable *Krimidanta*. These are described as follows;

1. The treatment of movable *Krimidanta* is done by *Swedana*, *Raktamokhshan*, *Vatagna Avpeedana*, *Sneha Gandusha*, *Lepana*, *Snigda Ahara*.
2. The treatment of immovable *Krimidanta* is done by extraction, cauterization and *Nasya*.
3. *Kriyakalpa* is also one of the suitable ways of treatment in which *Hinga*, *Kayaphala*, *Hirakasa*, *Sajjikshar*, *Kushta*, *Marichchurna*. *Siddhataila* is used for *Kawal* or *Gandusha*.

Besides above-mentioned treatment some contraindications (*Apathya*) are also mentioned in *Krimidanta* which include avoidance of sour fruits, cold water, dry food, and hard food intake.<sup>[10]</sup>

#### Modern Review

Dental means pertaining to teeth. Caries means – decay of the bones or the teeth. Decay means to fall off, to decrease, and to deteriorate. Permanently damaged areas in teeth that develop into tiny holes are called as dental caries. Dental caries is a Microbial disease of calcified tissues of teeth characterized by demineralization of inorganic portion and destruction of organic substance of tooth. It is very common disease among the tooth problems. In India, more than

10 million cases per year patient are found of dental caries.

### Etiological factors

- 1) Dietary factors include eating food rich in sugar increases acid production that damages tooth enamel. Sticky foods remain on the surface of tooth for longer time. Carbohydrates rich diet more causes caries. Inadequate intake of calcium and vitamin D in the diet.
- 2) Microorganisms such as streptococcus mutans, actinomyces viscosus, lactobacillus acidophilus, etc.
- 3) Systemic factor, which include hereditary, pregnancy.
- 4) Host factor, which include poor oral hygiene, improper brush technique.
- 5) Enamel hypoplasia predisposes to more dental caries.
- 6) Teeth when have high percentages of fluoride are more resistant to caries.
- 7) Crowded and irregular teeth are not readily cleansed during natural mastication.
- 8) Presence of dental appliances like partial denture, space maintainers and orthodontic appliances increases retention of food debris and plaque materials.
- 9) Salivation, both thick ropy saliva and thin watery saliva have responsible for caries.

### Types of Treatments

#### 1) Filling

It is the most common type of the treatments; it includes drilling into the affected areas of the teeth, removes the decayed material inside the prepared cavity and packs this space with appropriate dental filling material. There are various materials for filling depending on the area of cavity. Composite resin it is most common filling material has a great pallet of colour used for the filling of visible tooth from front side. It is good for cosmetic. In case of back teeth dentist used the stronger material for dental fillings.

#### 2) Crowns

When Large Part of the tooth is destroyed and when tooth decay leads to the need for large fillings the tooth becomes more prone to cracks and breaking of tooth The dentist would attempts to salvage the remaining tooth, repair it and finally fit the tooth with as alloy or porcelain crown covering.

#### 3) Root Canal Treatment (RCT)

Tooth Decay progresses through the enamel and settles in the centre of the tooth, it may be progressive in nature and damage the nerves present in the root. Dentist removes that affected nerve with adjustment blood vessels, tissue, and pulp and fills the area of cavity. The procedure also has placing a crown over affected area.

#### 4) Extraction of the tooth

In some cases, the tooth may be damaged beyond repair and due to the risk of infection spreading to the jaw bones tooth extraction is done as the last means of treatment.

### Prevention

- 1) Great oral hygiene.
- 2) Regular Dental checkups.
- 3) Brushing the teeth twice a day using fluoride rinse, paste, or gel.
- 4) Flossing after brushing must be done of, we are eating drinking sugary food and drinks because continuous eating sugary food and drinks supply the acid damaging the teeth. Flossing once or twice a day with fluoride gargling solution can help to remove food particles from between the hard-to-reach areas of teeth that might be missing.

### DISCUSSION

*Krimidanta* (dental caries) is very common all over the world and involves all the age groups due to bad oral hygiene, lack of awareness about proper oral hygienic measures and bad habits like chewing tobacco, smoking, etc. *Krimidanta* is silently progressive in nature. Generally, the disease *Krimidanta* is neglected by the patients of all age groups till the pathogenesis

become irreversible. It is observed that patients are worried of the time consuming and lengthy treatment like scaling, filling, root canal treatment and consulting the dentist regularly. Improper management in early stage leads the disease to the chronic phase. Dental caries is a problem related to the improper oral care; if at an early stage, the condition is neglected by the patients, the disease finally results in tooth loss. In *Krimidanta* decay activity is the highest during the age of 15-20 years. Though many theories are put forth to understand the exact mechanisms of caries formation, still the exact mechanism is not known. Dental caries is a microbial disease of the calcified tissues of the teeth, characterized by decalcification of the inorganic portion and destruction of the organic substances of the tooth.

## CONCLUSION

*Krimidanta* is associated with discolouration of teeth, cavity formation, loose tooth, pus formation, swelling and pain; it can be clinically correlated with dental caries. *Acharyas* have mentioned various means of treatment of *Krimidanta* which includes *Gandush*, *Raktamokshana*, *Vatagna Avpeedana*, etc. which are very effect in present times. Also, avoidance of acidic food and maintenance of oral hygiene is very important to protect the teeth against *Krimi*.

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