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Review Article

SHITADA (GINGIVITIS): AN INTEGRATIVE REVIEW OF AYURVEDIC CONCEPTS AND CONTEMPORARY PERSPECTIVES

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ABSTRACT

Shitada, described in Ayurvedic literature as a disease of the gums under *Dantamoolagata Rogas*, is characterized by symptoms such as gum bleeding, foul odour, discoloration, softness, swelling, and recession of the gingiva due to the vitiation of *Kapha and Rakta*. It is considered comparable to gingivitis in modern dentistry, a common inflammatory condition of the gums that may advance to periodontitis if untreated. poor oral hygiene, unhealthy habits, nutritional deficiencies, lifestyle changes, and certain pathological conditions are recognized as important contributing factors. Given the high global prevalence of gingival diseases and the limitations associated with conventional treatments, Ayurvedic management offers a promising alternative. Various therapeutic approaches, including *Gandusha*, *Pratisarana*, *Kavala* and *Raktamokshana*. Analysis of many subjective and objective treatment outcomes demonstrated significant improvement in both local and systemic manifestations of the disease. The findings suggest that Ayurvedic interventions are effective, economical, and safe options for managing *Shitada* (gingivitis). Considering the increasing prevalence of gingivitis and its growing health and economic burden, Ayurvedic interventions provide an affordable, holistic, and preventive approach that promotes gingival health, reduces disease progression, and may lower long-term healthcare costs.

Keywords: *Shitada*, *Dantamoolagata* *Kapha* *Rakta*. *Gandusha*, *Pratisarana* *Raktamokshana*. Gingivitis, plaque Biofilm.

INTRODUCTION

Gingivitis is an inflammatory condition confined to the gingiva that develops in response to dental plaque biofilm. Clinically, it presents with erythema, edema, bleeding upon probing, and changes in the gingival contour without any loss of connective tissue attachment or alveolar bone. [1]

Gingivitis is identified clinically as inflammation of the gingiva causing one or more soft tissue changes including redness, oedema, increase in thickness, ulceration, or bleeding.[2]

Gingivitis is an inflammatory disorder affecting the gingival tissues and is primarily associated with bacterial plaque accumulation. Gingivitis is recognized as the most prevalent form of periodontal disease and can be classified according to its clinical presentation, duration, severity, and underlying cause. Among these

classifications, chronic plaque-induced gingivitis represents the most commonly encountered type. Clinically, it is characterized by gingival enlargement, erythema, tenderness, a smooth and glossy appearance, and bleeding on gentle probing. Since gingivitis is generally painless and rarely causes spontaneous bleeding, many individuals remain unaware of the condition and consequently do not seek professional dental care.[3] According to *Sushruta Samhita*, the veteran classical text of Ayurveda, *Shitada* is described as one of the fifteen *Dantamoolagata Rogas* (periodontal disorders).[4] It represents an early stage of periodontal disease which, if not managed appropriately, may subsequently progress to conditions such as *Dantaveshta* and *Upakusha*. Contemporary lifestyle factors, including frequent consumption of fast foods, tobacco smoking, betel nut chewing, and inadequate oral hygiene practices, contribute to the vitiation of *Kapha* and *Rakta Doshas*. *Doshas* imbalance is considered the primary etiological factor in the development of *Shitada*. Clinically, the condition is characterized by *Raktasrava* (bleeding gums), *Krishnata* (gingival discoloration), *Prakleda* (excessive moisture), *Mriduta* (spongy consistency of the gums), *Shotha* (gingival swelling), and *Mukha Daurgandhya* (halitosis) during its initial stages.[5]

If left untreated, advanced manifestations such as *Paka* (suppuration), *Dantamamsa Shiryamanata* (gingival recession), and *Chalata* (tooth mobility) may develop.

According periodontics marginal gingivitis is influenced by both local and systemic factors. Local factors include dental plaque microorganisms, calculus, food impaction, defective restorations, mouth breathing, and mal positioned teeth. Systemic contributors include nutritional deficiencies, drug allergies, hormonal changes associated with puberty, pregnancy, and menstrual disorders, endocrine diseases such as diabetes mellitus, haematological disorders, hereditary factors, granulomatous infections, and immunodeficiency conditions, Management primarily involves scaling and polishing, root planing, and gingivoplasty to restore gingival health and prevent disease progression. Advanced clinical approach diagnostic methods are suggested by modern dentistry.

Prevalence:

According to conducted study India's oral disease burden and oral health system progress (NOHP) from 2014 to 2025, Findings were narratively summarised that 46.6% pooled national prevalence of gingivitis in India (95% CI: 37.8%–55.5%), with the condition heavily affecting children and adolescents. Gingivitis affected 46.6% of the population and periodontitis was 51% (≥ 15 years). [6]

Etiology (Nidana of Shitada)

Classical Ayurvedic texts do not describe specific *Nidana* exclusively for *Shitada*. However, general *Nidanas* for *Mukha Rogas* have been detailed by the Acharyas. Since *Shitada* involves the *Dantamoola*, which is a component of the *Mukha*, so general causative factors can be considered applicable in this condition.

According to Ayurveda significant number of dietary causes and some habits are dominated by *Madhura Rasa* and *Amla Rasa*, which contribute to the aggravation of *Kapha* and *Pitta Dosha*. The vitiation of these doshas further affects the *Rakta Dhātu*, ultimately leading to the manifestation of the disease.

Aaharajanya Nidana

Matsya Sevana (excessive ingestion of fish) *Mahisha* and *Varaha Mamsa Sevana* (excessive ingestion of buffalo's and Pig's meat) *Ama Mulaka* (raw raddish) *Masha* (black gram) *Ksheera* (milk) *Ksheera* (milk) *Ikshu* (sugarcane juice) *Shukta* (fermented gruel) *Phanita* (half cooked molasses) *Guru*, *Madhura*, *Shita Ruksha Aahara Sevana* *Ati Shitambu Sevana*

Viharajanya Nidana

Avaka Shayya (Sleeping in prone position), *Ati Parshwa Shayana* (Excessive sleeping in lateral position), *Anuchita- Dhuma*, *Chardana*, *Siravedha* (Improper smoking, vomiting, venesection) *Vega Vidharana* (suppression of natural urges) *Snana after Guru Aahara Sevana*, or *in Ajirna Avastha*, *Avrita Mukha Shayana*, *Danta Dhavana Dwesha* (Improper dental hygiene), *Anuchita- Gandusha* (Improper gargling). Most of the above mentioned Ayurvedic *Nidanas* are indicating towards poor digestion and absorption related issue, improper life style, unhealthy dietary habits and compromised oral hygiene.

Classification

The American Academy of Periodontology (AAP) uses the consensus-driven 2017/2018 classification framework for gingivitis. In this framework, gingivitis is fundamentally categorized into two main groups based on aetiology - Dental Plaque Biofilm-Induced Gingivitis and Non-Dental Plaque-Induced Gingival Diseases.

Plaque Induced Gingivitis

Plaque-induced gingivitis is currently defined according to the 2017 World Workshop Classification of Periodontal and Peri-Implant Diseases and Conditions. This classification introduced standardized diagnostic criteria for the first time, enabling the consistent identification and diagnosis of gingivitis cases in both clinical practice and research.[7]

Plaque-induced gingival diseases represent the most prevalent form of gingival pathology and develops as a consequence of the interaction between dental plaque micro-organisms and the host immune response. This condition may occur in individuals with an intact periodontium exhibiting no attachment loss, as well as in those with a history of attachment loss that has remained stable without evidence of ongoing progression. The inflammatory changes associated with plaque-induced gingival disease are primarily initiated by microbial biofilms; however, the extent and severity of the host response are influenced by several modifying factors.

Local factors play a significant role in enhancing plaque accumulation and retention. These include the presence of pathogenic microorganisms, dental calculus deposits, food impaction, improperly contoured or irritating restorations and dental appliances, habitual mouth breathing, and mal positioned teeth that complicate effective oral hygiene practices.

In addition to local influences, a variety of systemic conditions can alter the host's susceptibility and inflammatory response to plaque. Nutritional deficiencies may impair tissue integrity and immune function, while certain medications can modify gingival tissues or inflammatory pathways. Hormonal fluctuations associated with puberty, pregnancy, the menstrual cycle, and diabetes mellitus have been shown to affect gingival health and increase the tissue response to plaque. Other systemic modifying factors include allergic reactions, genetic predisposition, psychological phenomena, specific granulomatous infections, neutrophil dysfunction, and various immunological disorders. [8]

Collectively, these factors can influence the onset, severity, and clinical manifestations of plaque-induced gingival disease. Gingivitis modified with medications and modified with malnutrition.

Non plaque induced gingivitis

Non plaque induced gingival diseases encompass a diverse group of conditions, including bacterial, viral, and fungal infections, hereditary or genetic disorders, gingival manifestations associated with systemic diseases, trauma-induced lesions, reactions to foreign materials, and other conditions that do not fit into specific categories. Among these disorders, desquamative gingival lesions represent a clinically important group and are commonly associated with conditions such as lichen planus, pemphigus, and cicatricial pemphigoid. [9]

Diagnosis

The major significance of the 2018 gingivitis classification criteria is utilizing a simple, objective, and reliable clinical sign, bleeding on probing score (BOP%), to diagnose gingivitis. [10].

The most recent one was proposed in 2018 by the American Academy of Periodontology (AAP) and the European Federation of Periodontology (EFP). [11]

Today, plaque-induced gingivitis is clearly defined within the framework of the 2017 World Workshop on the Classification of Periodontal and Peri-Implant Diseases and Conditions, where for the first time a set of criteria to identify a "gingivitis case" was established [12]

Advancement in clinical diagnostic approach

Recent clinical diagnostic approaches for gingivitis are shifting from subjective visual checks to objective tools, featuring artificial intelligence (AI) image analysis, infrared thermography, and salivary/crevicular fluid biomarkers. [13]

Digital intraoral scans provide a useful, non-invasive method for assessing gingival health by using automated colorimetric analysis to detect and measure changes in gum color that are closely associated with inflammation.

Artificial intelligence-based photographic detection of gingivitis uses automated analysis of intraoral photographs to identify early signs of gingival inflammation.[14]

Deep learning and convolutional neural network (CNN)–based artificial intelligence models can analyze standard intraoral photographs or even smartphone images to identify plaque accumulation and localized gingival redness with high accuracy, offering promising support for early screening of gingivitis.

Infrared thermography is another non-invasive diagnostic approach that records localized temperature changes caused by active tissue inflammation, thereby helping to distinguish healthy gingiva from inflamed periodontal sites.

Gingival crevicular fluid (GCF) has emerged as a valuable, site-specific, and non-invasive diagnostic medium for the early detection of periodontal inflammation. It allows assessment of host-response enzymes and inflammatory biomarkers before significant clinical tissue destruction becomes evident.

Recent advances in point-of-care biosensor technology, including electrochemical and paper-based platforms, have further improved chairside periodontal diagnostics by enabling rapid and sensitive detection of biomarkers such as activematrix metalloproteinase-8 (aMMP-8). These innovations support early diagnosis, disease monitoring, and more personalized periodontal care in gingivitis management. [14,15]

Management:

Modern periodontal management of gingivitis primarily focuses on eliminating dental plaque and controlling inflammation to prevent progression to periodontitis. Professional dental cleaning, including scaling and polishing, is the cornerstone of treatment, as it removes plaque and calculus from tooth surfaces. This is complemented by effective daily oral hygiene practices. In cases associated with systemic conditions or risk factors such as smoking or diabetes, appropriate management of these underlying factors further enhances treatment outcomes.

Ayurveda Perspective:

From an Ayurvedic perspective, the management of gingivitis (*Shitada*) focuses on correcting the underlying *Dosha* imbalance while restoring the health of the gingival tissues. Treatment combines local therapies such as *Pratisarana*, *Gandusha*, and *Kavala* with appropriate dietary regulation and oral hygiene practices to reduce inflammation and bleeding. This holistic approach not only alleviates existing symptoms but also supports long-term periodontal health and helps prevent recurrence.

Nidana Parivarjana and Shodhana:

The primary principle in Ayurvedic management of *Shitada* is *Nidana Parivarjana* (elimination of causative factors). Patients are advised to avoid dietary and lifestyle habits that aggravate the disease, such as excessive intake of hot, spicy, and oily foods, while maintaining proper oral hygiene and avoiding traumatic brushing practices. Management should also consider factors such as *Ritu* (season), *Kala* (time), and *Dosha*, with therapeutic measures selected to counteract the aggravated *Doshas*. In the presence of *Ama*, *Langhana* and *Pachana* are recommended to improve metabolism and reduce inflammation. For oral swelling, local therapies including *Pragharshana* (gentle rubbing) and *Kavalagraha* (medicated gargling) are beneficial. When *Dosha* vitiation is severe, *Shodhana* procedures such as *Vamana* (therapeutic emesis) and *Virechana* (therapeutic purgation) are indicated to eliminate morbid *Doshas* and restore systemic balance. [16,17,18]

Ayurvedic Intervention:

"*Shonita Vishravana* (bloodletting from the gums), *Pratisarana* with *Tejovatyadi Churna* (local application of medicated powder with gentle rubbing), and *Gandusha* with *Rasanjanadi Kashaya* (medicated decoction retention in the oral cavity) are specifically indicated in the treatment of *Shitada*." [19]

"*Dashansanskar Churna Pratisarana*, administered in both powder and paste forms, has been found to be highly effective in the management of *Shitada*." [20]

Previous clinical studies indicate that local Ayurvedic therapeutic procedures, particularly *Pratisarana* using formulations such as *Bhadramustadi Choorna*, *Nagaradi Kwatha Gandusha*,²¹ *Dashana Samskara Choorna*, *Lodhradi Choorna* and *Shothahara Mahakashaya*²² produce significant clinical improvement in the management of *Shitada* (Gingivitis) [21,22]

Similarly, *Gandusha* (oil or decoction retention therapy) has been extensively evaluated for maintaining periodontal health. Formulations such as *Sahacharadi Taila*, *Irimedadi Taila*, *Triphala–Sphatika Jala*, and *Nagaradi Kwatha* have shown promising outcomes in reducing gingival inflammation, halitosis, plaque accumulation, and microbial load.

Text Yoga Ratnakara, a complete treatise on Ayurveda, indicates the management of *Shitada* under *Mukh Rogadhikar*, the diagnosis and treatment of oral diseases. The text recommends that, following *Raktamokshana*

(bloodletting), lukewarm *Gandusha* prepared with *Sunthi* and *Parpata* should be performed repeatedly to promote healing.

Text advises the use of a decoction containing *Nagara* (*Sunthi*), *Sarshapa* and *Triphala* for *Gandusha* after bloodletting as an effective therapeutic measure in the management of *Shitada*. [23] Furthermore, *Pratisarana* (local application) of a powder comprising *Kasisa*, *Lodhra*, *Krishna*, *Manashila*, *Priyangu*, and *Tejovati*, mixed with honey, is indicated to arrest the degeneration of gingival soft tissues associated with the disease. [23] In addition, the text instructs the use of *Vata*-pacifying medicated oils and *Ghrta*, considering them beneficial in the comprehensive management of *Shitada*. [23]. ChakraDatta advocates formulation as *Nagaradi Gandusha*, *Priyangwadi Lepa*, *Kusthadi Churna Pratisarana*. [24].

According to Vrinda Madhava or Siddha Yoga, the management of *Shitada* includes *Raktavisravana*, followed by *Gandusha* with a decoction of *Nagara*, *Sarshapa*, and *Triphala*, and *Pralepa* using *Priyangu*, *Musta*, and *Triphala*. Additionally, *Pratisarana* with powder containing *Kustha*, *Darvi*, *Lodhra*, *Abda*, *Samanga*, *Patha*, *Tikta*, *Tejini*, and *Pitika* is advised to control gingival bleeding, itching, pain, and inflammation. [25] In Sushrut Samhita advised for management of *Shitāda* that after blood-letting, decoction of *Sunthi*, *Sarsapa* *Triphalā*, *Musta* and *Rasañjana* should be used as gargle. Combination of *Priyangu*, *Mustā* and *Triphala* is applied locally while oil (or ghee) cooked with triphala along with *Madhuka*, *Utpala* and *Padmaka* should be used as snuff. [26] In association of kapha, oil cooked with *Triphala* etc. should be used while in that of *Rakta ghrta* is useful. [26]

Acharya Dalhana writes on commentary of Susrut Samhita that After performing *Śonitāvasechana*, *Śodhana Gandusha* should be undertaken, followed by *Gaṇḍūṣa*. If the condition is associated with *Pitta* and *Vāta* involvement (*Pitta–Vātānubandha*), *Snehana Nasya* should be administered. In cases where the disease is predominantly associated with *Kapha* (*Kaphānugata Roga*), *Nasya* should be performed using *Taila* processed with *Madhūka* (*Yaṣṭimadhu*) and *Triphala*. When there is marked involvement of *Rakta* (*Śonitānugama*), *Nasya* should be administered with *Triphala Siddha Ghṛita*. [27]

CONCLUSION:

Standard treatment protocols include patient education, meticulous tooth brushing with medicated toothpaste, interdental cleaning using dental floss or interdental brushes, professional scaling and root surface debridement when indicated, plaque-control measures, antimicrobial mouth rinses, periodic oral health checkup and modification of risk factors including tobacco use, poor dietary habits, and uncontrolled systemic conditions. Early diagnosis and regular periodontal evaluation are also essential to prevent the progression of gingivitis to periodontitis.

Ayurvedic management of *Shitada* (gingivitis) adopts a comprehensive approach by correcting *Dosha* imbalance, *Nidana Parivarjana* (eliminating etiological factors) and employing both systemic and local therapeutic measures. Procedures such as *Pratisarana*, *Gandusha*, and *Kavala*, supported by appropriate diet and oral hygiene, effectively reduce gingival inflammation, bleeding, plaque accumulation, and halitosis while promoting gingival healing. Classical Ayurvedic principles, together with encouraging evidence from contemporary clinical studies, suggest that these interventions offer a safe, holistic, and effective strategy for the prevention and management of gingivitis. However, further well-designed, large-scale clinical trials are needed to strengthen the evidence base and support their wider integration into periodontal care.

Furthermore, increasing public awareness regarding oral hygiene practices, regular dental check-ups, and early Ayurvedic intervention can substantially reduce disease burden and improve long-term periodontal health.

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