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Newer therapeutic modalities for managing oral desquamative gingivitis.

[1]Krishna Priya Balachandran, Lecturer, Periodontology, Faculty of Dentistry, AIMST, Kedah, Malaysia, Lecturer, Oral and Maxillofacial Surgery, Faculty of Dentistry, AIMST, Keadh, Malaysia.

[2]Mahalakshmi Marudhai, Lecturer, Periodontology, Faculty of Dentistry, AIMST, Kedah, Malaysia, Lecturer, Oral and Maxillofacial Surgery, Faculty of Dentistry, AIMST, Keadh, Malaysia.

Corresponding Author: Krishna Priya Balachandran, Lecturer, Periodontology, Faculty of Dentistry, AIMST, Kedah, Malaysia, Lecturer, Oral and Maxillofacial Surgery, Faculty of Dentistry, AIMST, Keadh, Malaysia.

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Abstract

The desquamative gingivitis is a clinical term used to describe an erythematous gingiva, desquamation, and erosion of the gingival epithelium, and the development of blisters. Desquamative gingivitis (DG) is a manifestation of a number of mucocutaneous disorders. Due to the enigmatic nature of the disease's origin, the management of DG has proven to be a significant challenge. This review article focus on the newer therapeutic modalities for the management of oral desquamative gingivitis.

Keywords: Desquamative gingivitis, Mucocutaneous diseases, Alo vera, Oral lichen planus Hyaluronic acid, Selenium, Low-level laser therapy, Matrix metalloproteinases.

Introduction

Desquamative gingivitis is a gingival manifestation of mucocutaneous disorder. Painful, erythematous, glossy, friable, and hemorrhagic gingiva is one of its distinguishing features[1]. Desquamation is a medical term that can be defined as "loss of epithelial elements in small and large amounts, skin peeling, and exfoliation.".

Erythematous gingiva, desquamation and erosion of the gingival mucosa, and blister development are the hall marks of desquamative gingivitis [2,3].

Instead of a specific pathologic entity, desquamative gingivitis is thought to be a clinical sign of some mucocutaneous illnesses[4].There may be no complaints from the patient or there may be a burning feeling or excruciating pain.

Chronic pain is a common problem that is exacerbated by eating acidic foods. Additionally, pain-related speech problems and limitations of oral function can be seen[5,6].

On the basis of a thorough history and clinical examination, light microscopic inspection of gingival biopsy specimens, immuno pathologic results, and

follow-up observations, a diagnosis of the underlying condition causing chronic desquamative gingivitis can be made[7] .Despite the existence of numerous therapeutic agents that promise to lessen severity, desquamative gingivitis cannot be fully treated with any one intervention.

Improved oral hygiene practises and intensive topical and systemic corticosteroid treatment are typically used to treat gingival lesions. The management of gingival lesions involves increasing dental hygiene and applying topical corticosteroids. A doctor should be consulted about the situation if there is a systemic disease present. Approximately 2% of people have lichen planus. In between 10% and 40% of instances with oral lichen planus have cutaneous lesions. Lichen planus can manifest in reticular, Papular, bullous, erosive, and plaque-like forms. Lichen planus is typically discovered by routine examination, and it rarely exhibits symptoms. In the more severe cases, the patient will seek for treatment to reduce the uncomfortable pain symptoms[8]. This review article focus on the newer therapeutic modalities for the management of oral desquamative gingivitis.

Aloe vera

One of the most recent OLP management options is aloe vera (AV). AV is a tree recognised for its curative qualities. It has a variety of active ingredients, including vitamins (A, C, and E), amino acids, enzymes (brady kinase), minerals, sterols along with other fatty acids, and salicylic acid, which give the plant its therapeutic effects.

AV has analgesic qualities, an anti-inflammatory effect by blocking the cyclooxygenase pathway, decreases pro stag Landin E2 production while also destroying bradykinin, and finally, it has an impact on the immune system by either blocking mast cell release of histamine and leukotrienes or activating the release of nitric oxide and cytokines from macrophages. It has been demonstrated that using aloe vera in the form of a solution for four weeks of therapy is successful in treating the OLP's clinical symptoms and signs[9].

Hyaluronic acid

Hyaluronic (HA) acid applied topically was used to cure OLP lesions. In patients with erosive OLP, a randomized, placebo-controlled, double-blind trial assessed the effectiveness of a topical HA gel preparation (0.2%).

The study's findings demonstrated a substantial decrease in soreness scores for up to 4 hours after application when compared to the placebo. There was no discernible difference in lesion size between the therapy groups, but there was a significant decrease in lesion size when compared to baseline after 28 days of treatment.

The authors advise using topical HA gel frequently as an effective addition to the treatment choice for OLP[10].

Propolis

The sticky, resinous substance is gathered by honey bees from the sap, leaves, and buds of plants and combined with beeswax and propolis are produced. It has a variety of therapeutic properties, including antioxidant, anti-inflammatory, antibacterial, antiviral, antifungal, and antitumor effects[11].

A third "T helper" subgroup that is crucial to the body's defence against extracellular pathogens has recently been identified. This T cell subset regulates immune and inflammatory reactions by secreting cytokines like Interleukin 17.

In a study by Zenouz et al., it was proven that propolis administration significantly decreased IL-17 serum levels, AS score, and the size of the lesion in patients with symptomatic OLP[12].

Purslane

It is a herbaceous weed contains a variety of biologically active substances such as carotene, melatonin, omega-3 fatty acids, and vitamins A, C, and E. it has anti-in flammatory, anti – ulcerogenic, anti-fungal, and anti-oxidant properties[13].

F. AGHA-HOSSEINI et al., done a study and evaluated the efficiency of the antioxidant-rich purslane in treating oral lichen planus. (OLP). The research revealed a significant difference in the clinical outcomes between patients who received purslane and those who received a placebo, including a reduction in the size of lesions and a change from erosive to atrophic or reticular forms. This shows a quick and noticeable beneficial impact in reducing OLP-related symptoms[14].

Vitamin d

The immune system cells like T and B cells contain vitamin D receptors (VDRs), this supports the importance of vitamin D in immunity. According to a pilot study, patients who received vitamin D supplements along with or without psychological counselling in addition to topical steroid application for a brief period of time showed statistically significant improvements in their subjective and objective symptoms[15].

Selenium

Selenium (Se), a vital trace element with an antioxidant effect that occurs naturally in humans, fights oxidative stress, slows down aging, and prevents viral infections in addition to being crucial for the regulation of the immune system, metabolism, and chemoprevention.

Two Se forms (novel topical hydrogel and oral pills) for treating erosive OLP were assessed in a randomised controlled clinical study. Three sets of patients were assigned: group I received topical corticosteroids, group II received topical se, and group III received systemic se. There were six weeks of treatment. In reaction to all treatment modalities, a reduction in signs and symptoms was found. Selenium showed some benefits over topical corticosteroids, including a more persistent effect, effective pain relief, and no secondary infection[16].

Low-level laser therapy (LLLT)

PBM is a procedure that uses a continuous laser or light-emitting diode (LED) with a wavelength of 600 to 1000 nm to reduce inflammation, analgesia, and/or stimulate tissue repair. It has benefits over existing OLP therapies, including non-invasiveness and reduced side effects.

When used on oral tissues with the impact of bio stimulation, low level laser therapy (LLLT) speeds up wound healing. Without causing any negative side effects, laser serves to stimulate cells ‘and helps in re generation. By enhancing keratinocyte proliferation, it can helps in epithelization[17].

The use of low-level laser therapy (LLLT) for the treatment for OLP has been suggested. OLP lesions are treated using helium-neon, ultraviolet, and diode lasers with a variety of output powers, doses, irradiation durations, and session counts[18].

TNF-alpha (also known as tumour necrosis factor) is believed to be crucial to the aetiology of MMP. It has been demonstrated that LLLT lowers the amount of TNF-. alpha. According to Cafaro et al., LLLT applied to the oral mucosal surfaces of MMP patients quickly relieves their discomfort[19].

Puva therapy

PUVA therapy or photochemotherapy, which requires local or systemic application of the photosensitizer psoralen, is effectively used in the treatment of skin LP. PUVA therapy was used in a OLP patients and the result showed that the 87% of OLP patients who were exposed to UVA rays without the use of systemic or topical photosensitizers showed a substantial improvement. A

controlled study's findings demonstrated the efficiency of PUVA therapy combined with systemic psoralen administration in the management of severe types of OLP[20].

PRF

Injectable platelet concentrates (i-PRF) have shown promise results in patients with OLP in recent platelet concentrate studies. i-PRF showed a good result with the resolution of the lesion, because of the angiogenesis, immunomodulation, and the ability of i-PRF to produce growth factors that aid in wound healing[21].

Free gingival graft

Free gingival grafts have been used effectively in lichen planus patients to support marginal dental soft tissues and prevent recession [22]. The use of free gingival grafts in the treatment of oral lichen planus patients with desquamative gingivitis is an aggressive therapy, but it is more successful, has fewer side effects, and is more stable (as the main advantage) than topical or systemic steroids. Okuda et al used an autologous grafting substance to regenerate gingival tissue in the maxillary left and mandibular right quadrants in a patient with chronic desquamative gingivitis. In both of the treated regions, improvements in keratinized gingiva were seen six months after surgery, and there were no occurrence of gingival inflammation[23].

Reflexo-therapy

The literature also describes the use of reflexology in the treatment of symptomatic OLP. The authors emphasise the high analgesic effect of the applied therapy and many treatment models that speed up the epithelization of erosive lesions and ulcerations on the buccal mucosa[24].

Intravenous immunoglobulins

IVIg therapy considered as another option for management of MMP patients with rapidly disease progression or those who did not respond to previous treatments. It is not the first-line therapy but could be used as the adjuvant therapy in patients with mentioned conditions. Over the last decade, there has been increased use of IVIg in the treatment of autoimmune diseases[25].

Antioxidants

Since some of these desquamated lesions are the result of oxidative damage, antioxidants can halt or slow down the chain reaction that results in the oxidation of oxidizable substrate. Extracts of Mangifera indica, Withania somnifera, Daucus carota, Glycyrrhiza glabra, Vitis vinifera, powders of Emblica officinalis and Yashada bhasma, and oils of Triticum sativum are included in the composition of the oxitard capsules (Himalaya Drug Company). The content act as an immunomodulator, stimulator of antioxidant enzymes, free radical scavenger, astringent, supplier of vitamins A and C, powerful antibiotic, and aid in protein synthesis, cell division, and wound healing. The same drug formulations have antioxidant and anti-inflammatory qualities helps to be used successfully to treat oral submucous fibrosis[26].

Cryosurgery

A portable unit can be used successfully for the treatment of benign and tiny superficial lesions with foci of dysplasia, despite not being able to reach the same tip temperatures as the larger units. Additionally, recent research on the use of cryosurgery to treat dysplastic lesions of the oral cavity suggests that the host's immune system is stimulated by freezing, leading to increases in both IgG and IgM levels. Cryosurgery is a desirable way of treatment for erosive lichen planus due to the risk of (although remote) malignant transformation[27].

Discussion

Desquamative gingivitis is seen more in females than males and most cases appears after 30 years of age,

however they can start as earely as puberty. The condition is persistent with remission and exacerbation intervals, the gingiva may recover after a few months or regretably, DG might last for years. The management of DG patients does not have a set methodology for care. Depending on the doctor's preferences, the patient's age, the disease's severity, and the affected site, several treatment approaches are used. Plaque-induced gingivitis may make the condition worse or hasten its progression, so it is important to educate and motivate the patient. Using a soft-bristled toothbrush and practising good oral hygiene will help to reduce the patient's discomfort. In order to diagnose and treat DG in the setting of pemphigus vulgaris, bullous pemphigoid, cicatricial pemphigoid, or lichen planus, a multidisciplinary approach is required. This includes meetings with dermatologists, oral medicine specialists, and dentists[28].

Conclusion

It's crucial to emphasise both the related oral lesions and all of the clinical characteristics that desquamative gingivitis may have. In order to properly treat the underlying pathology in such patients, a routine oral cavity examination is important. For the purpose of making an accurate early diagnosis and recommending an immediate course of action that will produce a favourable outcome, a thorough clinical examination, an assessment of the patient's history, a full blood count, biochemical testing, as well as biopsies, are required. Effective treatment of these patients can reduce the adverse effects, improve the patient's prognosis, and improve their quality of life.

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