ASSOCIATION BETWEEN SYSTEMIC THERAPIES FOR ACNE AND ORAL HEALTH: A LITERATURE REVIEW

Hasmik A. Manukyan[1] *, Hayk M. Sargsyan[1], Hasmik R. Kostandyan[2], Rshtun K. Babayan[3], Lusine K. Muradyan[1]

[1]Avdalbekyan National Institute of Health, Ministry of Health, Yerevan, Armenia
[2]"My City Dentist" Dental and Cosmetic Center, Yerevan, Armenia
[3]Center of Medical Genetics and Primary Health Care, Yerevan, Armenia

*Corresponding Author: dr.hasmikmanukyan@gmail.com
DOI: 10.54235/27382737-2025.v5.2-02
Ներկայացվեց/Received 06.04.25: Գրախոսվեց/Reviewed 20.11.25: Ընդունվեց/Accepted 20.11.25:

ABSTRACT

Background: Systemic medications for acne treatment possess greater efficacy than topical preparations, therefore they are prescribed for patients with severe or extensive inflammatory acne. Systemic therapies include retinoids, oral antibiotics and hormonal therapy. Although each of these treatment modalities offers various benefits in managing severe acne, it is important to be aware of their potential side effects, including the ones affecting oral health. Despite extensive research on acne treatments and oral health independently, there is a notable gap in the literature regarding their combined effects.

Aim: To explore and discuss the possible pharmacological associations between systemic acne therapies and oral health.

Methods: A comprehensive literature search was performed using MEDLINE, PubMed, EBSCO, and the Cochrane Library databases to identify studies published after 1982 investigating the possible link between systemic acne therapies and their oral manifestations.

Results: The awareness of probable oral manifestations such as xerostomia, gingivitis, periodontitis, alveolar bone loss, candidiasis, increased risk of caries, and other reported alterations is of great importance. Thus, a multidisciplinary approach is needed for acne patients' management. Dermatologists can inform patients requiring long-term systemic therapy about potential oral signs and symptoms that may occur when taking new medications and the importance of careful monitoring and regular dental checkups to identify, assess and manage potential dental and periodontal issues to ensure a balance between therapeutic benefits and possible adverse effects. Furthermore, dental practitioners should take a thorough medical history and be aware of medication-related oral changes and their potential effects on diagnosis and treatment planning.

Conclusion: Collaboration between dermatologists and dental specialists is essential to identify, monitor and adequately treat oral complications associated with systemic therapies for acne.

Keywords: *acne treatment, acne medication, systemic acne therapy, oral health*

INTRODUCTION

Acne vulgaris, known as acne (originates from the Ancient Greek word akmḗ (ἀκμή), meaning "point" or "peak"), is one of the most common chronic inflammatory skin diseases, typically involving face, neck, upper torso and shoulders. Although most of the acne cases are seen among teenagers and young adults, it can be manifested at any stage of life with a progressive reduction in prevalence with increasing age. Acne may appear in several lesions, such as whiteheads, blackheads, pustules, papules and nodules. In severe cases, it includes large, painful nodules filled with pus, called cystic acne. The disease has various forms and symptoms, and most patients may have a combination of different lesion types, hence, sometimes it can be difficult to determine the severity. Understanding acne severity is essential for effective management. Clinically, acne is classified as mild, moderate, or severe, depending on the number and type of lesions. Mild cases are mainly comedonal, moderate forms show more inflammatory papules and pustules, and severe acne is characterized by nodules or cysts with a tendency for scarring [1,2]. Typically, acne is not associated with significant physical comorbidity, but almost all patients have some impact on their psychological status and quality of life, therefore, a multidisciplinary approach of care is needed [3].

Risk factors for acne include genetics, hormonal changes, certain medication, age and oily skin type. Additionally, factors such as stress, weather, diet and skin scrubbing can make it worse, though they directly do not cause acne. Major pathogenic factors are andro-

gen-induced sebum production, follicular hyperkeratinization and immunologic hypersensitivity to Propionibacterium acnes (now Cutibacterium acnes) [4]. Given its multifactorial pathogenesis, treatment often requires combined approaches targeting different mechanisms. Among them, benzoyl peroxide (BPO) is a key component, as it provides strong antibacterial activity against Cutibacterium acnes and helps reduce the emergence of antibiotic resistance when used alongside topical or systemic antibiotics.

Ideal treatment for acne does not exist, but for most patients, a suitable therapy for lesions reduction can be found. Since acne is a multifactorial disease, different therapeutic agents are targeted for treatment purposes. Typical targets include comedo formation, androgen production, sebaceous gland activity, C. acnes levels, or the inflammatory and immune response. Generally, the most successful treatment approach is to simultaneously attack two or more targets, one of which is usually the comedo [5].

Treatment options available for acne therapy include topical and/or systemic preparations. Topical therapies are the primary method of acne treatment. They may be used alone or in combination with other topical or oral agents. Commonly used medications are topical retinoids, BPO, antibiotics, salicylic acid and azelaic acid [6]. Systemic therapy possesses greater efficacy than topical preparations and is therefore prescribed to patients with severe or extensive inflammatory acne. Systemic medication includes retinoids, oral antibiotics, and hormonal therapy. For patients with severe inflammatory acne, a combination regimen is typically used, including oral antibiotics with topical BPO to reduce the number of antibiotic-resistant organisms [7].

Due to the variety of treatment approaches available, it is important to individualize acne care based on the potential treatment benefits and risks, thus requiring shared decision-making [8].

While acne treatment is effective with the listed medications, they can also lead to side effects that extend beyond the skin and may impact oral health. Several reviews have been published on the side effects of common acne treatments; however, most reviews did not report experimental data on the effects of medications on oral health [9-14]. Some of them mention dry mouth symptom as a possible side effect due to decreased salivary flow [15]. The importance of saliva in maintaining oral health is widely recognized. In addition, it plays a vital role in caries development and bacterial plaque formation. Numerous physiological and pathological factors can affect salivary flow, and such variations have an impact on oral cavity [13,16]. Nevertheless, oral health is a critical component of overall well-being, and information on the effects of acne medications on oral health is lacking. These data are important for dermatologists and dental specialists when communicating with patients and for shared decision-making.

Despite extensive research on acne treatments and oral health independently, there is a notable gap in the literature regarding their combined effects. Therefore, this literature review aims to explore the pharmacological impacts of severe acne medications on oral health.

METHODS

A comprehensive literature search was performed using MEDLINE, PubMed, EBSCO, and Cochrane Library databases to identify studies published from 1982 to 2024. The search strategy was peer-reviewed by another team member using the PRESS (Peer Review of Electronic Search Strategies) checklist. Only studies published in English were included. Clinical studies were considered if they discussed oral or dental effects of systemic acne medications such as isotretinoin, antibiotics, or hormonal agents. Case reports, conference abstracts, and studies focusing solely on topical therapies without systemic intervention were excluded. Relevant reference lists were also screened to identify additional studies.

RETINOIDS

Retinoids are synthetic derivatives of vitamin A and are commonly used in the management of severe acne. They affect the growth and differentiation of epidermal cells, also interfering with sebaceous gland activity and possess immunomodulating and anti-inflammatory properties. Several compounds of retinoids are used in topical and/or systemic form. The most common systemic form of retinoids is isotretinoin (13-cis-retinoic acid) [17,18]. It is highly effective for moderate to severe acne treatment, as it acts on virtually all acne factors and offers long-term remission and sometimes complete cure [7]. Despite its efficacy, isotretinoin therapy is associated with adverse side effects, the most severe of which is teratogenicity [19,20]. Furthermore, systemic retinoids are well known to cause dryness of the mouth and changes in oral and lip mucosa [18]. Moreover, research evidence shows that isotretinoin can cause vitamin B12 (cobalamin) and vitamin B9 (folate) deficiency anemia, causing adverse effects on oral mucosa [21].

Effects on Saliva Flow, Buffer Capacity and Decay Status

Dry mouth is a common complaint that may be caused by several conditions. Xerostomia, hyposalivation and altered saliva composition are separate entities of salivary gland hypofunction, which in many respects are interrelated. Most authors agree that xerostomia and hyposalivation are two separate entities, with xerostomia denoting a subjective feeling of oral dryness and hyposalivation an objectively measured reduction in salivary flow

rate (SFR) [22]. In patients receiving medication, hyposalivation is often mild to moderate, it may develop within weeks to months of treatment, and in many cases it is reversible after discontinuation of the drug [4]. Several clinical studies demonstrate that isotretinoin adversely affects salivary flow and buffer capacity, it has a strong potential to reduce salivary flow, and its systemic administration leads to the drying up of various oral and non-oral structures [18]. Oikarinen et al. (1995) in their controlled trial of acne treatment with isotretinoin for an average of 3 months showed a statistically significant but modest decrease in SFR (p=0.0277) without any accompanying change in salivary pH. Although this reduction in salivary secretion reached statistical significance, the magnitude of change was small and unlikely to have major clinical consequences or lead to irreversible tooth decay. The authors also reported a transient increase in matrix metalloproteinase-9 activity during treatment, suggesting temporary alterations in salivary composition rather than lasting dysfunction [23]. Lupi-Pégurier et al. (2007) concluded that patients treated with isotretinoin experienced oral side effects. Compared with healthy controls, after 6 months of isotretinoin use, the DMFT index (Decayed, Missing and Filled Teeth) increased and the SFR gradually decreased. The changes were not clinically significant, and the baseline SFR recovered after 2 months of the end of the treatment [24]. On the other hand, the authors found unfavorable effects in patients who used the medication for 8 months. The study found increased rates of caries, especially on the buccal, palatal, or both surfaces, and the presence of light to moderate calculus on the teeth, consistent with increased bacterial counts and decreased SFR. Bacterial tests for Streptococcus mutans increased during isotretinoin treatment, while no significant difference was observed for Lactobacillus. Starting from the third month of isotretinoin use, patients noted the appearance of stains on their teeth, dry mouth and lips. Moreover, there was an increase in the DMFT index. In addition, buffering capacity gradually decreased, but it was not clinically relevant [25]. Örsal et al. (2015) evaluated the salivary gland function by radionuclide imaging at the third and sixth months. Results showed significant decreases in the salivary gland functions of patients using isotretinoin at months 3 and 6 compared to pretreatment values [26]. Another study also confirmed the previous finding that isotretinoin affected salivary flow, buffer capacity, and caries lesion activity scores. Also, at the end of the sixth month, bacteriological analysis showed that isotretinoin use had no significant effect on intraoral pathogen microorganism counts and salivary parameters did not correalate with potential caries lesion activity [27].

Effects on Periodontal Tissue

It has been reported that, besides the impact on SFR, isotretinoin has anti-inflammatory influence on periodontal biomarkers and positively affects periodontal diseases and gingivitis. Anti-inflammatory properties relate to isotretinoin's ability to inhibit the action of the specific group of enzymes that are responsible for the degradation of most extracellular matrix proteins during organogenesis, growth and normal tissue turnover. In the gingival crevicular fluid (GCF) and saliva, the most widely investigated matrix metalloproteinases (MMPs) are MMP-8, MMP-9, and MMP-13 [28]. Collagenases, especially MMP-8, and gelatinases, especially MMP-9, are used as markers of active periodontal destruction and disease activity in GCF, saliva and serum [29-31]. It is believed that MMP-8 and -9 are primarily responsible for collagen degradation in the inflamed tissue during the progression of periodontal diseases [32]. The destroying activity of MMPs can be controlled by inhibiting their action, which can be mediated by the 4 members of the tissue inhibitor of metalloproteinase (TIMP) family [33]. Isotretinoin use was positively correlated with an elevation of salivary TIMP-1 and TIMP-2, which are responsible for regulating the extracellular activity of MMPs. While biomarker shift suggested reduced inflammatory activity, current evidence indicated that changes in MMP/TIMP balance are modest and may not consistently translate into measurable periodontal improvement [28].

Effects on Gums

Although the exact pathophysiology by which isotretinoin causes gingivitis has not been determined, it is probably related to the different pharmacological effects of retinoids due to their significant impacts on DNA transcription. Retinoids work by binding to nuclear retinoid receptors that are part of a group of nuclear DNA transcription factors, including steroids, vitamin D, and thyroid hormone receptors. Thus, retinoids function as hormones by altering DNA transcription, resulting in a wide range of molecular events [34,35].

A prospective case-control study by Numair et al. (2022) showed poor gingival health and higher plaque levels in patients treated with isotretinoin compared to those not taking it. These findings contradicted the results of previous study. Due the significantly high plaque level, the reason of gingival inflammation could not be identified – whether it was related to isotretinoin or the elevated plaque levels. It should be noted that this study had several limitations, one of which was that clinical parameters such as SFR, the presence of faulty restorations, malalignment, oral hygiene practices, smoking status, and nutritional status were not analyzed, thus, this finding may have been biased [36].

Antibacterial Effect

Besides its anti-inflammatory properties, isotretinoin also has antibacterial activity. It has been found to have an antibacterial effect on facial sebum. Papakonstanti-

nou et al. (2005) examined the impact of isotretinoin on periodontal pathogens in the oral cavity [37]. Although the antibacterial mechanism of isotretinoin action is unknown, all the groups taking medicine showed significantly lower levels of Porphyromonas gingivalis, Tannerella forsythia, Treponema and higher levels of Fusobacterium nucleatum. A noticeable antimicrobial effect on the number of periodontal pathogens was demonstrated in patients with plaque-induced gingivitis and chronic periodontitis. Anyway, this study also had limitations [38].

ANTIBIOTICS

Systemic antibiotics have been extensively used to treat acne, typically moderate to severe, as well as inflammatory acne where topical agents have been ineffective. To maintain results after antibiotic treatment, BPO or retinoid should be used. The most common classes of antibiotics intended for acne treatment are tetracyclines and macrolides. The main mechanism of action of antibiotics in acne is reduction of the number of bacteria (including Cutibacterium) on the skin surface and in follicles, as well as anti-inflammatory action. The commonly used oral tetracycline-class antibiotics are doxycycline, minocycline, and sarecycline. This class of antibiotics is contraindicated in pregnancy, lactation, and during tooth development in children under 9 years of age, since repeated exposure may cause permanent enamel hypoplasia or discoloration. Severe adverse effects of systemic antibiotics in persons treated for acne are uncommon [39].

Discoloration Effect

One of the side effects of tetracyclines is their incorporation into calcifying tissues during administration. They chelate calcium ions and integrate into teeth, cartilage, and bone. As a result, we have discoloration of both the primary and permanent dentitions. This permanent discoloration is dose-dependent and varies from yellow or gray to brown. Minocycline hydrochloride, a long-acting semisynthetic tetracycline derivative often used to treat acne, has been shown to cause pigmentation of a variety of tissues, including the skin, thyroid, nails, sclera, teeth, conjunctiva, and bone. Adult-onset tooth discoloration following long-term ingestion of tetracycline and minocycline has also been reported. Higher cumulative doses may contribute to gradual discoloration of fully erupted adult dentition [40]. Minocycline is capable of inducing melanosis in skin and oral mucosa, although the nature of the reaction is not clear. Biopsy findings may reveal increased melanin deposition or the presence of hemosiderin and iron or a metabolic degradation product of minocycline in the tissues [11]. A remarkable oral side effect of minocycline is a greenish-black discoloration of osseous tissue, which may resemble bluish-gray discoloration of the gums, black or green roots, and blue-gray to gray hue darkening of the crowns of permanent teeth [11,41].

Effects on Periodontal Tissue

Tetracyclines have been used in the treatment of localized juvenile, generalized juvenile, early onset and adult periodontitis [42]. Minocycline is common in periodontal therapy, as it is effective against some putative periodontal pathogenic microorganisms [11]. Lindhe et al. (1983) have found that in patients with advanced periodontal disease, long-term tetracycline therapy in the absence of scaling resulted in the establishment of a subgingival microbiota almost devoid of motile bacteria and in markedly reduced signs of gingivitis, probing depth and attachment loss [43].

Apart from antibacterial activity, tetracycline also has anti-collagenase property, which is significant for periodontal disease management [42].

Effects on Gums

Erythromycin has also been implicated in gingival enlargement. The increased overgrowth of gingival tissue is related to the disruption of the degradation of collagen, which leads to a larger amount of extracellular collagen tissue within the gums.

Effects on Decay Status

Antibiotic exposure may potentially affect the pathogenesis of dental caries both directly via the oral microbiome and indirectly via contributing to enamel defects. Several studies showed a relationship between antibiotic exposure and enamel defects. In contrast, the data on newer antibiotic formulations and their association with dental caries and enamel defects are inconsistent [44].

Hormonal Therapy

Androgen hormones play a crucial role in acne development by altering the pilosebaceous unit, resulting in increased sebum production, keratinocyte proliferation, and inflammation. The highest prevalence is reached in adolescence because of androgen level alteration during puberty. In adults, acne may disproportionately affect women and individuals on testosterone therapy, with polycystic ovarian syndrome, or with menstrual-related flares. Thus, hormonal therapies used to treat acne treat act on androgenic activity reduction [7,45]. The primary hormonal agents in the severe acne treatment include combined contraceptive agents (estrogen and progestin), aldosterone receptor antagonists (spironolactone), oral corticosteroids (prednisolone and prednisone) and intralesional corticosteroids (triamcinolone) [8]. Indications for the use of antiandrogens in the treatment of acne include the failure of antibiotic regimens, the need for control of acne and menstruation, and finally, the

inappropriateness of oral isotretinoin. Corticosteroids play a limited role in acne management. They are primarily used for short-term control of acute nodulocystic or severe inflammatory flares, rather than for long-term therapy [7,9]. Sex hormones can modulate the inflammatory response of tissues, including periodontal tissues. The steroid hormones can indirectly modulate periodontal tissue because of the existing estrogen and progesterone receptors present in gingival keratinocytes and gingival fibroblasts of the periodontal ligament and in the lamina propria [46]. Estrogen can modulate collagen metabolism and angiogenesis, promote the increase in tissue glycogen production and reduce keratinization of the gingival epithelium, which subsequently causes a reduction in the epithelial barrier. Meanwhile, progesterone triggers vasodilation and increases endothelial permeability, altering the collagen-producing function periodontal ligament fibroblasts [47,48].

Oral contraceptives are commonly used to prevent pregnancy, but they can also be prescribed for acne treatment when indicated. Traditional oral contraceptives are a combination of estrogen and progestogen, and some research indicates that women taking traditional forms of oral contraceptives have an increased risk for gingival inflammation, dry socket, temporomandibular joint dysfunction, clinical attachment loss, and gingival hyperplasia. In contrast, a recent study suggested that combined oral contraceptives with the new formulation of lower levels of progesterone and estradiol do not affect periodontal health [49,50].

Most corticosteroid-associated systemic or oral effects, such as bone loss or increased risk of candidiasis, are derived from chronic use in non-acne populations. Short-term or low-dose use in acne is unlikely to cause similar adverse outcomes. However, despite their benefits, the use of hormonal agents can be associated with various systemic manifestations along with oral changes.

Effects on Saliva Flow and Dental Status

The suppressed salivary secretion tendency has been noticed in young adults with prescribed and applied long-term steroid anti-inflammatory drugs, especially inhaled steroids [51]. It has been reported that patients taking corticosteroids for a long time often suffer from lack of teeth or are characterized by caries-non-resistant dentition [52,53]. Some animal studies indicated a link between the use of corticosteroids and the condition of the dentin-pulp complex tissue. The suppression of blood circulation and disturbed nutrition of pulp are observed while using steroids [54].

Effects on Gums and Periodontal Tissue

Several studies have demonstrated a link between oral contraceptives and periodontal disease. Increased levels of estrogen and progesterone in the body associated with contraceptives may lead to periodontal disease, decreased bone mineral density, and dry socket. Both estrogen and progesterone are known to cause increased gingival exudation, swelling, and inflammation [48]. Mullally et al. (2007) observed increased probing depths in women actively using oral contraceptives [50]. Additionally, subjects taking oral contraceptives had a higher rate of biofilm retention, as well as increased gingivitis and bleeding upon probing, compared to those not taking birth control pills. Periodontitis was observed in 60% of women actively taking oral contraceptives [50,55]. Furthermore, women taking oral contraceptives were found to be more susceptible to advanced periodontal disease if they had preexisting gingivitis [56].

There are a limited number of studies with appropriate methodology to produce sound evidence about the association between corticosteroid use and periodontitis. However, there are two cohort studies that show an association between chronic corticosteroid use and the incidence of periodontal disease [57].

In addition to periodontal effects, long-term use of steroid therapy is also associated with an increased risk of developing gum diseases such as gingivitis. Safkan and Knuuttila (1984) confirmed the predisposition of patients taking steroids to gingivitis. It was concluded that the duration of corticosteroid application for 1 year or more is related to a greater degree of manifestation of clinical symptoms of periodontitis [58].

Discoloration Effect

Hormonal therapy may indirectly affect an increase in α-melanocyte-stimulating hormone, which may subsequently lead to oral or perioral pigmentation [59].

Effects on Bone

Studies have shown that prolonged corticosteroid use, particularly at high doses over months to years in non-acne populations, can lead to a significant decrease in calcium absorption and increased calcium loss from bone. Due to their impact on electrolyte and water balance, they affect the reabsorption of sodium and the excretion of potassium, calcium, and hydrogen ions. Long-term administration of corticosteroids can result in electrolyte imbalances such as hypernatremia, hypokalemia, hypocalcemia, and alkalosis. This causes a decrease in bone mineral density in the jaws, which may impact tooth stability and be a risk factor for tooth loss. Drug-induced bone loss is biphasic: an initial rapid phase of approximately 10–15% in the first few months and a subsequent slower phase of about 2–5% per year. Two major factors affect this process: the dose and duration of treatment. In addition, trabecular bone is affected more rapidly than cortical bone [61,62]. It is important to note that most of this evidence comes from chronic steroid therapy in populations treated for con-

Table 1. Oral effects of medications used in acne treatment

Drug class	Retinoids (Isotretinoin)	Antibiotics (Tetracyclines, Macrolides)	Hormonal Therapy (Contraceptives, Spironolactone, Corticosteroids)
Oral Effects	▶ Mild to moderate decrease in salivary flow ▶ Increased plaque and gingival inflammation (confounded by hygiene) ▶ Increased DMFT (Decayed, Missing and Filled Teeth) index ▶ Gingivitis ▶ Periodontal biomarker modulation ▶ Antibacterial effects	▶ Tooth discoloration ▶ Gingival pigmentation ▶ Gingival enlargement ▶ Periodontal improvement ▶ Reduced gingivitis and probing depth ▶ Enamel defects (inconsistent data) ▶ Altered oral microbiome	▶ Gingivitis ▶ Increased gingival probing depth ▶ Dry socket ▶ Salivary suppression ▶ Caries susceptibility ▶ Oral pigmentation ▶ Bone mineral density reduction (chronic corticosteroids) ▶ Candida overgrowth risk (systemic corticosteroids)
Evidence Type	Direct evidence from acne cohorts	Direct and extrapolated evidence	Mostly extrapolated from non-acne cohorts
Reversibility	▶ Mostly reversible post treatment (salivary flow and DMFT recovered within 2 months) ▶ No irreversible decay reported in short-term use	Discoloration is often irreversible, periodontal benefits and gingival changes vary	▶ Gingival inflammation may resolve post-therapy ▶ Bone loss and pigmentation often irreversible
Monitoring/ Management	▶ Salivary flow rate testing ▶ DMFT tracking ▶ Periodontal assessment ▶ Oral hygiene reinforcement ▶ Dental checkups every 3–6 months	▶ Avoid use in children <9 and during pregnancy/lactation ▶ Monitor for pigmentation and gingival changes ▶ Periodontal charting	▶ Periodontal screening for women on contraceptives ▶ Bone density monitoring in long-term steroid users ▶ Candida surveillance during corticosteroid therapy

ditions other than acne; short-term or low-dose corticosteroid use for acne management is unlikely to cause bone loss of similar magnitude.

Alveolar bone consistency may also be impaired by corticosteroids due to osteoporotic alterations related to reduction of osteoblasts and the amount of osteoid matrix. Parallel to the drug administration, a trend toward a decrease in alveolar bone height and fibrotic transformation of the periodontal space has been observed. It has been reported that women with osteoporosis may experience significant periodontal attachment loss without significant differences concerning gingival bleeding [60,63] However, such effects are primarily observed in patients chronically taking steroids or with preexisting osteoporosis, rather than in typical acne therapy regimens.

Microbial Effects

Corticosteroids can affect the normal balance of the microbial flora in the body, including the oral cavity, reducing microbial diversity and promoting the growth of certain pathogenic bacterial species. These changes in the oral microbiome may contribute to the emergence of oral conditions, such as gingivitis, periodontitis or candidiasis. Patients receiving corticosteroids must be monitored for secondary Candida infections. Candida is a genus of fungi commonly found in the oral flora of healthy individuals but can become pathogenic under certain circumstances. The risk of Candida infection is primarily associated with systemic or inhaled corticosteroid use, rather than with short-term or intralesional therapy. Systemic corticosteroids can compromise the body's immunity, including the local immune response in the oral cavity, promoting the growth of the fungus Candida albicans. Overgrowth may lead to the development of an infection, clinically manifesting as creamy, curdy, white-colored overgrowth on the inner skin of the lip, cheeks, gums, and tonsils, often accompanied by a burning sensation, pain, and discomfort [63,64]. Therefore, it is important that patients receiving corticosteroids be regularly monitored for early detection of signs and symptoms of Candida infection and initiate appropriate treatment in a timely manner.

Table 1 summarizes the effects of systemic acne medications on oral health, and Chart 1 presents the dental referral algorithm for systemic acne therapy.

CONCLUSION

Systemic therapies for acne, similar to other medications, can lead to direct and indirect side effects, which may also have oral manifestations. However, evidence specifically derived from acne cohorts remains limited, and most data on oral effects come from studies of the same drugs used for other medical conditions. On the contrary, retinoids, antibiotics, corticosteroids and contraceptives, when used for other medical conditions, have direct impact on the oral cavity confirmed by numerous studies. Thus, there is a possibility that the same medications used for acne treatment could produce similar symptoms such as xerostomia, gingivitis, periodontitis, candidiasis, increased risk of caries and other signs. The reasons for side effects are multiple, including medication dosage, duration of use and other individual

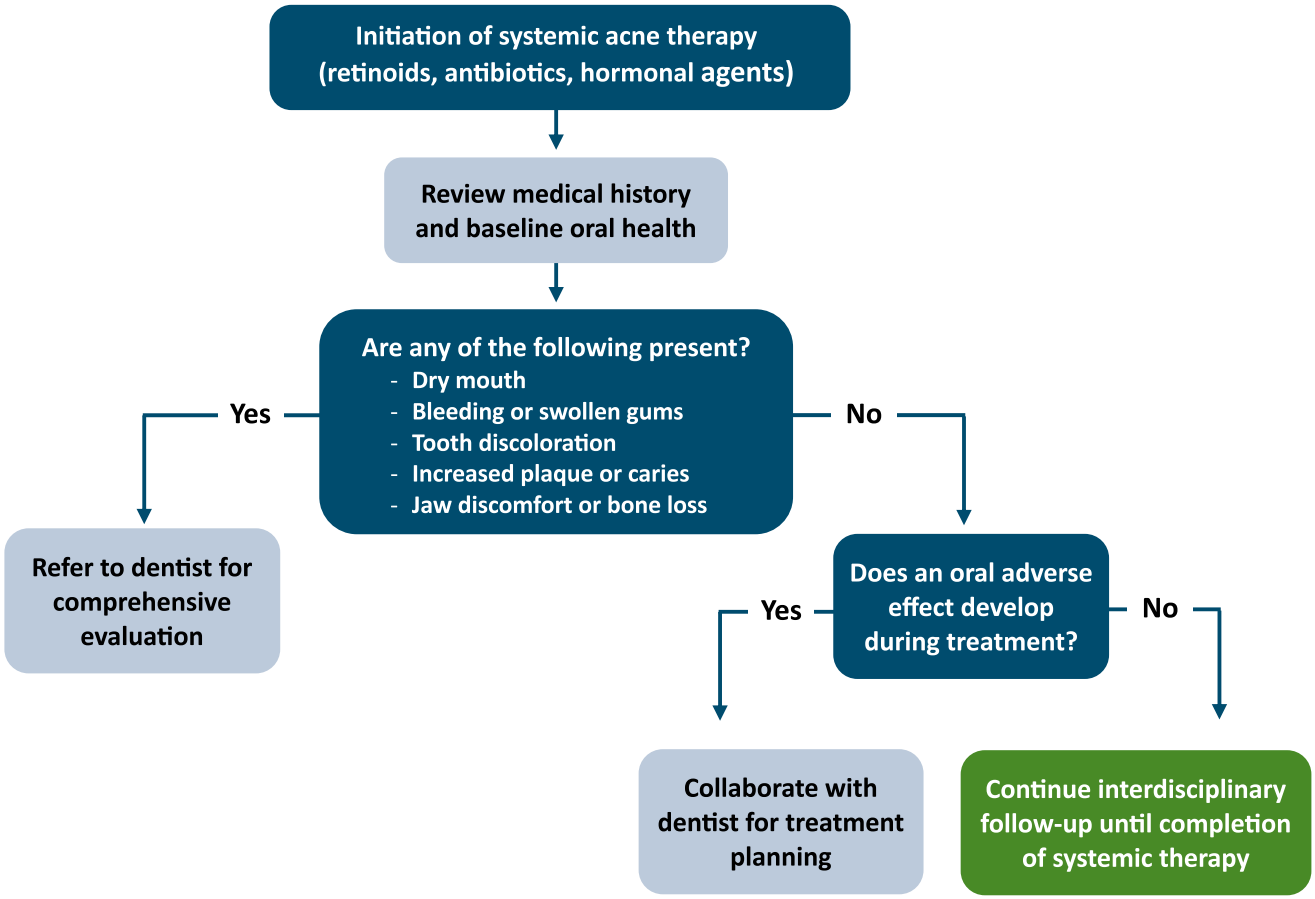

Chart 1. When to refer to dentistry during systemic acne therapy.

differences. Hence, awareness of possible oral side effects is essential for comprehensive care and will allow dermatologists and dental specialists to tailor treatment plans to meet the patient's individual needs.

When starting a new medicine, dermatologists can advise patients on what oral signs and symptoms to look out for.

Also, dental practitioners should take a thorough medical history and be aware of medication-related problems and their potential effects on diagnosis and treatment planning. In addition, it is important for patients who require long-term systemic treatment to receive careful monitoring and regular dental care to identify, assess and manage potential dental and periodontal issues to ensure a balance between the therapeutic benefits and adverse effects of systemic therapy.

To sum up, the collaboration between dermatologist and dental specialist is essential to identify and adequately treat oral complications associated with systemic therapies for acne.

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СВЯЗЬ МЕЖДУ СИСТЕМНОЙ ТЕРАПИЕЙ АКНЕ И ЗДОРОВЬЕМ ПОЛОСТИ РТА

ОБЗОР ЛИТЕРАТУРЫ

Асмик А. Манукян[1], Айк М. Саргсян[1], Асмик Р. Костандян[2], Рштун К. Бабаян[3], Лусине К. Мурадян[1]

[1]Национальный институт здравоохранения им. Авдалбекяна, МЗ РА, Ереван, Армения

[2]Стоматологический и косметический центр «Май сити дантист», Ереван, Армения

[3]Центр медицинской генетики и первичной охраны здоровья, Ереван, Армения

АБСТРАКТ

Введение: Системные препараты для лечения акне обладают большей эффективностью, чем местные средства, поэтому они назначаются пациентам с тяжёлыми или обширными воспалительными формами акне. Системная терапия акне включает ретиноиды, пероральные антибиотики и гормональную терапию. Хотя каждый из этих методов лечения приносит определённые преимущества в управлении акне, важно учитывать возможные побочные эффекты, включая влияние на здоровье полости рта. Несмотря на обширные исследования в области лечения акне и стоматологии отдельно, в литературе существует заметный пробел в изучении их комбинированного воздействия.

Цель: Изучение и обсуждение возможного фармакологического влияния препаратов для лечения акне на здоровье полости рта.

Методы: Был проведён комплексный поиск литературы в базах данных MEDLINE, PubMed, EBSCO и Cochrane Library с целью выявления исследований, опубликованных после 1982 года, в которых изучалось влияние системной терапии тяжёлых форм акне на состояние полости рта.

Результаты: Осведомлённость о возможных оральных проявлениях, таких как ксеростомия, гингивит, пародонтит, кандидоз, повышенный риск кариеса и другие признаки, имеет большое значение. Следовательно, для ведения пациентов с акне необходим мультидисциплинарный подход. Дерматологи могут информировать пациентов, которым требуется длительная системная терапия, о возможных оральных проявлениях при приёме новых препаратов, а также о важности тщательного контроля и регулярных стоматологических осмотров для выявления, оценки и лечения потенциальных стоматологических и пародонтологических проблем, обеспечивая баланс между терапевтическими преимуществами и побочными эффектами системной терапии. Кроме того, стоматологи должны тщательно собирать анамнез и учитывать проблемы, связанные с приёмом лекарственных препаратов, а также их возможное влияние на диагностику и планирование лечения.

Заключение: Сотрудничество между дерматологами и стоматологами необходимо для своевременного выявления и адекватного лечения оральных осложнений, связанных с системной терапией акне.

Ключевые слова: *акне, лечение акне, акне препараты, системная терапия, здоровье полости рта*

ԱԿՆԵԻ ՀԱՄԱԿԱՐԳԱՅԻՆ ԲՈՒԺՄԱՆ ԵՎ ԲԵՐԱՆԻ ԽՈՌՈՉԻ ԱՌՈՂՋՈՒԹՅԱՆ ՄԻՋԵՎ ԿԱՊԸ
ԳՐԱԿԱՆՈՒԹՅԱՆ ԱԿՆԱՐԿ

Հասմիկ Ա. Մանուկյան[1], Հայկ Մ. Սարգսյան[1], Հասմիկ Ռ. Կոստանդյան[2], Ռշտուն Կ. Բաբայան[3], Լուսինե Կ. Մուրադյան[1]
[1]ՀՀ ԱՆ Ավդալբեկյանի անվան Առողջապահության ազգային ինստիտուտ, Երևան, Հայաստան
[2] «Մայ սիթի դենթիստ» ստոմատոլոգիական և կոսմետիկ կենտրոն, Երևան, Հայաստան
[3]Բժշկական գենետիկայի և առողջության առաջնային պահպանման կենտրոն, Երևան, Հայաստան

ԱՄՓՈՓԱԳԻՐ

Ներածություն. Ակնեի բուժման նպատակով կիրառվող ներքին ընդունման դեղամիջոցներն ավելի մեծ արդյունավետություն ունեն, քան տեղային պատրաստուկները: Հետևաբար, համակարգային բուժամիջոցները ցուցված են ծանր ձևերի կամ տարածուն բորբոքային հանգուցիկների ու թարախաբշտիկների առկայության դեպքում: Համակարգային բուժամիջոցներից են ռետինոիդները, հակաբիոտիկները և հորմոնային դեղամիջոցները: Չնայած բուժման արդյունավետությանը՝ կարևոր է տեղյակ լինել տարբեր օրգան համակարգերի վրա, այդ թվում՝ բերանի խոռոչում, դրանց հնարավոր կողմնակի ազդեցությունների մասին: Գրականության մեջ առկա են առանձին վերցրած ակնեի բուժման և բերանի խոռոչի առողջության վերաբերյալ բազմաթիվ հետազոտություններ, բայց դրանց համակցված ազդեցությունն ուսումնասիրող հետազոտությունների քանակը սահմանափակ է:

Նպատակ. Ուսումնասիրել և քննարկել ակնեի ծանր ձևերի դեմ կիրառվող համակարգային դեղամիջոցների հնարավոր դեղաբանական ազդեցությունը բերանի խոռոչի առողջության վրա:

Մեթոդներ. Օգտագործելով ՄԵԴԼԱՅՆ (MEDLINE), ՓաբՄեդ (PubMed), ԷԲՍԿՕ (EBSCO) և Քոքրեյնի գրադարան (Cochrane Library) տվյալների շտեմարանները՝ իրականացվել է գրականության համապարփակ որոնում: Ընդգրկվել են 1982 թվականից հետո հրապարակված այն հետազոտությունները, որոնք ուսումնասիրել են ակնեի ծանր ձևերի բուժման նպատակով կիրառվող ներքին ընդունման դեղամիջոցների և բերանի խոռոչի դրսևորումների միջև հնարավոր կապը:

Արդյունքներ. Բերանի խոռոչում դեղամիջոցներով պայմանավորված հնարավոր կողմնակի դրսևորումների մասին իրազեկվածությունը մեծ նշանակություն ունի: Հնարավոր կողմնակի դրսևորուներից են քսերոստոմիան, լնդաբորբը (գինգիվիտը), կանդիդոզը, ատամնափուտի (կարիեսի) ռիսկի բարձրացումը և այլ նշաններ: Այսպիսով, բարդացած ակնեի բուժման համար անհրաժեշտ է միջդիսցիպլինար մոտեցում: Մաշկաբանները երկարատև համակարգային թերապիայի ցուցումով բուժառուներին կարող են տեղեկացնել, նոր դեղամիջոցի ընդունմամբ պայմանավորված, բերանի խոռոչում դրսևորվող հնարավոր նշանների և ախտանիշների մասին, ինչպես նաև զգուշացնել ստոմատոլոգի կողմից մշտադիտարկման անհրաժեշտության և ցուցման դեպքում պարբերական ատամնաբուժական մասնագիտական միջամտության մասին: Այս ամենի նպատակն է հնարավորինս շուտ հայտնաբերել, գնահատել և վերահսկել հնարավոր ատամնային և հարատամնային (պարօդոնտալ) խնդիրները և հավասարակշռություն ապահովել օգուտների ու բացասական հետևանքների միջև: Միևնույն ժամանակ, ստոմատոլոգները պետք է հաշվի առնեն բերանի խոռոչում դեղորայքի հետ կապված հնարավոր դրսևորումները՝ ախտորոշման և բուժման պլանավորման ժամանակ:

Եզրակացություն. Մաշկաբանների և ստոմատոլոգների միջև համագործակցությունը կարևոր է ակնեի համակարգային թերապիայի ընթացքում՝ բերանի խոռոչում դրսևորվող հնարավոր բարդությունները ժամանակին բացահայտելու և համապատասխան բուժում ապահովելու համար:

Հիմնաբառեր. *ակնե, ակնեի բուժում, ակնեի համակարգային բուժում, բերանի խոռոչի առողջություն*