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ORAL MANIFESTATIONS ASSOCIATED WITH ANTIDEPRESSANT USE AND THEIR SIGNIFICANCE IN DENTAL PRACTICE: A NARRATIVE LITERATURE REVIEW

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ABSTRACT

Antidepressants are widely used in the treatment of depressive disorders; therefore, dentists increasingly encounter patients receiving such pharmacotherapy. In addition to their therapeutic benefits, these drugs may cause adverse effects that manifest within the oral cavity and influence both oral health status and the course of dental treatment.

The aim of this paper was to present the current state of knowledge regarding oral manifestations associated with antidepressant use and to discuss their significance in everyday dental practice. This article is a narrative literature review based on scientific publications concerning the effects of antidepressants on oral tissues.

The analysis showed that the most frequently described adverse effects are xerostomia and hyposalivation, which play an important role in the development of secondary complications, such as increased risk of dental caries, oral mucosal discomfort, and opportunistic infections. The literature also reports possible bruxism, taste disorders, and complex associations between depression, pharmacotherapy, and periodontal diseases. Available evidence indicates that oral changes usually result from the interaction of pharmacotherapy, the course of depression itself, and individual risk factors.

Early identification of adverse effects, appropriate preventive care, and interdisciplinary cooperation between the dentist and the physician managing psychiatric treatment may reduce the risk of complications and improve the quality of care for patients using antidepressants.

KEYWORDS

Antidepressants, Oral Manifestations, Xerostomia, Hyposalivation, Adverse Drug Reactions, Dental Practice

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1. Introduction

Depression is one of the most common mental disorders and represents one of the major challenges of contemporary health care. According to the World Health Organization, depression affects approximately 5.7 % of the adult global population. The disorder affects not only patients' psychological functioning but also their somatic health, quality of life, and ability to perform everyday activities (World Health Organization [WHO], 2025).

Because of its high prevalence and its potential chronic or recurrent course, depression treatment is important from both public health and clinical perspectives. The oral health of patients with depression may deteriorate as a result of behavioral and somatic factors associated with the disorder itself, as well as due to the treatment used. Reduced motivation to maintain proper oral hygiene, changes in dietary habits, and comorbid chronic diseases may increase the risk of oral diseases (Cockburn et al., 2017; Alcázar-Hernández et al., 2024). Another relevant factor is the adverse effect profile of antidepressants, which may contribute to salivary secretion disorders, oral mucosal changes, and other manifestations of significance in dental practice (Alcázar-Hernández et al., 2024; Wolff et al., 2017).

Current guidelines for the treatment of depression emphasize the need to individualize therapy according to symptom severity, patient functioning, and patient preferences. In less severe depressive episodes, psychological interventions and other non-pharmacological forms of support should be considered first, whereas antidepressants are not routinely used as first-line treatment unless this reflects an informed patient preference. In patients with more severe depression, pharmacotherapy may constitute one of the main components of therapeutic management, often as part of combined treatment with psychotherapy (National Institute for Health and Care Excellence [NICE], 2022; Kovich et al., 2023).

The widespread use of antidepressants means that dentists may increasingly provide care for patients exposed to oral adverse effects of pharmacotherapy. The most commonly discussed consequences are xerostomia and hyposalivation, which may indirectly increase the risk of dental caries, opportunistic infections, and oral mucosal discomfort (Daly, 2016; Teoh et al., 2023; Wolff et al., 2017). The literature also describes taste disorders, bruxism, mucosal changes, and complex associations between depression, antidepressant

treatment, and periodontal diseases (Alcázar-Hernández et al., 2024; Garrett & Hawley, 2018; Rademacher et al., 2020; Taccardi et al., 2024; Teoh et al., 2019a, 2019b). These consequences may affect oral health status, the course of dental treatment, and patients' quality of life (Daly, 2016; Cockburn et al., 2017; Wolff et al., 2017). Therefore, knowledge of oral manifestations associated with antidepressant use is important in everyday dental practice.

2. Methodology

This article is a narrative literature review aimed at presenting the current state of knowledge regarding oral manifestations associated with antidepressant use and their significance in dental practice.

The literature review was conducted using PubMed, PubMed Central (PMC), and Google Scholar. The search terms included, among others: *antidepressants*, *oral manifestations*, *oral health*, *xerostomia*, *hyposalivation*, *periodontal disease*, *bruxism*, *taste disorders*, and *oral mucosal lesions*. The selection of literature was purposeful, as is appropriate for a narrative review, with particular attention given to publications concerning adverse effects of antidepressants relevant to dentistry.

The analysis mainly included publications from 2015–2025, including systematic reviews, review articles, clinical guidelines, observational studies, and case reports concerning the effects of antidepressants on oral health. Selected pharmacological publications were also included when relevant to the discussion of mechanisms of action of particular antidepressant groups. Publications unrelated to the topic, conference abstracts, letters to the editor, and articles without access to the full text were excluded. The analysis was performed through qualitative synthesis of the available literature.

3. Results

3.1. Characteristics of the Most Commonly Used Groups of Antidepressants

Pharmacotherapy is one of the important elements of depression treatment, particularly in patients with more severe symptoms or when the use of pharmacological treatment is justified by the clinical picture, previous response to therapy, and patient preferences. Several groups of antidepressants are currently available, differing in mechanism of action, safety profile, tolerability, and frequency of adverse effects. The choice of medication should take into account symptom severity, comorbidities, potential drug interactions, previous treatment response, risk of adverse effects, and individual patient preferences (NICE, 2022; Kovich et al., 2023).

One of the basic and commonly used groups of antidepressants is selective serotonin reuptake inhibitors (SSRIs). Their mechanism of action involves inhibition of serotonin reuptake, which increases serotonin availability in the synaptic cleft. Because of their more favorable safety profile and better tolerability compared with older antidepressants, SSRIs are often used as first-line pharmacological treatment for depression. This group includes, among others, sertraline, escitalopram, fluoxetine, paroxetine, and citalopram (Fasipe, 2018; Kovich et al., 2023).

Serotonin-norepinephrine reuptake inhibitors (SNRIs), such as venlafaxine, duloxetine, and desvenlafaxine, also constitute an important group. These drugs inhibit the reuptake of both serotonin and norepinephrine, and their use may be considered both as first-line treatment and in cases of insufficient response to other antidepressants. As with other antidepressants, the choice of an SNRI should depend on the clinical presentation, treatment tolerability, comorbidities, and risk of adverse effects (Fasipe, 2018; NICE, 2022; Kovich et al., 2023).

Older-generation antidepressants include tricyclic antidepressants (TCAs), such as amitriptyline, imipramine, and clomipramine. In addition to inhibiting the reuptake of serotonin and norepinephrine, these drugs have anticholinergic, antihistaminic, and α -adrenergic blocking properties, which are associated with a higher risk of adverse effects. From a dental perspective, their anticholinergic activity is particularly important because it may contribute to reduced salivary secretion, xerostomia, and secondary oral complications (Fasipe, 2018; Daly, 2016; Teoh et al., 2023; Wolff et al., 2017).

Antidepressants with different mechanisms of action are also used in clinical practice. These include noradrenergic and specific serotonergic antidepressants (NaSSA), represented by mirtazapine, and norepinephrine-dopamine reuptake inhibitors (NDRI), represented by bupropion. These agents differ from

SSRIs, SNRIs, and TCAs in their pharmacological profile and adverse effects; therefore, they may provide a valuable alternative for patients in whom treatment with other antidepressants is ineffective or poorly tolerated. Their selection should always be adapted to the patient's clinical condition, comorbidities, and potential drug interactions (Fasipe, 2018; Kovich et al., 2023; NICE, 2022).

Monoamine oxidase inhibitors (MAOIs) are used much less frequently. Their mechanism of action is based on inhibition of monoamine oxidase, an enzyme involved in the metabolism of biogenic amines such as serotonin, norepinephrine, and dopamine. Because of their safety profile, the risk of significant drug interactions, and the possibility of interactions with tyramine-containing foods, their use is currently limited mainly to selected clinical situations, especially treatment-resistant depression or chronic depressive symptoms, usually after specialist consultation. Some combinations of MAOIs with SSRIs, SNRIs, or TCAs may be particularly dangerous; therefore, treatment with these agents requires careful clinical supervision (Fasipe, 2018; NICE, 2022).

The different groups of antidepressants differ not only in their mechanisms of action but also in their adverse effect profiles relevant to oral health. Anticholinergic properties and effects on salivary secretion are particularly important, because quantitative and qualitative salivary disturbances may lead to xerostomia, hyposalivation, increased risk of dental caries, difficulties in wearing dental prostheses, oral mucosal discomfort, and greater susceptibility to opportunistic infections. Understanding the differences between antidepressant classes is therefore important for assessing complication risk and planning dental care for patients treated for depression (Alcázar-Hernández et al., 2024; Daly, 2016; Teoh et al., 2023; Wolff et al., 2017).

The main groups of antidepressants and their relevance to oral health are summarized in Table 1.

Table 1. Characteristics of Selected Groups of Antidepressants and Their Significance for Oral Health

Drug group	Examples	Main mechanism of action	Significance from a dental perspective
SSRIs	Sertraline, escitalopram, fluoxetine, paroxetine, citalopram	Inhibition of serotonin reuptake	Possible xerostomia; the literature also describes an association between SSRIs and bruxism, although evidence on bruxism is mainly based on case reports
SNRIs	Venlafaxine, duloxetine, desvenlafaxine	Inhibition of serotonin and norepinephrine reuptake	Possible adverse effects include dry mouth; clinical significance depends on the specific drug, dose, treatment duration, and individual patient factors
TCAs	Amitriptyline, imipramine, clomipramine	Inhibition of serotonin and norepinephrine reuptake; additional anticholinergic, antihistaminic, and α -adrenergic blocking effects	The anticholinergic effect is particularly important in dentistry because it may contribute to xerostomia, hyposalivation, dental caries, mucosal changes, and opportunistic infections
NaSSA	Mirtazapine	Noradrenergic and specific serotonergic activity, including antagonism of α_2 -adrenergic receptors and selected serotonin receptors	Possible dry mouth; the adverse effect profile differs from SSRIs and SNRIs and requires individualized clinical assessment
NDRI	Bupropion	Inhibition of norepinephrine and dopamine reuptake	Dental relevance mainly concerns possible dry mouth and the need to consider comorbidities and drug interactions
MAOIs	Moclobemide, phenelzine, tranylcypromine	Inhibition of monoamine oxidase activity	Less commonly used; relevant mainly because of drug and dietary interactions, the need for a detailed medication history, and caution in patients taking multiple medications

Note. SSRIs — selective serotonin reuptake inhibitors; SNRIs — serotonin-norepinephrine reuptake inhibitors; TCAs — tricyclic antidepressants; NaSSA — noradrenergic and specific serotonergic antidepressants; NDRI — norepinephrine-dopamine reuptake inhibitors; MAOIs — monoamine oxidase inhibitors. Source: own elaboration based on Fasipe (2018), Kovich et al. (2023), NICE (2022), Daly (2016), Teoh et al. (2023), Wolff et al. (2017), and Garrett and Hawley (2018).

3.2. Mechanisms by Which Antidepressants Affect Oral Health

Antidepressants may affect oral health both directly and indirectly. The mechanisms responsible for the development of oral changes are complex and depend on the class of medication used, duration of therapy, dose, comorbidities, and individual patient characteristics (Alcázar-Hernández et al., 2024; Cockburn et al., 2017; Wolff et al., 2017).

The most frequently described mechanism is reduced salivary secretion, resulting primarily from the anticholinergic action of some antidepressants, especially tricyclic antidepressants, and from their effect on salivary gland function. Salivary deficiency disrupts the natural protective functions of the oral cavity, such as cleansing tooth surfaces, buffering acids, antibacterial activity, and participation in enamel remineralization. Consequently, the risk of dental caries, fungal infections, and oral mucosal damage may increase. The association with periodontal diseases is more complex and depends on the interaction of systemic, behavioral, and drug-related factors (Daly, 2016; Teoh et al., 2023; Taccardi et al., 2024; Wolff et al., 2017).

The influence of antidepressants on the central nervous system may also play an important role. Changes in serotonergic transmission, especially during the use of SSRIs and SNRIs, are indicated as one of the possible mechanisms of drug-induced bruxism. However, it should be emphasized that available data on bruxism associated with antidepressant use are largely derived from case reports and case series; therefore, they do not allow a clear estimation of the frequency of this phenomenon in the population of patients treated with antidepressants (Garrett & Hawley, 2018; Teoh et al., 2019a).

Taste disorders and burning sensations of the oral mucosa have also been reported in some patients, although the mechanisms responsible for their development have not been clearly established. These disorders may be drug-related, but they may also result indirectly from oral dryness, changes in saliva composition, comorbid diseases, or the use of multiple medications (Alcázar-Hernández et al., 2024; Daly, 2016; Rademacher et al., 2020; Teoh et al., 2019a).

The development of oral manifestations is also influenced by factors not directly related to pharmacotherapy, such as age, polypharmacy, comorbidities, smoking, diet, and level of oral hygiene. In clinical practice, adverse oral effects of antidepressants should therefore be considered as the result of multiple interacting factors rather than solely as a consequence of using a specific drug (Cockburn et al., 2017; Kharat et al., 2025; Wolff et al., 2017).

The main mechanisms leading to oral manifestations in patients using antidepressants are presented in Table 2.

Table 2. Mechanisms by Which Antidepressants May Contribute to Oral Manifestations

Main mechanism	Biological or functional consequence	Possible oral manifestations	Clinical significance for the dentist
Anticholinergic activity of some antidepressants, especially tricyclic antidepressants	Reduced salivary secretion, i.e., hyposalivation, and subjective dry mouth	Xerostomia, difficulty speaking, chewing, and swallowing, oral mucosal discomfort	Assessment of dry mouth symptoms, detailed medication history, and implementation of caries-preventive and moisturizing measures are required
Impairment of the protective functions of saliva	Reduced cleansing of tooth surfaces, acid buffering, antibacterial activity, and enamel remineralization	Increased risk of dental caries, especially in patients with chronic hyposalivation	Individual caries risk assessment, intensified fluoride prevention, dietary control, and regular dental check-ups are needed

Main mechanism	Biological or functional consequence	Possible oral manifestations	Clinical significance for the dentist
Hyposalivation and coexisting risk factors, such as poorer hygiene, smoking, comorbidities, and polypharmacy	Easier biofilm accumulation, persistent inflammation, and deterioration of local oral conditions	Possible deterioration of periodontal status, gingival bleeding, increased plaque accumulation, and progression of inflammation in high-risk patients	Interpretation must be cautious because periodontal diseases are multifactorial and should not be automatically attributed to antidepressants alone
Oral mucosal dryness and weakening of local protective mechanisms	Greater susceptibility of the mucosa to microtrauma, irritation, and delayed healing	Dryness, burning, erosions, ulcerations, and oral mucosal irritation	Drug-related lesions should be differentiated from mechanical trauma, infections, nutritional deficiencies, systemic diseases, and effects of other medications
Hyposalivation, disruption of oral microbial balance, and local coexisting factors	Increased susceptibility to opportunistic infections, especially with severe dry mouth	Oral candidiasis, plaques, burning, discomfort, and mucosal pain	Treatment should address not only the infection but also dry mouth and factors promoting recurrence
Effects of antidepressants on the central nervous system, especially serotonergic and dopaminergic pathways	Possible disturbance of masticatory muscle activity control	Bruxism, clenching or grinding of teeth, tooth wear, masticatory muscle pain, and temporomandibular joint symptoms	If symptoms are temporally related to treatment initiation or dose increase, cooperation with the prescribing physician is required; the dentist may provide protective measures such as an occlusal splint
Possible effects of medications on taste perception and indirect effects of hyposalivation	Impaired dissolution of taste substances in saliva and transport to taste receptors; possible neurosensory effects	Dysgeusia, hypogeusia, unpleasant or metallic taste, reduced appetite	Differential diagnosis is necessary because taste disorders may also result from infections, deficiencies, neurological diseases, smoking, or other medications
Interaction of pharmacotherapy, the course of depression, and individual patient risk factors	Variable frequency and severity of symptoms depending on drug type, dose, treatment duration, comorbidities, age, hygiene, and polypharmacy	Variable severity of xerostomia, dental caries, periodontal changes, bruxism, taste disorders, and mucosal lesions	Patients treated with antidepressants require individualized risk assessment rather than automatic attribution of all oral changes to a single drug

Note. The table summarizes the main mechanisms through which antidepressants may directly or indirectly affect oral health. Most manifestations, particularly dental caries, mucosal lesions, and opportunistic infections, are multifactorial and often develop secondarily to xerostomia or hyposalivation. Source: own elaboration based on Alcázar-Hernández et al. (2024), Cockburn et al. (2017), Daly (2016), Garrett and Hawley (2018), Glick et al. (2020), Kharat et al. (2025), Lobbezoo et al. (2018), Rademacher et al. (2020), Taccardi et al. (2024), Teoh et al. (2019a, 2019b, 2023), Villa et al. (2015), and Wolff et al. (2017).

3.3. Oral Manifestations

3.3.1. Xerostomia and Hyposalivation

Xerostomia is one of the most frequently described oral manifestations in patients using antidepressants. It refers to the subjective sensation of dry mouth, which does not always coexist with objectively reduced salivary secretion. Hyposalivation, in contrast, denotes an actual reduction in salivary gland secretory function and is an important risk factor for the development of numerous oral diseases (Teoh et al., 2023; Villa et al., 2015; Wolff et al., 2017).

The mechanism of xerostomia development is multifactorial and depends on the class of antidepressant used, its dose, duration of therapy, and individual patient characteristics. The greatest importance is attributed to anticholinergic properties, which reduce parasympathetic nervous system activity and decrease salivary secretion. This effect is particularly pronounced during the use of tricyclic antidepressants (TCAs), whereas selective serotonin reuptake inhibitors (SSRIs) are usually associated with less severe symptoms. The systematic review by Teoh et al. (2023) showed that TCAs caused more severe dry mouth, both subjectively and objectively, compared with placebo and most other psychotropic drug groups analyzed. However, the authors emphasized that available data on newer antidepressants are limited; therefore, conclusions regarding differences between individual agents should be formulated with caution (Daly, 2016; Teoh et al., 2023; Wolff et al., 2017).

Reduced salivary volume disrupts the protective functions of saliva. Saliva is responsible for cleansing tooth surfaces, neutralizing acids, supplying calcium and phosphate ions involved in enamel remineralization, and limiting microbial growth. Disturbance of these mechanisms may result in increased risk of dental caries, fungal infections, pain, difficulty wearing dental prostheses, and damage to the oral mucosa. The literature indicates that hyposalivation is one of the most important mechanisms mediating the development of many secondary complications observed in patients treated with antidepressants (Daly, 2016; Teoh et al., 2023; Villa et al., 2015; Wolff et al., 2017).

From the perspective of dental practice, early recognition of xerostomia is important. The dentist should consider the patient's medications during history-taking, assess symptoms of dry mouth, and, when necessary, consider evaluation of salivary secretion. Recommendations include intensified fluoride prevention, use of saliva substitutes or agents stimulating salivary secretion, regular dental check-ups, and patient education regarding appropriate oral hygiene, limitation of simple sugars, and adequate hydration. In patients with severe symptoms, consultation with the physician managing depression may also be indicated to evaluate the possibility of modifying pharmacotherapy; however, the decision to change treatment does not belong to the dentist (Daly, 2016; Glick et al., 2020; Villa et al., 2015).

Clinical significance.

Xerostomia and hyposalivation are among the most important oral manifestations associated with antidepressant use. Particular attention should be paid to patients using TCAs and to those taking several medications with xerogenic potential. Early dental prevention may reduce the risk of secondary consequences, especially dental caries, opportunistic infections, and oral mucosal lesions (Daly, 2016; Teoh et al., 2023; Wolff et al., 2017).

3.3.2. Dental Caries

Increased risk of dental caries is one of the most frequently discussed secondary consequences of antidepressant use. Available data indicate that this risk results primarily from the indirect effect of pharmacotherapy on salivary secretion rather than from a direct effect of the drugs on dental tissues. The systematic review by Alcázar-Hernández et al. (2024) showed an association between antidepressant use and more frequent occurrence of xerostomia and dental caries, particularly in relation to SSRIs and TCAs. At the same time, this association should be interpreted with consideration of confounding factors such as oral hygiene, diet, comorbidities, and polypharmacy (Alcázar-Hernández et al., 2024; Cockburn et al., 2017; Daly, 2016).

Reduced salivary secretion leads to impairment of the natural protective mechanisms of the oral cavity. Acid-buffering capacity, cleansing of tooth surfaces, and enamel remineralization decrease, which promotes plaque retention and the development of carious lesions. This risk may be further intensified by factors associated with depression, such as poor oral hygiene, unfavorable dietary habits, smoking, reduced attendance

at dental appointments, and coexisting polypharmacy (Cockburn et al., 2017; Daly, 2016; Villa et al., 2015; Wolff et al., 2017).

The risk of dental caries may be particularly relevant in patients with chronic hyposalivation and in those using drugs with pronounced anticholinergic effects, especially TCAs. In the case of newer antidepressants, such as SSRIs or SNRIs, the severity of dry mouth usually appears to be lower than with TCAs; however, because these medications are widely used, the problem remains clinically significant (Alcázar-Hernández et al., 2024; Daly, 2016; Teoh et al., 2023).

Caries prevention in patients treated with antidepressants should include individual risk assessment, regular check-ups, professional fluoride prevention, oral hygiene instruction, and measures aimed at reducing the effects of hyposalivation. Particular attention should be given to patients taking TCAs, patients with severe dry mouth symptoms, and those using several medications with xerogenic potential (Daly, 2016; Glick et al., 2020; Villa et al., 2015).

Clinical significance.

Increased risk of dental caries in patients using antidepressants is largely a consequence of hyposalivation and impairment of the protective functions of saliva. In addition to pharmacotherapy, factors associated with depression itself, such as poorer oral hygiene and unfavorable dietary habits, also play an important role. Regular dental prevention and control of dry mouth symptoms may limit the development of carious lesions (Cockburn et al., 2017; Daly, 2016; Wolff et al., 2017).

3.3.3. Periodontal Diseases

Periodontal diseases are chronic oral diseases with complex, multifactorial etiology. The available literature emphasizes that the association between antidepressant use and periodontal status should not be interpreted as simple or direct. Both adverse drug effects and factors associated with depression itself, lifestyle, comorbidities, and oral hygiene quality may play important roles (Alcázar-Hernández et al., 2024; Cockburn et al., 2017; Taccardi et al., 2024).

One possible mechanism affecting periodontal status is hyposalivation induced by some antidepressants. Reduced salivary secretion may impair the natural protective mechanisms of the oral cavity, promoting biofilm accumulation and persistence of inflammation. In addition, patients with depression may present factors increasing the risk of periodontal diseases, such as poorer oral hygiene, less frequent use of dental care, unfavorable dietary habits, smoking, and comorbid diseases (Cockburn et al., 2017; Kharat et al., 2025; Wolff et al., 2017).

The systematic review by Alcázar-Hernández et al. (2024) indicates that periodontal problems have been described more frequently in patients using antidepressants; however, available studies do not allow direct confirmation of a causal relationship. The review by Taccardi et al. (2024) shows that the effect of antidepressants on the periodontium may depend on the specific drug and research model. In some analyses, improvement in selected periodontal parameters was observed, whereas deterioration of some periodontal indicators was reported in relation to venlafaxine. These data indicate the need for cautious interpretation of findings and consideration of numerous confounding factors (Alcázar-Hernández et al., 2024; Taccardi et al., 2024).

From a practical perspective, patients treated with antidepressants require individualized assessment of periodontal disease risk, especially if xerostomia, chronic hyposalivation, smoking, diabetes, polypharmacy, or insufficient oral hygiene coexist. Dental management should include regular periodontal assessment, professional biofilm removal, oral hygiene instruction, and monitoring of dry mouth symptoms. Early implementation of preventive measures may reduce the progression of inflammatory changes and improve long-term prognosis (Glick et al., 2020; Taccardi et al., 2024).

Clinical significance.

Current evidence indicates that the risk of periodontal deterioration in patients using antidepressants may result from the overlap of adverse pharmacotherapy effects and factors related to the course of depression. However, this relationship should not be simplified to the statement that antidepressants directly cause periodontal diseases. The dentist should assess risk individually, taking into account both the treatment used and the patient's general health status and health behaviors (Alcázar-Hernández et al., 2024; Cockburn et al., 2017; Taccardi et al., 2024).

3.3.4. Bruxism

Bruxism is a repetitive activity of the masticatory muscles that may manifest as clenching or grinding of the teeth, as well as bracing or thrusting of the mandible. Sleep bruxism and awake bruxism are distinguished. Although its etiology is multifactorial, cases of bruxism associated with antidepressant use, particularly SSRIs and less frequently SNRIs, have been described in the literature (Garrett & Hawley, 2018; Lobbezoo et al., 2018).

The exact mechanism of antidepressant-induced bruxism has not been clearly established. The most commonly cited hypothesis assumes that increased serotonergic activity may indirectly disturb dopaminergic pathways involved in the control of masticatory muscle activity. These changes may result in involuntary tooth clenching, grinding, and increased muscle tension. However, this mechanism remains hypothetical and requires further confirmation in clinical studies (Garrett & Hawley, 2018; Teoh et al., 2019a).

The systematic review by Garrett and Hawley (2018), which included published case reports, showed that bruxism was most frequently observed during treatment with fluoxetine, sertraline, and venlafaxine. Symptoms usually appeared within the first few weeks after treatment initiation or dose increase and, in many patients, resolved after drug discontinuation, dose reduction, or therapy modification. In some case reports, a beneficial effect was also achieved after adding buspirone as adjunctive treatment; however, such management remains the responsibility of the physician managing psychiatric treatment, not the dentist (Garrett & Hawley, 2018).

From the dental perspective, chronic bruxism may lead to pathological tooth wear, enamel cracks, tooth hypersensitivity, overload of the masticatory muscles, and temporomandibular joint symptoms. In patients using antidepressants, it is particularly important to obtain a detailed history regarding the onset of symptoms and their possible temporal relationship with the initiation of pharmacotherapy or dose change (Garrett & Hawley, 2018; Glick et al., 2020; Lobbezoo et al., 2018).

Dental management should include early symptom recognition, assessment of the degree of damage to the masticatory system, and implementation of appropriate protective measures, such as an occlusal splint, treatment of hypersensitivity, and monitoring of tooth wear progression. If antidepressant-induced bruxism is suspected, cooperation with the physician managing psychiatric treatment is indicated, as the physician may consider modification of pharmacotherapy or additional treatment (Garrett & Hawley, 2018; Glick et al., 2020).

Clinical significance.

Bruxism associated with antidepressant use is best described in case reports and case series; therefore, these data do not allow a clear estimation of its frequency in the population of patients treated with antidepressants. Nevertheless, its occurrence may lead to significant consequences within the masticatory system. Early recognition of the temporal relationship between symptom onset and pharmacotherapy initiation allows more rapid implementation of appropriate management and may reduce the risk of permanent damage to the teeth and temporomandibular joints (Garrett & Hawley, 2018).

3.3.5. Taste Disorders

Taste disorders are less frequently discussed adverse effects of antidepressant pharmacotherapy, but they may significantly affect patients' comfort and functioning. They may manifest as reduced taste perception, altered quality of taste stimuli, or a persistent unpleasant taste in the mouth. These symptoms may lead to reduced appetite, poorer nutritional quality, and decreased quality of life (Daly, 2016; Rademacher et al., 2020; Teoh et al., 2019a).

The mechanism of taste disorder development has not been fully explained. Taste disorders may result from the direct effect of medications on the nervous system or taste receptors, as well as from indirect consequences of hyposalivation. Saliva plays an important role in dissolving taste substances and transporting them to taste receptors; therefore, reduced salivary secretion may impair taste perception. In some cases, taste disorders may also coexist with xerostomia, mucosal changes, infections, nutritional deficiencies, or adverse effects of other medications used by the patient (Daly, 2016; Rademacher et al., 2020; Villa et al., 2015).

The available literature describes taste disorders in patients using various drug groups, including medications acting on the central nervous system. Rademacher et al. (2020) indicate that drug-induced taste disorders are relevant to dental practice, but their actual frequency and mechanisms depend on many factors, including drug type, comorbidities, and concomitant use of other preparations. In relation to antidepressants, the data are more limited than for xerostomia; therefore, reported symptoms require cautious interpretation (Alcázar-Hernández et al., 2024; Rademacher et al., 2020; Teoh et al., 2019a).

From the dentist's perspective, taste disorders reported by the patient require a detailed history and differentiation from other possible causes, such as oral mucosal diseases, infections, vitamin and micronutrient deficiencies, neurological disorders, smoking, or adverse effects of other medications. If an association with antidepressant pharmacotherapy is suspected, cooperation with the physician managing psychiatric treatment is indicated in order to assess the possibility of therapy modification (Glick et al., 2020; Rademacher et al., 2020).

Clinical significance.

Taste disorders occur less frequently and are less well documented than xerostomia, but they may reduce patients' comfort and affect eating behavior. Because of the multifactorial etiology of this problem, careful interpretation of reported symptoms is necessary, as is consideration of other potential causes of dysgeusia, hypogeusia, or ageusia (Rademacher et al., 2020).

3.3.6. Oral Mucosal Lesions and Opportunistic Infections

Oral mucosal lesions and opportunistic infections are less frequently described manifestations associated with antidepressant use. Unlike xerostomia, their development is often indirect and results primarily from impaired salivary secretion and weakening of the natural protective mechanisms of the oral cavity. The literature describes, among others, irritation and dryness of the mucosa, erosions, ulcerations, burning sensations, and increased susceptibility to mechanical trauma (Daly, 2016; Glick et al., 2020; Teoh et al., 2019b; Villa et al., 2015).

Hyposalivation is a key mechanism promoting the development of mucosal changes. Saliva maintains appropriate tissue moisture, provides mechanical protection of the mucosa, and limits microbial growth. Reduced salivary secretion leads to mucosal drying, increased susceptibility to microtrauma, and slower regenerative processes. Additional coexisting factors, such as wearing dental prostheses, insufficient oral hygiene, smoking, diabetes, or polypharmacy, may intensify observed changes (Daly, 2016; Kharat et al., 2025; Villa et al., 2015; Wolff et al., 2017).

Among opportunistic infections, oral candidiasis is particularly important. Its development is promoted by reduced salivary secretion, disruption of oral microbial balance, and chronic mucosal irritation. Available publications indicate that fungal infections may occur more frequently in patients with severe xerostomia or hyposalivation, particularly when other risk factors coexist. However, there is insufficient evidence to clearly attribute the development of candidiasis to the direct effect of a specific antidepressant group (Daly, 2016; Glick et al., 2020; Villa et al., 2015).

The literature also includes reports of oral burning sensations and changes resembling burning mouth syndrome. However, available evidence is limited and does not allow clear confirmation of a causal relationship between antidepressant pharmacotherapy and the development of this condition. Burning symptoms may be associated with dry mouth, taste disorders, systemic diseases, nutritional deficiencies, mucosal changes, or other medications used by the patient (Daly, 2016; Rademacher et al., 2020; Teoh et al., 2019a, 2019b; Villa et al., 2015).

From the clinical perspective, the presence of mucosal lesions or symptoms of opportunistic infection requires careful differential diagnosis. The dentist should consider not only antidepressant pharmacotherapy but also systemic diseases, nutritional deficiencies, removable prostheses, smoking, and other medications that may affect mucosal status. In the presence of hyposalivation, measures reducing dry mouth are essential, because improvement in mucosal comfort and moisture may reduce the risk of further complications (Daly, 2016; Glick et al., 2020; Villa et al., 2015).

Clinical significance.

Most mucosal lesions and opportunistic infections observed in patients using antidepressants should be considered as the result of the interaction between hyposalivation and additional risk factors rather than solely as a direct pharmacological effect of the drugs. The basis of management is early recognition of salivary secretion disorders, elimination of risk factors, appropriate local treatment, and infection prevention (Daly, 2016; Glick et al., 2020; Villa et al., 2015).

3.4. Significance for Dental Practice

The widespread use of antidepressants means that dentists may increasingly participate in the care of patients exposed to pharmacotherapy-related adverse effects manifesting within the oral cavity. Knowledge of the most common symptoms and mechanisms of their development enables early recognition of disorders, reduction of complication risk, and implementation of appropriate preventive and therapeutic measures. Comprehensive patient care requires consideration of both psychiatric treatment and individual risk factors affecting oral health (Alcázar-Hernández et al., 2024; Daly, 2016; Glick et al., 2020).

3.4.1. Diagnosis

A detailed medical history is the basic element of management. It should include the type of antidepressant used, duration of therapy, dosage, and any pharmacotherapy changes. It is important to establish the time of symptom onset and its temporal relationship with treatment initiation or dose modification. During clinical examination, particular attention should be paid to symptoms of xerostomia, reduced salivary secretion, carious lesions, periodontal status, tooth wear suggesting bruxism, and oral mucosal changes (Daly, 2016; Glick et al., 2020; Villa et al., 2015).

In the case of reported taste disorders or burning sensations in the oral cavity, differential diagnosis should include systemic diseases, nutritional deficiencies, infections, oral mucosal diseases, and adverse effects of other medications. When assessing the patient, it is particularly important to distinguish whether the symptoms appeared after initiation of antidepressant pharmacotherapy, whether they were present earlier, or whether they may have another underlying cause (Rademacher et al., 2020; Teoh et al., 2019a, 2019b).

3.4.2. Prevention

Preventive care should be adapted to the patient's individual level of risk. Education regarding proper oral hygiene, limitation of simple sugar intake, and adequate hydration is particularly important. In patients with symptoms of hyposalivation, fluoride preparations, agents supporting enamel remineralization, and moisturizing or salivary-stimulating products are recommended. Regular dental check-ups enable early detection of carious lesions, periodontal inflammation, and mucosal damage, allowing rapid implementation of appropriate treatment (Daly, 2016; Glick et al., 2020; Villa et al., 2015).

3.4.3. Patient Management

Dental management should include both treatment of existing changes and prevention of further progression. In the case of xerostomia, alleviation of symptoms and elimination of factors additionally worsening dry mouth are of primary importance. In patients with bruxism, occlusal splints should be considered and the degree of hard dental tissue wear should be monitored. Treatment of mucosal lesions and opportunistic infections should be carried out according to the clinical diagnosis, while also considering the possible influence of hyposalivation on the healing process (Daly, 2016; Garrett & Hawley, 2018; Glick et al., 2020; Villa et al., 2015).

Cooperation between the dentist and the psychiatrist or physician managing pharmacotherapy is an important component of care. If the observed symptoms are suspected to represent an adverse effect of the medication used, the decision to change the drug or modify the dosage should belong exclusively to the physician treating depression. The dentist's role is to recognize the problem, reduce its oral consequences, and communicate relevant information to other members of the therapeutic team (Daly, 2016; Felipe, 2024; Garrett & Hawley, 2018; Glick et al., 2020).

Comprehensive care for a patient treated with antidepressants requires an interdisciplinary approach and regular monitoring of oral health. Early identification of adverse pharmacotherapy effects, appropriately selected preventive care, and cooperation between the dentist and the treating physician may reduce the risk of complications and improve patients' quality of life (Alcázar-Hernández et al., 2024; Daly, 2016; Felipe, 2024; Glick et al., 2020; Villa et al., 2015).

Practical recommendations for dental management of patients using antidepressants are summarized in Table 3.

Table 3. Recommendations for Dental Management of Patients Using Antidepressants

Manifestation	What should be assessed?	Recommended management
Xerostomia and hyposalivation	Subjective dry mouth, difficulty chewing, swallowing, and speaking, reduced salivary secretion	Assessment of symptoms and medications, fluoride preparations, saliva substitutes, stimulation of salivary secretion, education on hydration and hygiene
Dental caries	High caries risk, presence of new lesions, diet rich in simple sugars, hyposalivation	Individual risk assessment, intensive fluoride prevention, more frequent check-ups, oral hygiene instruction, and dietary modification
Periodontal diseases	Gingival bleeding, periodontal pockets, biofilm presence, smoking, comorbidities	Regular periodontal assessment, professional hygiene procedures, oral hygiene instruction, and control of risk factors
Bruxism	Tooth wear, enamel cracks, masticatory muscle pain, temporomandibular joint symptoms, temporal relationship with pharmacotherapy	Occlusal splint, monitoring of tooth wear, treatment of hypersensitivity, consultation with the treating physician if drug association is suspected
Taste disorders	Dysgeusia, hypogeusia, metallic taste, appetite changes, coexisting dry mouth	Differential diagnosis, assessment of medications and comorbidities, observation, consultation with the treating physician if drug-induced symptoms are suspected
Oral mucosal lesions and opportunistic infections	Erosions, ulcerations, burning, candidiasis, trauma from prostheses, mucosal dryness	Local treatment according to diagnosis, reduction of hyposalivation, elimination of irritating factors, improvement of hygiene, and prosthesis control

Note. Source: own elaboration based on Alcázar-Hernández et al. (2024), Daly (2016), Felipe (2024), Garrett and Hawley (2018), Glick et al. (2020), Rademacher et al. (2020), Teoh et al. (2019a, 2019b), Villa et al. (2015), and Wolff et al. (2017).

4. Discussion

The present literature review indicates that antidepressant use may be associated with various oral manifestations; however, the strength of scientific evidence differs depending on the type of observed change. The best-documented adverse effects remain xerostomia and accompanying hyposalivation, which are consistently described in systematic reviews and publications concerning adverse drug reactions. Available data indicate that tricyclic antidepressants have particularly high xerogenic potential, whereas SSRIs and SNRIs are usually associated with less severe symptoms. However, it should be emphasized that data on many newer antidepressants remain limited, and the risk cannot be clearly compared for all agents (Alcázar-Hernández et al., 2024; Daly, 2016; Teoh et al., 2023; Wolff et al., 2017).

The analyzed publications indicate that many oral changes do not represent a direct pharmacological effect of the drugs but develop secondarily to impaired salivary secretion. Hyposalivation reduces the protective functions of saliva, increasing the risk of dental caries, mucosal damage, and opportunistic infections. This relationship highlights the key role of xerostomia and hyposalivation as mediating mechanisms in the development of many manifestations discussed in this review (Daly, 2016; Teoh et al., 2023; Villa et al., 2015; Wolff et al., 2017).

The relationship between antidepressant treatment and periodontal diseases is more complex. Some publications indicate more frequent periodontal problems in patients treated with antidepressants; however, the data do not allow these changes to be simply attributed to direct drug effects. Depression, poorer oral hygiene, smoking, comorbidities, limited access to dental care, and polypharmacy may significantly influence periodontal status. In addition, the review by Taccardi et al. (2024) indicates that the effect of individual

antidepressants on periodontal parameters may vary, and improvement in selected indicators was even observed in some studies. Therefore, this issue requires particularly cautious interpretation (Alcázar-Hernández et al., 2024; Cockburn et al., 2017; Taccardi et al., 2024).

Functional disorders, such as bruxism, have a different character. In the case of bruxism, the literature provides evidence indicating a possible association with the use of SSRIs and some SNRIs, but the evidence is based mainly on case reports and case series. This limits the possibility of determining the actual frequency of this adverse effect and assessing the risk for individual drugs. Despite these limitations, bruxism is clinically important because it may lead to tooth wear, masticatory muscle pain, hypersensitivity, and temporomandibular joint symptoms (Garrett & Hawley, 2018; Lobbezoo et al., 2018).

Data on taste disorders and oral mucosal lesions are also more limited than data on xerostomia. Taste disorders may result from both the direct effects of drugs and the indirect consequences of dry mouth. Similarly, mucosal lesions and opportunistic infections should most often be considered in the context of hyposalivation, microbial disturbances, mechanical trauma, comorbid diseases, and polypharmacy. This requires differential diagnosis and avoidance of automatically attributing all symptoms solely to antidepressant pharmacotherapy (Daly, 2016; Glick et al., 2020; Rademacher et al., 2020; Teoh et al., 2019a, 2019b; Villa et al., 2015).

From the perspective of dental practice, the findings of this review emphasize the importance of comprehensive care for patients treated with antidepressants. Early recognition of adverse effects, appropriate risk assessment, and implementation of preventive measures may reduce the development of complications and improve patients' quality of life. Cooperation between the dentist and the physician managing psychiatric treatment is also an important component of care, particularly in cases of severe adverse effects requiring assessment of pharmacotherapy. The dentist should not independently recommend discontinuation or change of an antidepressant but may recognize a possible adverse effect and communicate this information to the treating physician (Daly, 2016; Glick et al., 2020; NICE, 2022; Villa et al., 2015).

The limitations of this paper include its narrative review design and the heterogeneity of available studies, which include systematic reviews, observational studies, review articles, and case reports. Differences in methodology, follow-up duration, study populations, and symptom assessment methods make direct comparison of results difficult. Despite these limitations, the analysis of current literature allows identification of the most frequently described oral manifestations and highlights the need for further studies on the effects of individual antidepressant groups on oral health (Alcázar-Hernández et al., 2024; Garrett & Hawley, 2018; Teoh et al., 2023).

5. Conclusions

Antidepressants may be associated with various oral manifestations, of which xerostomia and hyposalivation are the best documented. These disorders represent an important mechanism leading to many secondary complications, including increased risk of dental caries, oral mucosal discomfort, and opportunistic infections (Daly, 2016; Teoh et al., 2023; Wolff et al., 2017).

The risk and severity of adverse effects depend on the group of antidepressants used, dose, duration of treatment, and individual patient risk factors. Tricyclic antidepressants show particularly high xerogenic potential, whereas bruxism has most often been described in patients using SSRIs and some SNRIs, although the data on bruxism are mainly derived from case reports (Garrett & Hawley, 2018; Teoh et al., 2023).

Many manifestations observed in patients treated with antidepressants are multifactorial and result from the interaction of pharmacotherapy, the course of depression itself, and additional risk factors such as poorer oral hygiene, unfavorable dietary habits, smoking, comorbidities, and polypharmacy (Cockburn et al., 2017; Kharat et al., 2025; Taccardi et al., 2024).

Early identification of adverse effects, regular oral health assessment, and implementation of appropriate dental prevention may reduce the development of complications and improve the quality of life of patients chronically using antidepressants (Daly, 2016; Glick et al., 2020; Villa et al., 2015).

Comprehensive care for patients treated with antidepressants requires cooperation between the dentist and the physician managing psychiatric treatment. Further clinical studies are also needed to better define the effects of individual antidepressant groups on oral health and to develop optimal prevention and treatment strategies.

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