

Review Article

Miscellaneous Adverse Effects of Drugs in the Oral Cavity: A Review Study

Asmaa Yousuf Thanoon Al-Nuaimy ^{*1} , Faehaa Azher Al-Mashhadane ² 

¹ Department of Dental Basic Sciences, College of Dentistry, Al Noor University, Mosul, Iraq.

² Department of Dental Basic Sciences, College of Dentistry, University of Mosul, Mosul, Iraq.

* Corresponding author: asmaa.yousuf@alnoor.edu.iq

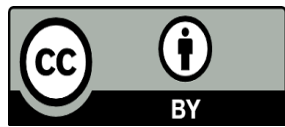
Article History

Received: 11 August 2024

Revised: 18 October 2024

Accepted: 26 November 2024

Published online: 1 September 2026



Copyright: © 2026 Authors.
This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY 4.0) license (<https://creativecommons.org/licenses/by/4.0/>).

Abstract

The clinical manifestations of the adverse effects of drugs in the oral cavity are diverse. New therapeutic agents have revolutionized the treatment of various studies focusing on the basic clinical manifestations of oral drug reactions, such as ulcers, infections, xerostomia, lichenoid reactions, pigmentation, white lesions, hyperplasia, paresthesia, osteonecrosis, angioedema, and malignancy. Dentists who provide oral health care should be familiar with these assays because they will encounter them in their practice.

Keywords: Drug, Dental, Oral cavity, Side effects

How to cite: Al-Nuaimy AY., Al-Mashhadane FA. Miscellaneous Adverse Effects of Drugs in the Oral Cavity: A Review Study. Al-Rafidain Dent J. 2026;26(2):327-341.

INTRODUCTION

New medications are constantly entering the market, but unfortunately, they sometimes cause unexpected and adverse reactions, especially in individuals with specific genetic predispositions or intolerances. These drug reactions have become a significant source of disease (1-5).

Medications are often prescribed in dentistry for patients with unexplained cavities or severe gum disease (6)

By reviewing a patient's current medications, dental professionals can identify potential side effects contributing to these oral health issues (1,2,5). Working with the patient's physician to adjust or change the causative medications can help prevent drug-induced cavities (7-16).

Drug-induced oral health problems can affect people of all ages and can vary widely in severity and symptoms, from mild to severe, short-term to long-term, and local to systemic. These problems are often unpredictable and can resemble other health conditions, leading to frequent misdiagnoses. This variability highlights the need for careful monitoring and thorough clinical evaluations to ensure proper treatment and care.

Different treatments can have varying outcomes when it comes to adverse effects. For example, paracetamol is generally safe with minimal side effects when used properly, while cancer chemotherapy often leads to a range of toxicities due to its aggressive action on cells (17).

Even medications considered safe can be risky for certain people. Take penicillin V, for instance—usually safe for most, but it can cause severe, life-threatening allergic reactions in those with penicillin allergies, even in small doses.

Adverse drug reactions (ADRs) are varied and can be categorized based on their causes, such as genetic predispositions, intolerance, or immune responses. Their unpredictable nature and wide range of effects make it essential to monitor patients closely and take thorough histories to avoid complications (10,18-25).

Adverse drug reactions can show up at different times—right away, a little later, or much later—and they can range from mild to severe. Some are predictable based on the drug’s dose and properties, while others are unpredictable due to individual patient factors (26).

Many medications don't reach their full effect at standard doses, so maintenance doses are necessary to avoid long-lasting adverse effects. Warfarin, a blood thinner, is a prime example where therapeutic effects must be carefully monitored to avoid serious toxicities and the risk of spontaneous bleeding (27-29). Overdosing on warfarin can happen accidentally, and factors like diet, genetic differences in drug metabolism, other drug interactions, liver issues, heart failure, and how well patients follow their prescribed regimen all play a role. Because of warfarin’s narrow therapeutic window, the “usual dose” is not one-size-fits-all; what works for one patient might be too much for another. Tailoring the dosage for each patient helps prevent toxicity while keeping the treatment effective.

Dry mouth, or xerostomia, can have many causes, with medications being a major one. Anticholinergic drugs like atropine, used for stomach issues, can significantly reduce saliva flow. Similarly, antipsychotic medications for schizophrenia can cause dry mouth or excessive salivation due to their effects on muscarinic receptors (29,30).

Understanding these complexities highlights the importance of personalized medicine. Close monitoring and dose adjustments are crucial to minimizing adverse drug reactions while maintaining the benefits of the treatments (31,32,33,34,35,36). Black tongue is a rare but notable condition where the tongue turns dark. Though usually harmless and temporary, it can be quite alarming for patients. Often, it’s linked to certain medications that alter the oral microbiome or encourage the growth of pigmented bacteria.

The first reported case was of a child taking ranitidine, a medication for acid reflux. This suggests that ranitidine and similar drugs could potentially cause black tongue, especially in those who are more susceptible.

Dental professionals should be aware of this condition in patients with oral discoloration who are on ranitidine therapy. Identifying this side effect early is crucial for prompt diagnosis and management. Stopping the medication usually resolves the symptoms, highlighting the importance of early intervention to reduce patient distress (37-40).

Patients with rheumatic diseases often experience a range of oral side effects. These include TMJ disorders, various oral mucosal conditions, and reduced salivation. Some conditions, like jaw claudication, need urgent attention, while others, like strawberry gingivitis and granulomas (41), are unusual but notable.

Amlodipine, a medication, can cause a loss of taste known as dysgeusia. This rare side effect can also happen with other calcium channel blockers like nifedipine. Medications affecting the renin-angiotensin system, such as captopril and eprosartan, can cause rare side effects like arm, back, or jaw pain, dry mouth, and facial swelling (42).

Dental care providers need to be aware of and manage adverse and atypical drug reactions often seen in oral health settings. Staying informed about potential drug interactions with common dental medications ensures comprehensive patient care and prevents complications from these adverse reactions (43-45).

Drug allergy

The immune system and drug allergy are the main negative reactions to medications (46). Hypersensitivity reactions differ from other types of drug poisoning in several ways. First of all, previous experience with the drug is important in seeking an answer. Second, the magnitude of the response appears to be independent of dose (47). Finally, the nature of the side effects appears to be a function of the immune system involved and not related to the offending medication. Finally, there is a strange reaction; The antigenicity of drugs varies widely.

Some drugs, such as epinephrine and caffeine, are not allergenic, others such as phenyl-ethyl-hydantoin. Penicillin, sulfonamides, and quinidine are often associated with allergies and, in addition to the active ingredient, another ingredient in the

preparation, such as a preservative or dye, may cause allergic reactions. Adverse effects of local anesthesia in dental work are rare and have many causes. Significant immune responses are caused primarily by skin contact with ester-type local anesthetics, which were widely used before the popularity of amide anesthetics (48,49). Adverse reactions caused by anesthetics may be epinephrine, additives (such as bisulfite or methylparaben), vasovagal syncope, or overdose poisoning. Amide local anesthetics rarely cause true contraindications, but they have been observed. Amide allergy is considered one of the most serious complications of dental work and may require treatment of patients under general anesthesia (50,51). Anaphylaxis after dental surgery is rare, and local anesthetics are rarely thought to be the cause of such a reaction. A 13-year-old boy was treated with local anesthesia before dental treatment. He developed acute symptoms of rhinorrhea, flushing, and angioedema, followed by wheezing and throat stiffness, which ultimately led to respiratory failure (52).

Chlorhexidine has become a ubiquitous mouthwash in dentistry and the public. This widespread use has led to an increase in the number of reported adverse reactions, including chlorhexidine gel. Although true allergies are rare, many cases occur in clinics around the world. Therefore, standard and clear labeling of products containing chlorhexidine is desirable. The benefits versus risks of chlorhexidine use must be weighed to avoid unnecessary exposure to chlorhexidine (53).

Another cause of allergy is an acute and chronic reaction to dental materials used in the treatment of dental patients (54). The oral cavity may be the only part affected, or a general skin reaction to the causative agent may be involved. Delayed reactions are the main hypersensitivity reactions that affect the oral cavity. Examples of contact hypersensitivity reactions are drug-induced stomatitis and venous stomatitis (44). Permanent responses to piroxicam are rare. These compare skin lesions with oral mucosal lesions. When treating patients with a history of drug eruption, possible cross-sensitivity between oxindoles should be taken into account to avoid recurrence between drugs (55).

Oral ulcers

Mouth ulcers are a common symptom during dental treatment. It includes infectious, painful ulcers, skin ulcers, systemic ulcers, malignant ulcers, and other ulcers, including some antibiotics, beta-blockers, platelet aggregation inhibitors, vasodilators, non-steroidal anti-inflammatory drugs, antiretroviral drugs, and antihypertensives. Drugs. Drug-induced oral ulcers are classified as mucosal inflammation due to anticancer drugs such as cytotoxic drugs, bleomycin, 5-fluorouracil, and cisplatin. It is associated with severe pain, requiring the use of strong analgesics such as opioids and modification or discontinuation of chemotherapy.

Cytotoxic and immunosuppressive drugs can cause secondary infections that invade the oral cavity through bacteria such as Gram-negative bacteria and fungi. The second type shows recurrent lesions, also called permanent drug eruptions, requiring alternative medications or dose reduction (56). Stevens-Johnson syndrome (SJS) is characterized by severe effects on mucosal surfaces, including the oral cavity, resulting in severe impairment of the patient's ability to swallow, speak, and chew (57).

Carcinogenesis

Carcinogenesis is a symptom of drug toxicity. In addition to environmental contaminants, the ability of certain drugs to induce cancer has been observed. Almost anything that changes DNA can cause cancer. Tumor formation occurs when genetic mutations develop that affect the regulation of cell growth. In general, many genetic changes are associated with cancer incidence (2). The mouth is often the area most affected by problems during cancer chemotherapy because chemotherapy drugs are very powerful and can damage or destroy oral tissues as a side effect. Stomatitis and gingivitis are common side effects of these drugs and can manifest as painful local or systemic mucositis affecting any oral mucosa, which can alter patients' oral function and reduce their daily activities (58,59).

Idiosyncratic reactions

Idiosyncratic reactions are atypical reactions to medications due to known genetic and enzymatic changes. Many of these responses are unpredictable because many

patients treated with the drug will have idiosyncratic responses. Most of the time, these reactions are not considered normal drug reactions but rather represent manifestations of allergies or side effects that recur in patients who do not tolerate the drug. In the dental field, accidental intravenous injections or fear of injections are misdiagnosed as "idiosyncratic" reactions to local anesthetics. Drugs work in strange ways. Alterations in drug metabolism can cause abnormal responses to certain drugs (e.g., vitamin D, succinylcholine, isoniazid, and phenytoin); however, other mechanisms have been observed, such as unequal distribution. Iron and thyroxine also have an unusual receptor, as does warfarin. An unusual and unpredictable response profile produces effects of the first drug that would never occur in normal people, regardless of the dose (mouth sores, gum bleeding, and rarely warfarin can cause swelling of the lips) (60,61). Primaquine is a new drug used to treat hemolytic anemia in patients with a deficiency of G6PD, an enzyme involved in glucose metabolism. Erythrocytes from weak subjects are not able to synthesize the required reduction, making them susceptible to oxidative damage from primaquine (62).

Drug-Induced Gum Hyperplasia

Gingival hyperplasia usually occurs in front of the jaw and is most common in the "lungs of the mouth." Edentulous areas of the alveolar mucosa are not affected much or less than others. Phenytoin is a common example of a drug that causes gum hyperplasia, which interferes with chewing movements, affects hygiene, causes unpleasant aesthetics, and requires surgical removal. The gums are highly vascular, so surgical treatment with cautery or laser is often preferred. Good oral hygiene can reduce the progression of gingival hyperplasia (63). Drug-induced gingival hyperplasia is also commonly caused by cyclosporine, which is used to prevent graft rejection in transplant patients. Medications and inflammatory conditions determine the pathogenesis of gingival hyperplasia. Calcium channel blockers can also cause gingivitis. Nifedipine has a higher incidence than amlodipine. Men are more affected than women. Enlarged gums can cause difficulty chewing and speaking. Recognizing

and treating gingival hyperplasia is important to help patients continue to live with less pain (64,65).

Conclusion

As new therapeutic agents are introduced into dentistry and medicine, many adverse drug reactions are expected to occur. Dentists should be aware of the adverse drug effects associated with surgery

Acknowledgment: The authors are very appreciative to (the Al-Noor University / College of Dentistry, and the University of Mosul / College of Dentistry) for their help in the progress of this work.

Authors' Contribution

The authors Al-Nuaimy AY and Al-Mashhadane FA designed the study, conducted the experiments, collected data, performed the data analysis, and wrote the manuscript. Al-Mashhadane FA assisted in the study.

Conflict of interest

The authors declare that there are no conflicts of interest regarding the publication of this manuscript.

Declaration of Generative AI and AI-assisted technologies

The authors declare that no generative AI or AI-assisted technologies were used in the preparation of this manuscript. The authors reviewed and edited the content as needed and take full responsibility for the content of the publication.

REFERENCES

1. Teoh L, Moses G, McCullough MJ. A review and guide to drug-associated oral adverse effects, salivary and neurosensory reactions. Part 1. *J Oral Pathol Med*. 2019;48(7):626-636. doi: 10.1111/jop.12911.
2. Grace D, Blandine V-B, Cedric Y. Clinical guidelines - Diagnosis and treatment manual for curative programs in hospitals and dispensaries. Guidance for prescribing. 2024. ISBN: 978-2-37585-253-8.
3. Yuan A, Bin Woo S. Adverse drug events in the oral cavity. *Oral Surg Oral Med Oral Pathol Oral Radiol*. 2015; 119:3547. doi: org/10.1016/j.oooo.2014.09.009.

4. Katzung BG. The Nature of Drugs & Drug Development & Regulation. In: Basic & Clinical Pharmacology, 4th Edition. 2018: p11-19.
5. Gowdar IM, Alhaqbani MM, Almughirah AM, Basalem SA, Alsultan FI, Alkhathlan MR. Knowledge and Practice about Self-Medication for Oral Health Problems among Population in Riyadh Region, Saudi Arabia. *J Pharm Bioallied Sci*. 2021;13(Suppl 1): S246-S250. doi: 10.4103/jpbs.JPBS_702_20.
6. Rathee M, Sapra A. Dental Caries. StatPearls Publishing; 2024. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK551699>.
7. Yeoh, SC., Hua, H., Yepes, J.F., Peterson, D.E. (2018). Oral Manifestations of Systemic Diseases and their Treatments. In: Farah, C., Balasubramaniam, R., McCullough, M. (eds) Contemporary Oral Medicine. Springer, Cham. <https://doi.org/10.1007/978-3-319-28100>.
8. Bahar E, Yoon H. Lidocaine: A Local Anesthetic, Its Adverse Effects and Management. Medicina (Kaunas). 2021 Jul 30;57(8):782. doi: 10.3390/medicina57080782.
9. Bailey, E., Tickle, M., Campbell, S. *et al.* Systematic review of patient safety interventions in dentistry. *BMC Oral Health* **15**, 152 (2015). <https://doi.org/10.1186/s12903-015-0136-1>.
10. Li L, Sun DL. Adverse effects of articaine versus lidocaine in pediatric dentistry: a meta-analysis. *J Clin Pediatr Dent*. 2023 Nov;47(6):21-29. doi: 10.22514/jocpd.2023.078.
11. National Institutes of Health. Oral health in America: advances and challenges. Bethesda (MD): US Department of Health and Human Services, National Institutes of Health, National Institute of Dental and Craniofacial Research; 2021. Accessed February 23, 2022. <https://www.nidcr.nih.gov/sites/default/files/2021-12/Oral-Health-in-America-Advances-and-Challenges.pdf>
12. Plackett B. Research round-up: oral health. *Nature*. 2021 Oct 27. doi: 10.1038/d41586-021-02927-3. Epub ahead of print. PMID: 34707269.
13. Katebi K, Eslami H, Jabbari S. Prevalence and causes of self-medication for oral health problems: a systematic review and meta-analysis. *BMC Oral Health*. 2024 Sep 19;24(1):1115. doi: 10.1186/s12903-024-04900-8.

14. Becker DE. Adverse drug reactions in dental practice. *Anesth Prog.* 2014 Spring;61(1):26-33; quiz 34. doi: [10.2344/0003-3006-61.1.26](https://doi.org/10.2344/0003-3006-61.1.26).
15. Subbulakshmi P, Rajendiran D. (2019). Drug-induced Oral Health Problems: A Comprehensive Review - *Journal of Oral Pathology & Medicine*, 8(10(B)): 20158-163. DOI: [10.24327/ijcar.2019.20163.3929](https://doi.org/10.24327/ijcar.2019.20163.3929)
16. Vozza I. Oral Prevention and Management of Oral Healthcare. *Int J Environ Res Public Health.* 2021 Feb 18;18(4):1970. doi: [10.3390/ijerph18041970](https://doi.org/10.3390/ijerph18041970).
17. Raed AlRowis, Abdulmalik Aldawood, Mohammed AlOtaibi, Essam Alnasser, Ibrahim AlSaif, Abdullah Aljaber, Zuhair Natto, Medication-Related Osteonecrosis of the Jaw (MRONJ): A Review of Pathophysiology, Risk Factors, Preventive Measures and Treatment Strategies, *The Saudi Dental Journal*, Volume 34, Issue 3, 2022, Pages 202-210, ISSN 1013-9052, <https://doi.org/10.1016/j.sdentj.2022.01.003>.
18. Yip DW, Gerriets V. Penicillin. [Updated 2024 Feb 20]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK554560>.
19. Glick A, Sista V, Johnson C. Oral Manifestations of Commonly Prescribed Drugs. *Am Fam Physician.* 2020 Nov 15;102(10):613-621.
20. Parmar, N., Thompson, G. Adverse Drug Reactions: Part 2 Oral Ulceration. *BDJ Student* 30, 26–27 (2023). <https://doi.org/10.1038/s41406-022-0921-7>.
21. Katebi K, Eslami H, Jabbari S. Prevalence and causes of self-medication for oral health problems: a systematic review and meta-analysis. *BMC Oral Health.* 2024 Sep 19;24(1):1115. doi: [10.1186/s12903-024-04900-8](https://doi.org/10.1186/s12903-024-04900-8).
22. US Department of Health and Human Services. Oral health in America: a report of the Surgeon General. Rockville (MD): US Department of Health and Human Services, National Institute of Dental and Craniofacial Research, National Institutes of Health; 2000. Accessed February 23, 2022. <https://www.nidcr.nih.gov/sites/default/files/2017-10/hck1ocv.%40www.surgeon.fullrpt.pdf>
23. Bailey E, Tickle M, Campbell S, et al. Systematic review of patient safety interventions in dentistry. *BMC Oral Health.* 2015; 15:152. doi: [10.1186/s12903-015-0136-1](https://doi.org/10.1186/s12903-015-0136-1).

24. Thanoon AS, Al-Mashhadane FA. Relationship Between Vitamin D Deficiency and Chronic Periodontitis. **Georgian Medical News**. 2023;10(343).
25. Conrads G, About I. Pathophysiology of Dental Caries. **Monogr Oral Sci**. 2018;27: 1-10. doi: [10.1159/000487826](https://doi.org/10.1159/000487826). PMID: 29794423.
26. McCrae JC, Morrison EE, MacIntyre IM, Dear JW, Webb DJ. Long-term adverse effects of paracetamol - a review. **Br J Clin Pharmacol**. 2018;84(10):2218-2230. doi: [10.1111/bcp.13656](https://doi.org/10.1111/bcp.13656).
27. Salih OW, Al-Mashhadane FA, Hamed RS. Impact Of Vitamin D3 Supplementation on Dental Implant Stability. **Military Medical Science Letters**. 2023;92(2):141-147. doi: [10.31482/Mmsl.2022.035](https://doi.org/10.31482/Mmsl.2022.035).
28. Queremel Milani DA, Davis DD. Pain Management Medications. Treasure Island (FL): StatPearls Publishing; 2024 Jan. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK560692>.
29. Kapourani A, Kontogiannopoulos KN, Manioudaki AE, Pouloupoulos AK, Tsalikis L, Assimopoulou AN, Barmpalexis P. A Review on Xerostomia and Its Various Management Strategies: The Role of Advanced Polymeric Materials in the Treatment Approaches. **Polymers (Basel)**. 2022;14(5):850. doi: [10.3390/polym14050850](https://doi.org/10.3390/polym14050850).
30. Mohandoss AA, Thavarajah R. Salivary Flow Alteration in Patients Undergoing Treatment for Schizophrenia: Disease-Drug-Target Gene/Protein Association Study for Side-effects. **J Oral Biol Craniofac Res**. 2019;9(3):286-293. doi: [10.1016/j.jobcr.2019.06.009](https://doi.org/10.1016/j.jobcr.2019.06.009).
31. Gray SL, Perera S, Soverns T, Hanlon JT. Systematic Review and Meta-analysis of Interventions to Reduce Adverse Drug Reactions in Older Adults: An Update. *Drugs Aging*. 2023 Nov;40(11):965-979. doi: [10.1007/s40266-023-01064-y](https://doi.org/10.1007/s40266-023-01064-y).
32. Hodkinson, A., Tyler, N., Ashcroft, D.M. *et al.* Preventable medication harm across health care settings: a systematic review and meta-analysis. *BMC Med* **18**, 313 (2020). <https://doi.org/10.1186/s12916-020-01774-9>
33. Zazzara MB, Palmer K, Vetrano DL, Carfi A, Onder G. Adverse drug reactions in older adults: a narrative review of the literature. *Eur Geriatr Med*. 2021 Jun;12(3):463-473.

- doi: [10.1007/s41999-021-00481-9](https://doi.org/10.1007/s41999-021-00481-9). Epub 2021 Mar 18. Erratum in: Eur Geriatr Med. 2022 Feb;13(1):307. doi: [10.1007/s41999-021-00591-4](https://doi.org/10.1007/s41999-021-00591-4).
354. Katebi K, Eslami H, Jabbari S. Prevalence and causes of self-medication for oral health problems: a systematic review and meta-analysis. BMC Oral Health. 2024 Sep 19;24(1):1115. doi: [10.1186/s12903-024-04900-8](https://doi.org/10.1186/s12903-024-04900-8).
35. Bailey, E., Tickle, M., Campbell, S. *et al.* Systematic review of patient safety interventions in dentistry. BMC Oral Health **15**, 152 (2015). <https://doi.org/10.1186/s12903-015-0136-1>.
36. Akcaboy M, Sahin S, Zorlu P, Şenel S. Ranitidine-induced black tongue: A case report. *Pediatr Dermatol*. 2017 Nov;34(6). doi: [10.1111/pde.13309](https://doi.org/10.1111/pde.13309).
37. Lawoyin D, Brown RS. Drug-induced black hairy tongue: diagnosis and management challenges. Dent Today. 2008 Jan;27(1):60, 62-3
38. Anna Yuan, Sook-Bin Woo, Adverse drug events in the oral cavity, Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology, Volume 119, Issue 1, 2015, Pages 35-47, ISSN 2212-4403, <https://doi.org/10.1016/j.oooo.2014.09.009>.
39. Katebi K, Eslami H, Jabbari S. Prevalence and causes of self-medication for oral health problems: a systematic review and meta-analysis. BMC Oral Health. 2024 Sep 19;24(1):1115. doi: [10.1186/s12903-024-04900-8](https://doi.org/10.1186/s12903-024-04900-8).
40. Roberta G, Angelo VM, Francesco SMC. Main Oral Manifestations in Immune-Mediated and Inflammatory Rheumatic Diseases. *J Clin Med*. 2019;8(1):21. <https://doi.org/10.3390/jcm8010021>.
41. Pugazhenthan T, Singh H, Kumar P, Hariharan B. Is dysgeusia going to be a rare or common side-effect of amlodipine? *Ann Med Health Sci Res*. 2014; 4:43-4. Available from: <http://www.amhsr.org>.
42. Sigaux J, Mathieu S, Nguyen Y, Sanchez P, Letarouilly JG, Soubrier M, Czernichow S, Flipo RM, Sellam J, Daïen C. Impact of type and dose of oral polyunsaturated fatty acid supplementation on disease activity in inflammatory rheumatic diseases: a systematic literature review and meta-analysis. Arthritis Res Ther. 2022 May 7;24(1):100. doi: [10.1186/s13075-022-02781-2](https://doi.org/10.1186/s13075-022-02781-2).

43. Nguyen, Y.; Sigaux, J.; Letarouilly, J.-G.; Sanchez, P.; Czernichow, S.; Flipo, R.-M.; Soubrier, M.; Semerano, L.; Seror, R.; Sellam, J.; et al. Efficacy of Oral Vitamin Supplementation in Inflammatory Rheumatic Disorders: A Systematic Review and Meta-Analysis of Randomized Controlled Trials. *Nutrients* **2021**, *13*, 107. <https://doi.org/10.3390/nu13010107>.
44. Bonelli M, Kerschbaumer A, Kastrati K, Ghoreschi K, Gadina M, Heinz LX, Smolen JS, Aletaha D, O'Shea J, Laurence A. Selectivity, efficacy and safety of JAKinibs: new evidence for a still evolving story. *Ann Rheum Dis*. 2024 Jan 11;83(2):139-160. doi: [10.1136/ard-2023-223850](https://doi.org/10.1136/ard-2023-223850).
45. Abdollahi M, Rahimi R, Radfar M. Current opinion on drug-induced oral reactions: a comprehensive review. **J Contemp Dent Pract**. 2008 Mar 1;9(3):1-15.
- 46- Alfakje T H, Al-Mashhadane F A. (2024). Histopathological Effects of Anabolic Androgenic Steroids (Nandrolone Decanoate) on Heart, Liver, and Kidney of Male Local Rabbits. *Egyptian Journal of Veterinary Sciences* Vol. 55, (Special issue), pp. 1907-1919 (2024).
487. Janas-Naze A, Osica P. The incidence of lidocaine allergy in dentists: An evaluation of 100 general dental practitioners. **Int J Occup Med Environ Health**. 2019;32(3):333-339. doi: <https://doi.org/10.13075/ijomeh.1896.01235>.
48. Sambrook PJ, Smith W, Goss J. Severe adverse reactions to dental local anesthetics: systemic reactions. **Aust Dent J**. 2011; 56:148-153. doi: 10.1111/j.1834-7819.
49. Bina B, Hersh E, Hilario M, Alvarez K, McLaughlin B. True Allergy to Aide Local Anesthetics: A Review and Case Presentation. **Anesth Prog**. 2018;65: 119-123. doi: [j DOI 10.2344/anpr-65-03-06](https://doi.org/10.2344/anpr-65-03-06).
50. Deguchi T, Abe R. Cutaneous Adverse Drug Reaction Caused by Antiepileptic Drug. **Brain Nerve**. 2019;71(4):401-406. doi: [10.11477/mf.1416201284](https://doi.org/10.11477/mf.1416201284).
51. King G, Byrne A, Fleming P. A case of severe NSAID exacerbated respiratory disease (NERD) following a dental procedure in a child. **Eur Arch Paediatr Dent**. 2016;17(4):277-281. doi: [10.1007/s40368-016-0233-0](https://doi.org/10.1007/s40368-016-0233-0).

52. Rose MA, Garcez T, Savic S, Garvey LH. Chlorhexidine allergy in the perioperative setting: a narrative review. **Br J Anaesth**. 2019;123(1): e95-e103. doi: [10.1016/j.bja.2019.01.033](https://doi.org/10.1016/j.bja.2019.01.033).
53. Kallus T, Mjör I. Incidence of adverse effects of dental materials. **Eur J Oral Sci**. 1991;99(3). doi: [org/10.1111/j.1600-0722.1991.tb01890.x](https://doi.org/10.1111/j.1600-0722.1991.tb01890.x)
54. Kalogirou EM, Tosios KI. Fixed drug eruption on the tongue associated with piroxicam: report of two cases and literature review. **Oral Surg Oral Med Oral Pathol Oral Radiol**. 2019;127(5):393-398. doi: [10.1016/j.oooo.2019.01.073](https://doi.org/10.1016/j.oooo.2019.01.073).
55. Jinbu Y, Demitsu T. Oral ulcerations due to drug medications. **Jpn Dent Sci Rev**. 2014;50: 40-46.
56. Gandhi RP, Klein U. Stevens-Johnson Syndrome: A Review and Report of Two Cases. **Pediatr Dent**. 2017;39(1):9-14.
57. Dalia M, Yasmine K, Ashraf HH, Amal A. Prevalence of oral side effects associated with chemo and radiotherapy in head and neck cancer treatment: A cross-sectional study in Egypt. **Oral Oncol Rep**. 2024; 10:100177.
58. González-Arriagada WA, Ottaviani G, Dean D, Ottaviani G, Santos-Silva AR, Treister NS. Oral complications in cancer patients. **Front Oral Health**. 2023;3: 1116885.
59. Kommu S, Carter C, Whitfield P. Adverse Drug Reactions. [Updated 2024 Jan 10]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK599521/>,
60. Caron P, Grunenwald S, Persani L, Borson-Chazot F, Leroy R, Duntas L. Rev Endocr Metab Disord. 2022 Jun;23(3):463-483. doi: [10.1007/s11154-021-09691-9](https://doi.org/10.1007/s11154-021-09691-9). Epub 2021 Oct 20. PMID: 34671932
61. Padayachee N, Matesun D, Matlala M, Vagiri R. Adverse drug reactions, a guide for dentists. **S Afr Dent J**. 2023;78(1):32-36.
62. Tawfik NO, Atarbashe RKH. Amlodipine and oral health. *Al-Rafidain Dent J*. 2014;14(1):111-114.
63. Rapone B, Ferrara E, Santacroce L, Cesarano F, Arazzi M, Liberato LD, Scacco S, Grassi R, Grassi FR, Gnani A, Nardi GM. Periodontal Microbiological Status Influences the

Occurrence of Cyclosporine-A and Tacrolimus-Induced Gingival Overgrowth.

Antibiotics (Basel). 2019;8(3): E124.

64. Gopinath S, Harishkumar VV, Santhosh VC, Puthalath S. Case report on a low dose of Cilnidipine: A fourth-generation calcium channel blocker-induced gingival overgrowth. J Indian Soc Periodontol. 2019;23(4):377-380.

الآثار الجانبية المتنوعة للأدوية في تجويف الفم: دراسة مراجعة

أسماء يوسف ذنون النعيمي¹ فيحاء أزهر المشهداني²

1 فرع علوم طب الاسنان الاساسية، كلية طب الأسنان، جامعة النور، الموصل، العراق.

2 فرع علوم طب الاسنان الاساسية، جامعة الموصل، الموصل، العراق.

الملخص

إن المظاهر السريرية للآثار الضارة للأدوية في تجويف الفم متنوعة. لقد أحدثت العوامل العلاجية الجديدة ثورة في علاج العديد من الأمراض، ولكنها ارتبطت بالعديد من الأحداث الضارة في الفم. تركز هذه الدراسة على المظاهر السريرية الأساسية لتفاعلات الأدوية الفموية، مثل القرحة والالتهابات وجفاف الفم وتفاعلات الليشينيود والتصبغ والآفات البيضاء وفرط التنسج والتنميل ونخر العظم والوذمة الوعائية والأورام الخبيثة. يجب أن يكون أطباء الأسنان الذين يقدمون الرعاية الصحية الفموية على دراية بهذه الاختبارات لأنهم سيواجهونها في ممارستهم.

الكلمات المفتاحية: دواء، أسنان، تجويف الفم، آثار جانبية.