Journal of Advanced Medical and Dental Sciences Research

@Society of Scientific Research and Studies ***NLM ID:*** *101716117*

Journal home page: www.jamdsr.comdoi: 10.21276/jamdsrIndian Citation Index (ICI) Index Copernicus value = 91.86

(e) ISSN Online: 2321-9599; (p) ISSN Print: 2348-6805

Original Research

Assessment of cancer chemotherapy-induced oral dysesthesia and toothache

[1]Anmol Bagaria, [2]Ashish Chandra [3]Pinky Pavithran, [4]Nandini Chandla, [5]Anmol Razdan, [6]Afshan

[1]BDS, MSc., FAGE, PGDAC, FFA, Private Practitioner, Mumbai, Maharashtra, India;
[2]BDS, MDS Oral Medicine and Radiology, IDST Kadrabad, Uttar Pradesh, India;
[3]PG 3rd year, Department of Oral and Maxillofacial Pathology, Malabar Dental College and Research Centre, Vattamkulam, Kerala, India;
[4]BDS Intern, Dr Harvansh Singh Judge Institute of Dental Sciences and Hospital, Chandigarh, India;
[5]PG 3rd year, Oral Medince and Radiology, I.T.S CDSR Muradngar Ghaziabad, Uttar Pradesh, India;
[6] PG 2nd year, Department of Oral Pathology and Microbiology, Malabar Dental College and Research Centre, Vattamkulam, Kerala, India

ABSTRACT:
Background: Conventional chemotherapeutic agents are cytotoxic to all replicating cells and do not target specific cancer cells; many adverse effects are attributable to this lack of discrimination. The present study was conducted to assess cancer chemotherapy-induced oral dysesthesia and toothache. **Materials & Methods:** 34 patients referred to oral and maxillofacial surgery for oral adverse events related to cancer chemotherapy of both genders were included. Oral adverse events in patients were divided according to the categories of CTCAE v5.0. **Results:** Out of 34 patients, males were 24 and females were 10. Common clinical features were oral dysesthesia seen in 21, tooth ache in 8 and Oral dysesthesia & toothache in 5 cases. The difference was significant (P< 0.05). **Conclusion:** Oral dysesthesia and toothache are low-grade chemotherapy-induced adverse events in most of the patients.
Key words: chemotherapy-induced adverse events, Oral dysesthesia, toothache

Received: 22 November, 2021 Accepted: 28 December, 2021

Corresponding author: Anmol Bagaria, BDS, MSc., FAGE, PGDAC, FFA, Private Practitioner, Mumbai, Maharashtra, India

This article may be cited as: Bagaria A, Chandra A, Pavithran P, Chandla N, Razdan A, Afshan. Assessment of cancer chemotherapy-induced oral dysesthesia and toothache. J Adv Med Dent Scie Res 2022;10(1):80-82.

INTRODUCTION

Cancer is the second-leading cause of death in the United States. At some point in time, many dental patients will be undergoing cancer treatment. Conventional chemotherapeutic agents are cytotoxic to all replicating cells and do not target specific cancer cells; many adverse effects are attributable to this lack of discrimination.[1] Many new cancer drugs are referred to as targeted therapy because they target dysregulated signaling pathways specific to a particular type of cancer to inhibit cancer cell growth or survival. As these therapies do not simply target any and all replicating cells, their effects promise to be more specific than conventional chemotherapy.[2]

Adverse events from chemotherapy have also been increasing. The common oral adverse events include oral mucositis, dry mouth, and dysgeusia.[3] Patients suffering from mucosal discomfort without mucosal change and tooth hypersensitivity are more frequently seen at present, probably because of newly developed chemotherapeutic agents. These mucosal and tooth complications are divided into oral dysesthesia and toothaches.[4] Oral dysesthesia and toothache, which are classified as gastrointestinal disorders, are relatively low-grade adverse events, but it is unclear whether it is appropriate to classify them as gastrointestinal disorders even though they include perceptual complications. Among oral adverse events, the clinical characteristics and treatment strategies for oral mucositis and dry mouth have been well described.[5] The present study was conducted to assess cancer chemotherapy-induced oral dysesthesia and toothache.

MATERIALS & METHODS

The present study comprised of 34 patients referred to oral and maxillofacial surgery for oral adverse events related to cancer chemotherapy of both genders. All were informed regarding the study and their written consent was obtained.

Data such as name, age, gender etc. was recorded. Oral adverse events in patients were divided according to the categories of CTCAE v5.0. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Gender	Male	Female
Number	24	10

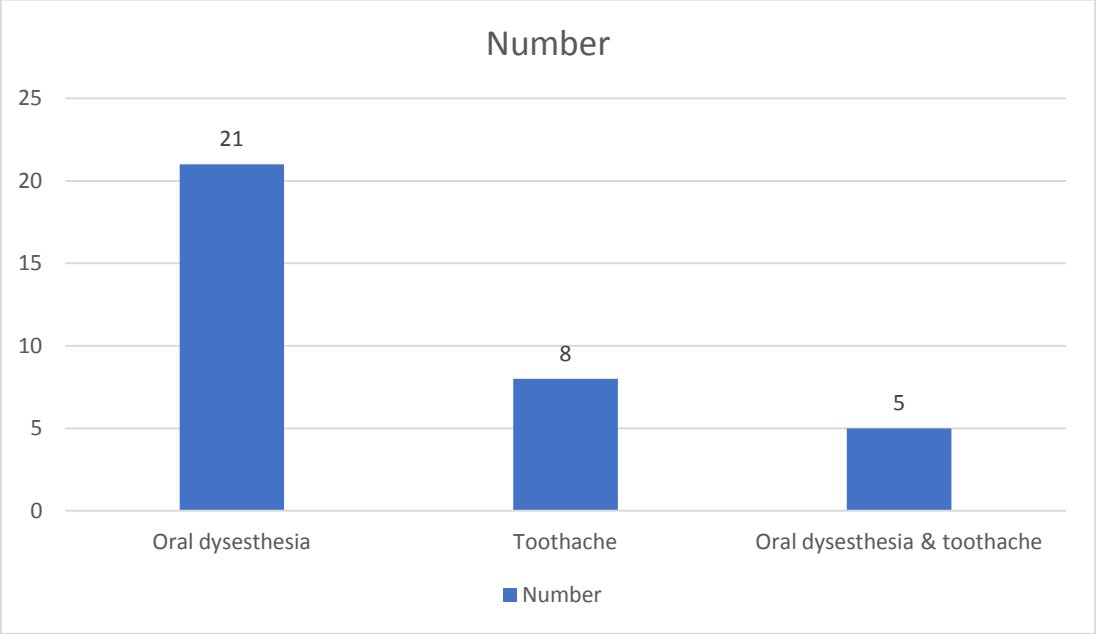
Table I shows that out of 34 patients, males were 24 and females were 10.

Table II Clinical features

Clinical features	Number	P value
Oral dysesthesia	21	0.02
Toothache	8	
Oral dysesthesia & toothache	5	

Table II, graph I shows that common clinical features were oral dysesthesia seen in 21, tooth ache in 8 and Oral dysesthesia & toothache in 5 cases. The difference was significant (P< 0.05).

Graph I Clinical features



DISCUSSION

Expert-based recommendations have been provided for management of mucositis/stomatitis caused by targeted therapies, including EGFR and mTOR inhibitors.[6,7] Preventive measures are key and similar to those recommended before the start of conventional head and neck radiation or chemotherapy, including a comprehensive oral examination and elimination of sources of infection and trauma.[8] During treatment with agents that may cause mIAS, mucositis, stomatitis, or lichenoid reactions, patients should avoid commonly irritating agents such as alcohol- or peroxide-based mouthwashes, spicy foods, and sharp foods that may traumatize the mucosa.[9] Additionally, good oral hygiene should be emphasized, as it may help to prevent or decrease the severity of mucositis. Diffuse oral mucositis associated with EGFR inhibitors, mIAS, and symptomatic lichenoid reactions can be treated with topical steroid rinses such as 0.05 mg/5 mL–dexamethasone solution.[10] Localized lesions can be treated with topical steroid gels such as 0.05% clobetasol propionate. Additionally, topical antifungal therapy may be administered concomitantly with topical steroids for prevention of an opportunistic candidal infection. Concomitant use of topical steroids and antifungals is recommended on a case-by-case basis, especially if patients have additional risk factors, such as hyposalivation.[11] The present study was conducted to assess cancer chemotherapy-induced oral dysesthesia and toothache.

We found that out of 34 patients, males were 24 and females were 10. Hino et al[12] in their study a total of 180 patients were referred to the oral surgery clinic. Oral dysesthesia and/or toothache was found in 15 cases, which included 13 with oral dysesthesia, 4 with toothache, and 2 with both oral dysesthesia and toothache. Of these 15 cases, 13 had concomitant occurrence of peripheral neuropathy (PN) (86.7%, P = 0.0037) and 12 cases had dysgeusia (80.0%, P = 0.0176). Symptoms of oral dysesthesia and/or toothache continued after chemotherapy in 10 of 15 cases with the continuation of accompanied PN (66.7%) and/or dysgeusia and persisted for more than 6 months in 5 cases (33.3%).

We found that common clinical features were oral dysesthesia seen in 21, tooth ache in 8 and Oral dysesthesia & toothache in 5 cases. Oral dysesthesia is a gastrointestinal disorder and is characterized by a burning or tingling sensation on the lips, tongue, or the entire mouth (CTCAE v5.0). In CTCAE v5.0, oral pain, which is defined as a disorder characterized by a sensation of marked discomfort in the mouth, tongue, or lips, presents as a complication of the oral mucosa, similarly to oral dysesthesia. It is difficult to distinguish these two events clinically; thus, in this study, the term "oral dysesthesia" was used to describe mucosal discomfort without mucosal change. Toothache is also a gastrointestinal disorder and is characterized by a sensation of marked discomfort in the tooth (CTCAE v5.0). There are no criteria that describe tooth hypersensitivity and discomfort other than "toothache" in CTCAE v5.0. The precise study of oral dysesthesia and toothache is rare.[13]

The US Food and Drug Administration currently uses the Oral Mucositis Assessment Scale, which is graded based on size and location of erythema or ulceration. Concerns regarding the inadequacy of existing mucositis grading scales in assessing mIAS have been previously mentioned. They noted that a mucositis scale based only on the size of a lesion may underestimate the severity in patients with mIAS, in whom the lesion may be small yet the pain level and negative impact on quality of life may be significant, requiring dose adjustment or interruption of treatment. Several suggestions have been made for creating class-specific grading scales that characterize specific oral adverse events and assess quality of life.[14]

CONCLUSION

Authors found that oral dysesthesia and toothache are low-grade chemotherapy-induced adverse events in most of the patients.

REFERENCES

1. Quasthoff S, Hartung HP. Chemotherapy-induced peripheral neuropathy. J Neurol 2002;249:9-17.
2. Gutierrez-Gutierrez G, Sereno M, Miralles A, Casado-Saenz E, Gutierrez-Rivas E. Chemotherapy-induced peripheral neuropathy: Clinical features, diagnosis, prevention and treatment strategies. Clin Transl Oncol 2010;12:81-91.
3. Bernhardson BM, Tishelman C, Rutqvist LE. Chemosensory changes experienced by patients undergoing cancer chemotherapy: A qualitative interview study. J Pain Symptom Manage 2007;34:403-12.
4. Feller L, Fourie J, Bouckaert M, Khammissa RA, Ballyram R, Lemmer J. Burning mouth syndrome: Aetiopathogenesis and principles of management. Pain Res Manag 2017;2017:1926269.
5. Coculescu EC, Radu A, Coculescu BI. Burning mouth syndrome: A review on diagnosis and treatment. J Med Life 2014;7:512-5.
6. Yilmaz Z, Renton T, Yiangou Y, Zakrzewska J, Chessell IP, Bountra C, et al. Burning mouth syndrome as a trigeminal small fibre neuropathy: Increased heat and capsaicin receptor TRPV1 in nerve fibres correlates with pain score. J Clin Neurosci 2007;14:864-71.
7. Areti A, Yerra VG, Naidu V, Kumar A. Oxidative stress and nerve damage: Role in chemotherapy induced peripheral neuropathy. Redox Biol 2014;2:289-95.
8. de Moraes M, do Amaral Bezerra BA, da Rocha Neto PC, de Oliveira Soares AC, Pinto LP, de Lisboa Lopes Costa A. Randomized trials for the treatment of burning mouth syndrome: An evidence-based review of the literature. J Oral Pathol Med 2012;41:281-7.
9. Clark D, Levin L. Tooth hypersensitivity treatment trends among dental professionals. Quintessence Int 2018;49:147-51.
10. Hong CH, Hu S, Haverman T, Stokman M, Napeñas JJ, Braber JB, et al. A systematic review of dental disease management in cancer patients. Support Care Cancer 2018;26:155-74.
11. Olczak-Kowalczyk D, Krasuska-Sławińska E, Brożyna A, Turska-Szybka A, Dembowska-Bagińska B. Dental caries in children and adolescents during and after antineoplastic chemotherapy. J Clin Pediatr Dent 2018;42:225-30.
12. Hino S, Yamada M, Iijima Y, Fujita Y, Sano M, Kaneko T, et al. Cancer chemotherapy-induced oral adverse events: Oral dysesthesia and toothache - A retrospective study. Ann Maxillofac Surg 2021;11:86-90.
13. Dy GK, Adjei AA. Understanding, recognizing, and managing toxicities of targeted anticancer therapies. CA Cancer J Clin. 2013;63(4):249-279.
14. Ruggiero SL, Dodson TB, Fantasia J, et al. American Association of Oral and Maxillofacial Surgeons position paper on medication-related osteonecrosis of the jaw—2014 update. J Oral Maxillofac Surg. 2014;72(10):1938-1956.