Journal of Population Therapeutics & Clinical Pharmacology

RESEARCH ARTICLE
DOI: 10.47750/jptcp.2022.953

Prevalence Of Oral Reactive Lesions Among Oral Biopsies - An Institutional Based Study

Aathira. C. M[1], Dr. Abilasha R[2*]

[1]Graduate Student, Saveetha Dental College, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai 77, Tamil Nadu, India

[2]Professor, Department of Oral Pathology, Saveetha Dental College, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai 77, Tamil Nadu, India

***Corresponding author**: Dr. Abilasha. R, Department of Oral Pathology, Saveetha Dental College, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai 77, Tamil Nadu, India, Email: abilasha@saveetha.com

Submitted: 10 February 2022; Accepted: 15 April 2022; Published: 21 June 2022

ABSTRACT

Introduction: Gingival mucosa is very often under mild irritation as a result of masticatory forces, entrapment of food debris, ill fitting appliances and the multitudinous array of normal microflora which may turn pathogenic under altered circumstances. The response of the gingival mucosa towards these irritants sometimes turn out to be hyperplastic which may lead to a class of oral reactive lesions namely inflammatory fibroepithelial hyperplasia, Pyogenic granuloma, angiomatous granuloma, peripheral ossifying fibromyalgia and central giant cell granuloma.

Aim: The study aims to assess the prevalence of oral reactive lesions who reported to the dental institution.

Materials and methods: All the data regarding the study population was obtained from DIAS(Dental Information Archiving Software)- all patient records from management. The data collected was tabulated and imported to SPSS software. Statistical analysis was done using Chi square tests.

Results: results from the study indicate that inflammatory fibroepithelial hyperplasia is highly prevalent followed by angiomatous granuloma. And also, females between the age group 30 - 40 years commonly presented with oral reactive lesions when compared to males. ‘

Conclusion: Therefore from the results obtained, it can be concluded that amongst the oral reactive lesions inflammatory fibroepithelial hyperplasia was highly prevalent among females of age 30 - 40 years.

Keywords: *Gingival reactive lesions, histopathology, innovative technique, peripheral giant cell granuloma, Pyogenic granuloma, inflammatory fibroepithelial hyperplasia*

INTRODUCTION

Reactive lesions are clinicopathological benign, reactive, solitary and occur as a result of chronic and recurrent tissue injury leading to exuberant tissue response (1)(2). Previous research done in OPMD and Cancers by our team (3)(4)(5,6)(5,7). It is commonly seen in the gingiva of the oral cavity and also occurs in other sites of oral cavity as well(8–10) Although it is benign, it has a tendency to appear again followed by complete excision and inability to remove local irritants(11). Carbon dioxide laser usage has been preferred over surgical excision nowadays because of its minimal recurrence followed by maintenance of oral hygiene and regular follow ups (12)

This is a critical deficiency as proper diagnosis and treatment demands the knowledge of the respective probability of possible lesions (13). Reactive lesions are less likely to be seen in sites like tongue, palate,cheek and floor of the mouth (14). Clinical features of these lesions include sessile or pedunculated masses with smooth or injured surface,seen in different colours ranging from bright pink to red (15). It is possible to identify these lesions with a typical histopathological pattern or feature; it can be divided into vascular and fibrous types (16). The clinical appearance of these lesions represent neoplastic lesions which makes it difficult to diagnose the condition appropriately often for the dentists. Previous research done in OPMD and Cancers by our team (17) (17,18) (19) (20)

Various studies have demonstrated the difference in type of reactive lesions in accordance with age, gender, location and clinical behaviour of these lesions in different populations . In the literature, some studies demonstrated exceptionally the histopathological feature of these lesions in the oral cavity (21–23).

It was also found that there does not exist much difference in the clinical presentation of various oral reactive lesions and so Periodontologist and Oral and Maxillofacial Surgeons often refer and call the diagnostic term as “epulis “ (24). Diagnosis of each of these lesions depends on the clinical as well as radiographic features and serves as a key for diagnosis (25). Most of the data regarding these lesions are from the Western countries which reveals that reactive lesions of the oral cavity have not yet been studied in Indian population (26)

The aim of the study is to assess the prevalence of oral reactive lesions in the biopsies received in the Oral Pathology Department . It also deals with the clinical and histopathological differences, prevalence in different age groups and various other inclusion factors. Our team has extensive knowledge and research experience that has translate into high quality publications (27–36)

MATERIALS AND METHODS

The study was designed to include all patients with oral reactive lesions reported to the Department. Patients who did not fall under this inclusion criteria were excluded. The study was based on the Random sampling method. To minimise the sampling bias, all the cases were reviewed priorly and included. Data collection was done using the patient database with the time framework of 1st March 2020 to 31st March 2021. About 52 patient data was collected and those fitting under the inclusion criteria were included. Cross verification of data was done by a reviewer. The data collected was tabulated based on the following parameters

Patient's demographic details
Type of oral reactive lesions
Age
Gender

The variables were coded and the data was imported to SPSS Version 20 categorical variables were expressed in terms of frequency and bar graphs were plotted. The statistical significance of the associations were tested using Chi square test.

RESULTS

Figure 1 explains the prevalence of various oral reactive lesions among which inflammatory fibro epithelial hyperplasia was found to be most common (39%). Figure 2 shows that males are more prone to be affected by inflammatory fibro epithelial hyperplasia (20%). Chi square test was done to find the association between the variables and was found to be statistically insignificant (p value is 0.062).Figure 3 shows that people between 20 and 30 years are more likely to be affected by various oral reactive lesions ranging from inflammatory fibro epithelial hyperplasia to angiomatous granuloma when compared to people of other age groups. Chi square test was done to find the association between the variables and was found to be statistically insignificant (p value is 0.423).

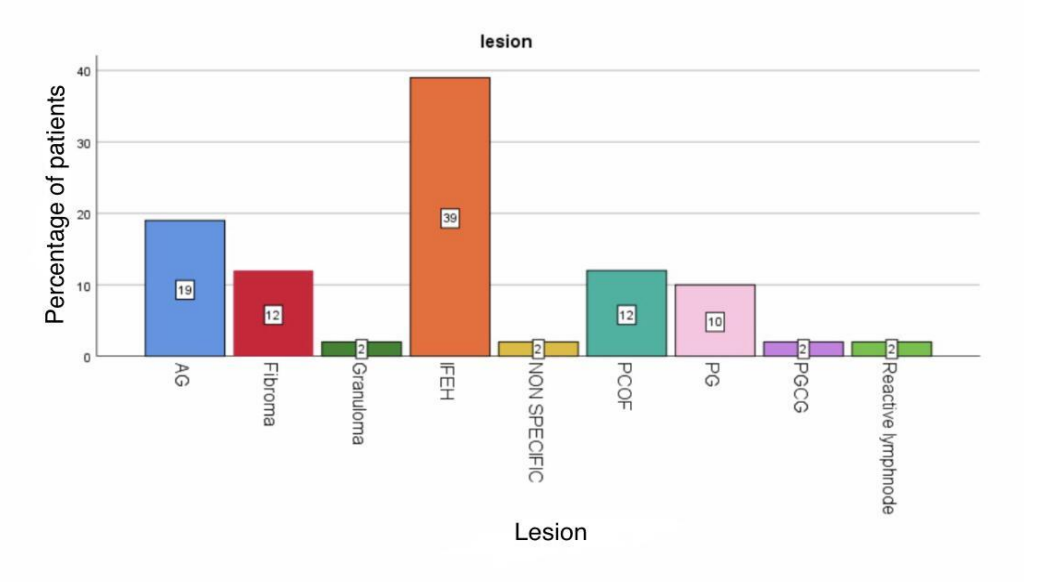

FIGURE 1: shows the prevalence of various reactive lesions . X axis represents the lesion and Y axis represents the number of participants. Majority (39%) showed that inflammatory fibro epithelial hyperplasia was found to be most common.

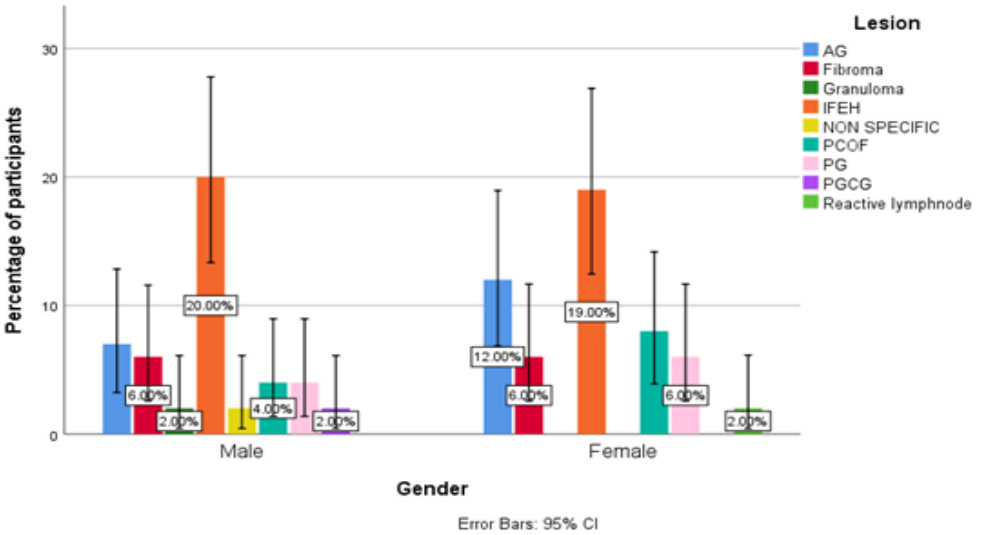

FIGURE 2: shows the association graph between gender and oral reactive lesion. X axis represents gender and Y axis represents the number of participants. Among the genders, males are more commonly affected by oral reactive lesions. Among males, inflammatory fibroepithelial hyperplasia was found to be more prevalent at about 20%. Among females also, inflammatory fibroepithelial hyperplasia was more common at about 19%. Collectively among the gender, males are more likely to be presenting with inflammatory fibroepithelial hyperplasia with a very little difference. p value is 0.062 (p>0.05) showing the insignificance.

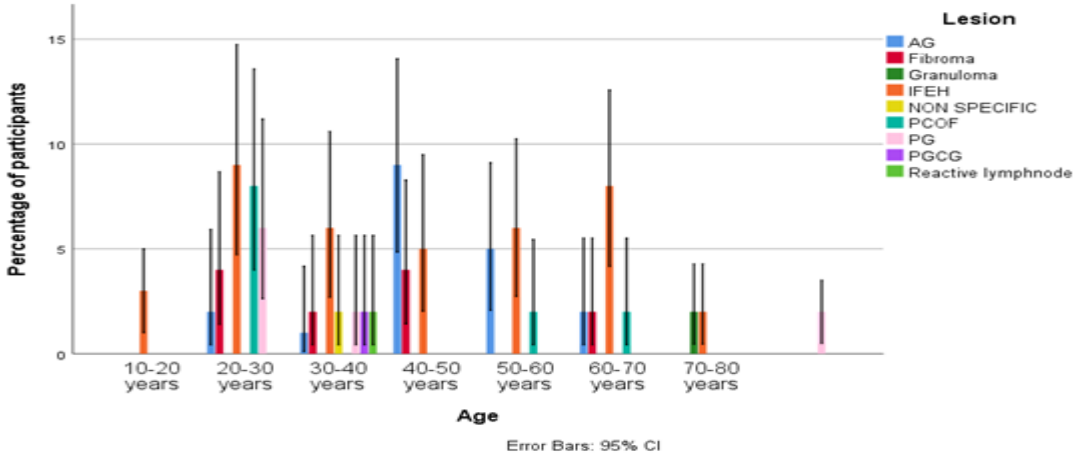

FIGURE 3 shows the association graph between age and oral reactive lesions. . X axis represents age and Y axis represents the number of participants. Among the selected age group, younger age groups were commonly affected. Between the above selected age groups, 20 -30 years, 40 -50 years and 50 - 60 years were mostly affected by oral reactive lesions. Among which , 20 - 30 years patients were found to be affected by a wide variety of 5 different oral reactive lesions. p value is 0.423 (p>0.05) showing the insignificance.

J Popul Ther Clin Pharmacol Vol 29(2):e131–e139; 21 June 2022.

DISCUSSION

The majority (39%) prevalence is exhibited by inflammatory fibroepithelial hyperplasia followed by 19% prevalence of angiomatous granuloma and the rest is a mixed result of reactive lesions. Opposingly there was a study which revealed that pyogenic granuloma was the most common reactive lesion found in that population which was the least prevalent oral reactive lesion in this study (37)(38). However another study suggested that focal fibrous hyperplasia is the most common lesion (39). Pyogenic granulomas was seen to be the least presented lesion in this study. In the present study, it was commonly found to be present in people aged above 60 years. A study conducted by Vilman and others stated that it was more commonly seen in the third decades of life and particularly in females (40). Poor oral hygiene may contribute to pyogenic granuloma was found out in a study (41). Vascular endothelial growth factor, connective tissue growth factor and fibroblast growth factor have triggered the rapid growth and angiogenesis of pyogenic granuloma (42)(43)(44). Another least prevalent lesion was peripheral cemento ossifying fibroma which showed a bimodal peak at 2nd and 3rd decades of life followed by a rapid decline in the peak which proves that it is age dependent and affects the younger age group often which was proven in previous studies (25). Another study conducted by Eversole and Rovin explained that loss of periodontium which occurs as a result of loss of tooth in old age supports the fact that this lesion often affects the younger age group (2).

In our study both males and females exhibited inflammatory fibroepithelial hyperplasia to be the most prevalent lesion ranging about 20% in males and 19% in females followed by angiomatous granuloma which was about 13% in females and 6% in males. A study conducted by Hamedieh et al shows contradictory results in which females were most affected with gingiva being the most common site and also a study by Effiom et al supports the evidence (45).

Peripheral giant cell granuloma was surprisingly seen to be affected only 2% of males and none of the females reported with that kind of lesion in this study.It showed a consistent pattern with other studies. Unlike other lesions, these were confined to the gingiva (46,47) (38) (48) (49)

It was shown in our study that people at a younger age group (20-30) years were more commonly affected by these oral reactive lesions. Granuloma, peripheral giant cell granuloma and pyogenic granuloma was rarely present in younger age groups. Some studies show that pyogenic granuloma, peripheral fibroma and fibrous hyperplasia were the most common lesions(50)(51) Similar studies concluded that pyogenic granuloma was the most common lesion (52).

CONCLUSION

Within the limits of the study, it can be concluded that males are more affected by reactive lesions of the oral cavity . Other studies may show contradictory results as it may vary depending on the geographic location, age, gender, socio economic status, population reported to the Oral Pathology Department and other environmental factors. Future studies can emphasise on a wide range of population so that it may influence the outcome of the study and also with some inclusion and exclusion criterias.

ACKNOWLEDGEMENTS

The authors would like to acknowledge the help support rendered by saveetha dental college and hospital,saveetha Institute of Medical and Technical Sciences ,Saveetha University,chennai

FUNDING SUPPORT

The present project is funded by Saveetha Institute of Medical and Technical sciences , Saveetha Dental college and Hospitals , Saveetha University, Royal Medicals, Dindigul

CONFLICTS OF INTEREST

The authors declare declare no potential conflict of interest

REFERENCES

1. Shenoy SS, Dinkar AD. Pyogenic granuloma associated with bone loss in an eight year old child: A case report [Internet]. Vol. 24, Journal of Indian Society of Pedodontics and Preventive Dentistry. 2006. p. 201. Available from: http://dx.doi.org/10.4103/0970-4388.28078
2. Eversole LR, Rovin S. Reactive lesions of the gingiva [Internet]. Vol. 1, Journal of Oral Pathology & Medicine. 1972. p. 30–8. Available from: http://dx.doi.org/10.1111/j.1600-0714.1972.tb02120.x
3. Yamunadevi A, Pratibha R, Rajmohan M, Ganapathy N, Porkodisudha J, Pavithrah D, et al. Molecular insight into odontogenesis in hyperglycemic environment: A systematic review [Internet]. Vol. 12, Journal of Pharmacy And Bioallied Sciences. 2020. p. 49. Available from: http://dx.doi.org/10.4103/jpbs.jpbs_159_20
4. Antony JVM, Vini Mary Antony J, Ramani P, Ramasubramanian A, Sukumaran G. Particle size, penetration rate and effects of smoke and smokeless tobacco products – an invitro analysis [Internet]. Vol. 7, Heliyon. 2021. p. e06455. Available from: http://dx.doi.org/10.1016/j.heliyon.2021.e06455
5. R H, Hannah R, Ramani P, Ramanathan A, Jancy MR, Gheena S, et al. CYP2 C9 polymorphism among patients with oral squamous cell carcinoma and its role in altering the metabolism of benzo[a]pyrene [Internet]. Vol. 130, Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology. 2020. p. 306–12. Available from: http://dx.doi.org/10.1016/j.oooo.2020.06.021
6. Analysis of Prevalence of Oral Squamous Cell Carcinoma in Patients with History of Chronic Irritation of Oral Tissues - A Retrospective Study [Internet]. Indian Journal of Forensic Medicine & Toxicology. 2020. Available from: http://dx.doi.org/10.37506/ijfmt.v14i4.12511
7. Umashankar K, R. A, R. H, Ramani P, S. G. Knowledge and Attitude About COVID-19 Pathogenesis Among Oral Pathologists in Chennai [Internet]. Vol. 12, International Journal of Current Research and Review. 2020. p. 143–51. Available from: http://dx.doi.org/10.31782/ijcrr.2020.sp17
8. Fujita R, Jass JR, Kaminishi M, Schlemper RJ. Early Cancer of the Gastrointestinal Tract: Endoscopy, Pathology, and Treatment. Springer Science & Business Media; 2008. 275 p.
9. Stablein MJ, Silverglade LB. Comparative Analysis of Biopsy Specimens from Gingiva and Alveolar Mucosa [Internet]. Vol. 56, Journal of Periodontology. 1985. p. 671–6. Available from: http://dx.doi.org/10.1902/jop.1985.56.11.671
10. Philip Sapp J, Eversole LR, Wysocki GP. Contemporary Oral and Maxillofacial Pathology. Mosby Incorporated; 2004. 450 p.
11. Lee FD. A comparative study of Kaposi's sarcoma and granuloma pyogenicum in Uganda [Internet]. Vol. 21, Journal of Clinical Pathology. 1968. p. 119–28. Available from: http://dx.doi.org/10.1136/jcp.21.2.119
12. Schoelch ML, Sekandari N, Regezi JA, Silverman S. Laser management of oral leukoplakias: A follow-up study of 70 patients [Internet]. Vol. 109, The Laryngoscope. 1999. p. 949–53. Available from: http://dx.doi.org/10.1097/00005537-199906000-00021
13. Cardesa A, Slootweg PJ, Gale N, Franchi A. Pathology of the Head and Neck. Springer; 2017. 854 p.
14. White JM, Chaudhry SI, Kudler JJ, Sekandari N, Schoelch ML, Silverman S. Nd:YAG and CO2Laser Therapy of Oral Mucosal Lesions [Internet]. Vol. 16, Journal of Clinical Laser Medicine & Surgery. 1998. p. 299–304. Available from: http://dx.doi.org/10.1089/clm.1998.16.299
15. Neville BW, Damm DD, Allen CM, Chi AC. Epithelial Pathology [Internet]. Color Atlas of Oral and Maxillofacial Diseases. 2019. p. 223–71. Available from: http://dx.doi.org/10.1016/b978-0-323-55225-7.00010-5

16. Sapp JP, Philip Sapp J, Eversole LR, Wysocki GP. Developmental Disturbances of the Oral Region [Internet]. Contemporary Oral and Maxillofacial Pathology. 2004. p. 1–44. Available from: http://dx.doi.org/10.1016/b978-0-323-01723-7.50006-9
17. K M, Monica K, Vijayshree PJ, Gheena S, Ramani P, Abhilasha R, et al. IN SILICO GENE EXPRESSION ANALYSIS OF CRUCIAL CELL CYCLE CONTROL GENE CDKN2A AND CDKN2B IN HEAD AND NECK SQUAMOUS CELL CARCINOMA [Internet]. Vol. 23, Annals of Tropical Medicine & Public Health. 2020. Available from: http://dx.doi.org/10.36295/asro.2020.232323
18. Sinduja P, Ramani P, Gheena S, Ramasubramanian A. Expression of metallothionein in oral squamous cell carcinoma: A systematic review [Internet]. Vol. 24, Journal of Oral and Maxillofacial Pathology. 2020. p. 143. Available from: http://dx.doi.org/10.4103/jomfp.jomfp_137_19
19. Ramani P, Krishnan R, Karunagaran M, Muthusekhar MR. Odontogenic sarcoma: First report after new who nomenclature with systematic review [Internet]. Vol. 24, Journal of Oral and Maxillofacial Pathology. 2020. p. 157. Available from: http://dx.doi.org/10.4103/jomfp.jomfp_14_20
20. Ramasubramanian A, Ramani P, Sherlin H, Premkumar P, Natesan A, Thiruvengadam C. Immunohistochemical evaluation of oral epithelial dysplasia using cyclin-D1, p27 and p63 expression as predictors of malignant transformation [Internet]. Vol. 4, Journal of Natural Science, Biology and Medicine. 2013. p. 349. Available from: http://dx.doi.org/10.4103/0976-9668.117011
21. Carbone M, Broccoletti R, Gambino A, Carrozzo M, Tanteri C, Calogiuri PL, et al. Clinical and histological features of gingival lesions: A 17-year retrospective analysis in a northern Italian population [Internet]. Medicina Oral Patología Oral y Cirugia Bucal. 2012. p. e555–61. Available from: http://dx.doi.org/10.4317/medoral.17809
22. Megarbane JM, Kassir A, Mokbel N, Naaman N. Root Resection and Hemisection Revisited. Part II: A Retrospective Analysis of 195 Treated Patients with Up to 40 Years of Follow-up [Internet]. Vol. 38, The International Journal of Periodontics & Restorative Dentistry. 2018. p. 783–9. Available from: http://dx.doi.org/10.11607/prd.3797
23. Eversole LR. Clinical Outline of Oral Pathology: Diagnosis and Treatment. PMPH-USA; 2001. 469 p.
24. Sapp JP, Philip Sapp J, Eversole LR, Wysocki GP. Oral Infections [Internet]. Contemporary Oral and Maxillofacial Pathology. 2004. p. 207–51. Available from: http://dx.doi.org/10.1016/b978-0-323-01723-7.50012-4
25. Kfir Y, Buchner A, Hansen LS. Reactive Lesions of the Gingiva: A Clinicopathological Study of 741 Cases [Internet]. Vol. 51, Journal of Periodontology. 1980. p. 655–61. Available from: http://dx.doi.org/10.1902/jop.1980.51.11.655
26. Kleinman DV, Swango PA, Pindborg JJ. Epidemiology of oral mucosal lesions in United States schoolchildren: 1986-87. Community Dent Oral Epidemiol. 1994 Aug;22(4):243–53.
27. Neelakantan P, Grotra D, Sharma S. Retreatability of 2 mineral trioxide aggregate-based root canal sealers: a cone-beam computed tomography analysis. J Endod. 2013 Jul;39(7):893–6.
28. Aldhuwayhi S, Mallineni SK, Sakhamuri S, Thakare AA, Mallineni S, Sajja R, et al. Covid-19 Knowledge and Perceptions Among Dental Specialists: A Cross-Sectional Online Questionnaire Survey. Risk Manag Healthc Policy. 2021 Jul 7;14:2851–61.
29. Sheriff KAH, Ahmed Hilal Sheriff K, Santhanam A. Knowledge and Awareness towards Oral Biopsy among Students of Saveetha Dental College [Internet]. Vol. 11, Research Journal of Pharmacy and Technology. 2018. p. 543. Available from: http://dx.doi.org/10.5958/0974-360x.2018.00101.4

30. Markov A, Thangavelu L, Aravindhan S, Zekiy AO, Jarahian M, Chartrand MS, et al. Mesenchymal stem/stromal cells as a valuable source for the treatment of immune-mediated disorders. Stem Cell Res Ther. 2021 Mar 18;12(1):192.
31. Jayaraj G, Ramani P, Herald J. Sherlin, Premkumar P, Anuja N. Inter-observer agreement in grading oral epithelial dysplasia – A systematic review [Internet]. Vol. 27, Journal of Oral and Maxillofacial Surgery, Medicine, and Pathology. 2015. p. 112–6. Available from: http://dx.doi.org/10.1016/j.ajoms.2014.01.006
32. Paramasivam A, Priyadharsini JV, Raghunandhakumar S, Elumalai P. A novel COVID-19 and its effects on cardiovascular disease. Hypertens Res. 2020 Jul;43(7):729–30.
33. Li Z, Veeraraghavan VP, Mohan SK, Bolla SR, Lakshmanan H, Kumaran S, et al. Apoptotic induction and anti-metastatic activity of eugenol encapsulated chitosan nanopolymer on rat glioma C6 cells via alleviating the MMP signaling pathway [Internet]. Vol. 203, Journal of Photochemistry and Photobiology B: Biology. 2020. p. 111773. Available from: http://dx.doi.org/10.1016/j.jphotobiol.2019.111773
34. Gan H, Zhang Y, Zhou Q, Zheng L, Xie X, Veeraraghavan VP, et al. Zingerone induced caspase-dependent apoptosis in MCF-7 cells and prevents 7,12-dimethylbenz(a)anthracene-induced mammary carcinogenesis in experimental rats. J Biochem Mol Toxicol. 2019 Oct;33(10):e22387.
35. Dua K, Wadhwa R, Singhvi G, Rapalli V, Shukla SD, Shastri MD, et al. The potential of siRNA based drug delivery in respiratory disorders: Recent advances and progress. Drug Dev Res. 2019 Sep;80(6):714–30.
36. Mohan M, Jagannathan N. Oral field cancerization: an update on current concepts. Oncol Rev. 2014 Mar 17;8(1):244.
37. Haubold HJ, Onuora LI. Basic Space Science: Proceedings of the Conference Held in Lagos, Nigeria, October 1993. Amer Inst of Physics; 1995. 304 p.
38. E A, Aswani E, Gheena S, Pratibha R, Abilasha R, Hannah R, et al. Overexpression of HNRNPA2B1 is Associated with Poor Prognosis in Head and Neck Squamous Cell Carcinoma [Internet]. International Journal of Current Research and Review. 2020. p. 15–8. Available from: http://dx.doi.org/10.31782/ijcrr.2020.122502
39. Hassona Y, Al Boosh D, Al Saed A, Al Mousa M, Barghout N, Al Kayed A, et al. The range of pathological diagnoses of oral diseases in Jordan: An 11-year-retrospective study [Internet]. Vol. 7, Saudi Journal of Oral Sciences. 2020. p. 151. Available from: http://dx.doi.org/10.4103/sjos.sjoralsci_17_20
40. Vilmann A, Vilmann P, Vilmann H. Pyogenic granuloma: Evaluation of oral conditions [Internet]. Vol. 24, British Journal of Oral and Maxillofacial Surgery. 1986. p. 376–82. Available from: http://dx.doi.org/10.1016/0266-4356(86)90023-9
41. Jordan RCK, Daniels TE, Greenspan JS, Regezi JA. Advanced diagnostic methods in oral and maxillofacial pathology. Part I: Molecular methods [Internet]. Vol. 92, Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontology. 2001. p. 650–69. Available from: http://dx.doi.org/10.1067/moe.2001.119568
42. Requena RBEBL, Bragado R, Bello E, Requena L. Increased Expression of Vascular Endothelial Growth Factor in Pyogenic Granulomas [Internet]. Vol. 79, Acta Dermato-Venereologica. 1999. p. 422–5. Available from: http://dx.doi.org/10.1080/000155599750009834
43. Igarashi A, Hayashi N, Nashiro K, Takehara K. Differential expression of connective tissue growth factor gene in cutaneous fibrohistiocytic and vascular tumors [Internet]. Vol. 25, Journal of Cutaneous Pathology. 1998. p. 143–8. Available from: http://dx.doi.org/10.1111/j.1600-0560.1998.tb01706.x

44. Hagiwara K, Khaskhely NM, Uezato H, Nonaka S. Mast Cell "Densities" in Vascular Proliferations: A Preliminary Study of Pyogenic Granuloma, Portwine Stain, Cavernous Hemangioma, Cherry Angioma, Kaposi's Sarcoma, and Malignant Hemangioendothelioma [Internet]. Vol. 26, The Journal of Dermatology. 1999. p. 577–86. Available from: http://dx.doi.org/10.1111/j.1346-8138.1999.tb02052.x
45. Soyele OO, Ladeji AM, Adebiyi KE, Adesina OM, Aborisade AO, Olatunji AS, et al. Pattern of distribution of reactive localised hyperplasia of the oral cavity in patients at a tertiary health institution in Nigeria [Internet]. Vol. 19, African Health Sciences. 2019. p. 1687. Available from: http://dx.doi.org/10.4314/ahs.v19i1.45
46. S S, Sivaharini S, Herald J. Sherlin, Narayan V. Reactive lesions of the oral cavity - A retrospective study [Internet]. Vol. 11, International Journal of Research in Pharmaceutical Sciences. 2020. p. 809–16. Available from: http://dx.doi.org/10.26452/ijrps.v11ispl4.4076
47. Reddy V, Saxena S, Saxena S, Reddy M. Reactive hyperplastic lesions of the oral cavity: A ten year observational study on North Indian Population [Internet]. Journal of Clinical and Experimental Dentistry. 2012. p. e136–40. Available from: http://dx.doi.org/10.4317/jced.50670
48. Association of the Depth of Invasion wth Lymph Node Metastasis in Oral Squamous Cell Carcinoma Patients - A Retrospective Study [Internet]. Indian Journal of Forensic Medicine & Toxicology. 2020. Available from: http://dx.doi.org/10.37506/ijfmt.v14i4.12542
49. Sukumaran G, Ramani P, Ramasubramanian A, Karunagaran M, Ravikumar H. Implantation Dermoid Cyst [Internet]. Vol. 8, Journal of Evolution of Medical and Dental Sciences. 2019. p. 4023–5. Available from: http://dx.doi.org/10.14260/jemds/2019/871
50. Buchner A, Shnaiderman-Shapiro A, Vered M. Relative frequency of localized reactive hyperplastic lesions of the gingiva: a retrospective study of 1675 cases from Israel [Internet]. Vol. 39, Journal of Oral Pathology & Medicine. 2010. p. 631–8. Available from: http://dx.doi.org/10.1111/j.1600-0714.2010.00895.x
51. Fan X, Chen D, Bao S, Bai R, Fang F, Dong X, et al. A retrospective cohort study on a pharmaceutical consultation mode of multidisciplinary individualized medication recommendations [Internet]. Available from: http://dx.doi.org/10.22541/au.162073854.46222402/v1
52. Ramu S, Rodrigues C. Reactive Hyperplastic Lesions of the Gingiva: A Retrospective Study of 260 Cases [Internet]. Vol. 3, World Journal of Dentistry. 2012. p. 126–30. Available from: http://dx.doi.org/10.5005/jp-journals-10015-1142