Dental Research Journal

Abstract

6th Congress of Iranian Oral and Maxillofacial Pathologists

Maxillary primordial odontogenic tumor arising from a dentigerous cyst: A case report and review of the literature

Arghavan Etebarian[1], Arezoo Aghakouchakzadeh[1], Hana Saffar[2], Mostafa Mortazavi[3], Mahsima Tayefi[4]

Departments of [1]Oral and Maxillofacial Pathology, [3]Oral and Maxillofacial Surgery and [4]Oral and Maxillofacial Radiology, School of Dentistry, Alborz University of Medical Sciences, Karaj, [2]Department of Pathology, Cancer Institute, Imam Khomeini Hospital Complex, Tehran University of Medical Sciences, Tehran, Iran

ABSTRACT

Primordial odontogenic tumor (POT) is a novel mixed epithelial and mesenchymal odontogenic neoplasm that first included in the 4th edition of WHO classification in 2017. To date, there are less than 20 cases described in the literature worldwide.

Case Report: Herein, we describe a case of POT in an 18-year-old female patient with a complaint of painful swelling for the past month. Panoramic radiograph showed a well-defined pericoronal radiolucency around the unerupted right maxillary third molar which was displaced to the inferior border of the orbit. Remarkable internal calcifications were observed at the periphery of the lesion in its cone-beam computed tomography. Incisional microscopic evaluation showed cellular fibromyxoid tissue resembling dental papilla, entirely covered by columnar epithelium similar to inner enamel epithelium of the enamel organ with areas of suprabasal stellate reticulum like structures. Small foci of intraepithelial calcifications in stellate reticulum areas were also evident. The tumor was enucleated as a whole and based on its excisional microscopic evaluation a dentigerous cyst with the cauliflower projections of POT on its surface was diagnosed for this case. The tumor showed no signs of recurrence in the follow up period.

Key Words: Calcification, dentigerous cyst, maxillary bone, primordial odontogenic tumor

Abstract

The effect of E-learning on dentistry students' enthusiasm towards oral and maxillofacial pathology

Foruz Keshani[1], Afsaneh Fatemi[2], Seyed Mohammad Razavi[3], Neda Mirmohammadsadeghi[4]

[1]Department of Oral and Maxillofacial Pathology, Dental Research Center, School of Dentistry, Dental Research Institute, Isfahan University of Medical Sciences, [2]Department of Computer Engineering, Faculty of Software Engineering, University of Isfahan, [3]Department of Oral and Maxillofacial Pathology, Dental Implant Research Center, School of Dentistry, Dental Research Institute, Isfahan University of Medical Sciences, [4]Dental Students' Research Committee, Dental School, Isfahan University of Medical Sciences, Isfahan, Iran

ABSTRACT

Background: In the day and age of technology development, people, students in particular, are gravitated to improve the standards of their personal life, including the ways of learning various subjects not only in everyday life but in their education process. Having enhanced the methods of studying, they might be more interested in being taught.

Materials and Methods: This study reviews the effectiveness of e-learning in dental education by searching in several scientific websites, namely pubmed, google scholar, scopus, web of science, Embase up to 2021.

Results: When it comes to E-learning, all people just consider online classes, while different motivational games in a form of an app or web app would be also an effective method of learning. Traditional learning methods are just teacher-based, which transmits knowledge to the student but this lacks collaboration and analytical skills, resulting in a paucity of soft skills that are necessary for every work environment. On the other hand, there are some branches in dental education, such as oral and maxillofacial pathology, that pupils have no enthusiasm to study and learn due to the need for these lessons to be memorized. Furthermore, some believe practical branches of dentistry are worthwhile to read. Game-based learning by describing different situations using clinical, radiographic, and histologic images in oral lesions would decidedly encourage dental student to attain this branch.

Conclusion: To recapitulate, it is an irrefutable fact that there is a need to implement effective and affordable education strategies to provide dental students the incentives to study better, most specifically for oral and maxillofacial pathology. So that they would be a qualified dentist as well as public health conductor in society.

Key Words: Dentistry students, E-learning, game-based learning, oral and maxillofacial pathology

Abstract

Salivary micro-RNA as a biomarker in oral squamous cell carcinoma and oral lichen planus patients

Farnaz Mohajer Tehran[1], Nooshin Mohtasham[1], Allieh Farshbaf[2]

[1]Oral and Maxillofacial Diseases Research Center, Mashhad University of Medical Sciences, [2]Dental Research Center, Mashhad University of Medical Sciences, Mashhad, Iran

ABSTRACT

Background: Oral squamous cell carcinoma (OSCC) is one of the most common oral injuries that quick determination is greatly advantageous for ordinary treatment. Oral lichen planus (OLP) may be a pre-malignant condition with the change potential to OSCC. As of late, the microRNAs (miRNAs) have been considered as the novel controller biomarkers for quality expression and early conclusion of harmful lesions as well as assessment of the potential for pre-malignant changes within the injuries. So, we evaluated the miR-Let-7a-5p expression within the spit of patients with OSCC, OLP, and control bunches to attain an early demonstrative marker.

Materials and Methods: This cross-sectional consider was conducted in Mashhad University of Medical Sciences, Mashhad, Iran. Fresh salvia was collected from OLP patients, OSCC patients, and healthy persons. The expression of miR-let-7a-5p was assessed among the three bunches by quantitative polymerase chain response (q-PCR).

Results: In this study, three bunches were quantitatively and subjectively assessed for miR-let-7a-5p expression in spit. The comes about appeared that there was a factually noteworthy relationship within the cruel quantitative and subjective expression of miR-let-7a-5p among the three groups.

Conclusion: The levels of miR-let-7a-5p expression were essentially lower in patients with OSCC and OLP compared to solid controls. The miR-let-7a-5p can be considered as a biomarker in spit that we propose to be potentially reliable within the conclusion and guess of OSCC conjointly OLP transformation.

Key Words: Biomarker, MicroRNA, oral lichen planus, oral squamous cell carcinoma

Abstract

Effect of intraperitoneal injection of Nigella sativa oil on 5-fluorouracil-induced oral mucositis in rats

Sohrab Kazemi[1], Ali Akbar Moghadamnia[1], Homeira Saebnouri[2], Seyed Hojat Taheri Roudsari[3], Elham Sadat Afraz[4]

[1]Department Cellular and Molecular Biology Research Center, Health Research Institute, Babol University of Medical Sciences, Babol, [2]Department of Oral and Maxillofacial Pathology, School of Dentistry, Tehran University of Medical Sciences, [3]Dental School, Tehran University of Medical Sciences, Tehran, [4]Department of Oral Medicine, School of Dentistry, Semnan University of Medical Sciences, Semnan, Iran

ABSTRACT

Background: Although many studies have shown that administration of Nigella sativa oil can decrease inflammation and facilitate tissue regeneration, the efficacy of its systemic administration for treatment of chemotherapy-induced oral mucositis has not been investigated.

Material and Methods: This study evaluated 72 rats who were randomly divided into three groups control, placebo, and treatment (n=24). The rats received intraperitoneal injection of 5-FU on days 1 and 3. The rats' cheek mucosa was then wounded with a linear scratch by an 18-gauge needle on day 3. The placebo and N. sativa oil were administered in groups B and C, respectively during the study period. Histological changes in oral mucosa were assessed on days 4, 6, and 8. Data were statistically analyzed using SPSS via the ANOVA, and the Kruskal-Wallis test, followed by the Mann Whitney multiple comparisons test.

Results: The mucositis score and inflammation score significantly decreased in the treatment group compared with the control and placebo groups ($P<0.05$). But there was no significant difference between the groups regarding the connective tissue changes ($P>0.05$). Our findings suggest that N. sativa oil can have a notable efficacy for the improvement of oral mucositis and can decrease the inflammation score in rats undergoing chemotherapy.

Conclusion: Our results suggest that Nigella sativa can be used as a valuable remedial agent and can be a possible candidate for treatment of chemotherapy-induced oral mucositis.

Key Words: 5-fluorouracil, chemotherapy, inflammation, mucositis, *Nigella sativa*

Abstract

Evaluation of dental students' clinical reasoning in oral lesions management using electronic patient problem management

Seyed Hosein Tabatabaei[1], Fatemeh Keshmiri[2], Seyed Mostafa Mahmoudi[1], Najmeh Jafari Barfroyeh[1], Fatemeh Azizian[3]

[1]Department of Oral and Maxillofacial Pathology, School of Dentistry, Shahid Sadoughi University of Medical Sciences, [2]Department of Medical Education, School of Public Health, Shahid Sadoughi University of Medical Sciences, [3]Department of Medical Education, Shahid Sadoughi University of Medical Sciences, Yazd, Iran

ABSTRACT

Background: Evaluation of clinical reasoning is of special importance in medicine. proper recognition, diagnosis, and

management of oral and maxillofacial lesions are known as parts of dental students' duties. The purpose of this study was to evaluate the clinical reasoning ability of the students of Yazd dental College regarding oral lesion management by designing and implementing the EPMP test.

Materials and Methods: This descriptive-analytical study was performed on 40 dental students of Yazd University of Medical Sciences. these students had a diagnostic dentistry course 3 who were familiar with the diagnosis and treatment plans of the benign and malignant oral cavity lesions. At the end of the semester, EMPE test was performed. the obtained data were analyzed using descriptive statistics and Pearson correlation coefficient.

Results: The mean score of clinical reasoning was 13, the mean score of diagnostic dentistry was 16, and the average score of the students was 16, and accordingly, there was no correlation among the clinical reasoning score, lesson score, and the average score. Fifty-five students agreed with this type of test. Among the property of PMP, the highest score was related to "need for more thought and reflection".

Conclusion: Despite the desirable educational status of the students regarding oral lesions, their clinical reasoning and decision making based on the patients' conditions were not satisfactory.

Key Words: Clinical reasoning, dental education, dental student, patient problem management

Abstract

Evaluation and comparison of cytological changes in the buccal mucosa and the lateral border of the tongue in smokers, passive smokers and nonsmokers using four staining methods

Leili Alizadeh[1], Mahtab Mohammadi Fard[2], Neda Fakhrayi Rad[3]

[1]Department of Oral and Maxillofacial Pathology, Dental Research Center, School of Dentistry, Birjand University of Medical Sciences, [2]Department of Pathology, School of Medicine, Cellular and Molecular Research Center Razi Specialized Hospital, Birjand University of Medical Science, [3]Private Practice, Birjand, Iran

ABSTRACT

Background: Today, the effort to identify pre-malignant lesions has doubled. One of these methods is cytology. The purpose of this study was to compare the observed changes in the cytological smears of smokers and passive smokers with non smokers using four staining methods.

Materials and Methods: This descriptive-analytic case-control study was conducted in three groups with 25 subjects. Cytological smears were prepared by sterilized swabs from the buccal mucosa and lateral border of the tongue of smokers, passive smokers and non-smokers. Specimens previously fixed in alcohol were stained in the laboratory using Papanicolaou, Hematoxylin Eosin, Gimsa and Toluidine Blue. Samples were then evaluated for frequency of micro-nucleus, granular nucleus with coarse chromatin, clear nucleus, pleomorphism and binuclear cell and the results were recorded.

Results: There were no significant differences between the two groups in papanicolaou and toluidine blue staining. In the hematoxylin and eosin staining method, the frequency of granular nucleus with rough chromatin ($p = 0.03$) and clear nucleolar frequency ($p = 0.000$) were significantly different in the studied groups. Frequency of binuclear cells in Giemsa staining method was also significantly different in three groups ($p = 0.004$). In the smoker group, the abundance of binuclear cells was significantly higher in papanicolaou staining and with a slight difference after hematoxylin and eosin ($p = 0.003$); also in subjects exposed to cigarette smoke There was a significant difference in the distribution of granular nuclei with coarse chromatin ($p = 0.014$), clear nucleus ($p = 0.013$), and dual nucleation cell ($p = 0.000$), as well as hematoxylin staining in non-smokers. And eosin showed higher frequency for binuclear cells than other methods ($p = 0.03$). Comparison between different groups, regardless of the staining method, was significantly higher in smokers and nonsmokers than in non-smokers ($p = 0.033$). Data were analyzed by ANOVA, Shapirovilk and Chi-square tests with Fisher's exact test. Significance level was set at $\alpha = 0.05$ and analyzed by SPSS 19 software.

Conclusion: According to the results of the present study, smoking and exposure to cigarette smoke could be a risk factor for malignant cellular changes. Also, if the cytology technique is used with Papanicolaou staining or hematoxylin and eosin, it is effective in early detection of some cytological changes and helps in early detection of dysplasia in the oral cavity.

Key Words: Cytology, smoking, tongue and buccal mocusa

Abstract

Evaluation of anti-cancer effect of hydroalcoholic extract of nasturtium officinale on oral cancer cell line using MTT assay method

Abolfazl Abdolazimzadeh[1], Fatemeh Shahsavari[2], Maryam Jolehar[2]

[1]Dentist, [2]Department of Oral and Maxillofacial Pathology, Faculty of Dentistry, Tehran Medical Sciences, Islamic Azad University, Tehran, Iran

ABSTRACT

Background: Given the many side effects of routine cancer treatments, the use of herbs in cancer treatment may help reduce the side effects of treatments and improve patients' lives. Therefore, the present study aimed to evaluate the

anticancer effect of nasturtium officinale on the oral cancer cell line.

Materials and Methods: In this experimental study, the toxicity effect of the extract on normal and cancer cell lines at different concentrations and times was investigated using the Methylthiazol Tetrazolium assay method. Finally, the data were compared, and random effect one-way ANOVA was applied to evaluate them.

Results: The extract showed anti-cancer effect, which was significant (P=0.00) at different times and in concentrations of ≥0.5 mg/ml. The IC50 index for cancer cells was 3.52 at 24 hours and 4.36 at 48 hours. This means that with increasing exposure time, higher concentrations of the extract are needed to inhibit the viability of cancer cells. Also, hydroalcoholic extract had a destructive effect on healthy cells in 24 hours at concentrations of 4 and 8 mg/ml (P≤0.05). Examination of concentrations in the range of 0.5 to 2 showed that the best and most ideal concentration with anti-cancer effect was 2 mg/ml because in this concentration 55.5% of cancer cells and only 0.1% of healthy cells were killed.

Conclusion: The hydroalcoholic extract of the plant had an anti-cancer effect on the oral cancer cell line. An effect that was inversely related to time and directly related to the concentration of the extract.

Key Words: Cell line, hydroalcoholic extract, nasturtium officinale, oral cancer

Abstract

The prognostic significance of cancer-associated fibroblasts (CAFs) in tongue squamous cell carcinoma

Narges Ghazi[1], Nasrollah Saghravanian[1], Kazem Anvari[2], Fatemeh Rostami[3]

[1]Department of Oral and Maxillofacial Pathology, School of Dentistry, Mashhad University of Medical Sciences, [2]Department of Radiotherapy and Oncology, Omid Hospital, Mashhad University of Medical Sciences, Mashhad, Iran, [3]Dentist, Mashhad, Iran

ABSTRACT

Background: Tongue squamous cell carcinoma (TSCC) is associated with poor prognosis and highest rate of metastasis as compared with other tumor sites in the oral cavity. Tumor stroma plays a vital role in carcinogenesis. Fibroblasts that are incorporated in the tumoral stroma are called as Cancer-Associated Fibroblasts (CAFs). They play a pivotal role in progression and metastasis of the solid carcinomas. These cells can be defined immunohistochemically by the presence of alpha smooth muscle actin (a-SMA). This study aimed to determine the role of CAFs in the recurrence of TSCC and patients' survival rates.

Materials and Methods: A total of 30 cases of TSCC with at least two years of follow-up were studied retrospectively. Of these, 15 cases had recurred during the follow-up period. Fifteen specimens of normal oral mucosa were selected as the control group. Immunohistochemistry was used to evaluate the expression and distribution pattern of CAFs (by detection of α-SMA expression).

Results: Statistical analysis showed a strong correlation between α-SMA overexpression and recurrence of TSCC (P-Value=0.007). Correlation between increasing α-SMA expression and lower patients' survival rates (disease-free survival (DFS) and overall survival (OS)) was also demonstrated.

Conclusion: Results of our study suggested that CAFs play an important role in creating the permissive environment for TSCC progression, recurrence and occult metastasis. The α-SMA expression may be used as a prognostic or predictive parameter for TSCC recurrence.

Key Words: Alpha smooth muscle actin, cancer-associated fibroblasts, tongue squamous cell carcinoma

Abstract

Expression of p53 protein and Ki-67 antigen in chronic periodontitis of cigarette smokers: An immunohistochemical study

Mahdi Faraji[1], Noushin Jalayer Naderi[2]

[1]Shahed University, [2]Department of Oral and Maxillofacial Pathology, Faculty of Dentistry, Shahed University, Tehran, Iran

ABSTRACT

Background: Cigarette smoking has a destructive effect on perioduntuim. Studies have revealed a direct linear relation between smoking and cancers of oral cavity. The aim was to evaluate the impact of cigarette smoking on apoptosis and proliferation of gingival epithelium in chronic periodontitis.

Materials and Methods: The study was case-control. 32 paraffin embedded samples of chronic periodontitis with periodontal index = 3 in CPITN scaling system from 16 smoker and 16 non-smoker were examined immunohistochemically for p53 and ki-67 expression. The expression of p53 and Ki-67 were evaluated in terms of intensity and count of positive cells. The expression of p53 and Ki-67 were compared between smokers and nonsmokers and then examined in relation to packs × year in smokers.

Results: The mean count of p53 and Ki-67 expression were not significantly different between smokers and nonsmokers (p=0.74 and p=0.93, respectively). The intensity of p53 and Ki-67 positive-stained cells were not significantly different between smokers and nonsmokers (p= 0.68 and p=0.44, retrospectively). Expression of p53 and Ki-67 were not different between groups of smokers in terms of packs × year (p=0.71, p=0.96, respectively).

Conclusion: Although the difference between expression of p53 and Ki-67 were not significant between smokers and nonsmokers, expression of P53 and Ki-67 were higher in

smokers with chronic periodontitis than nonsmokers. It seems that there is a balance between the rate of cell proliferation and cell death in chronic periodontitis even in smokers.

Key Words: Antigen ki67, chronic periodontitis, cigarette, oncoprotein p53, smoking

Abstract

Assessment and comparison of the presence of myofibroblasts and mast cells in the connective stroma in different types of ameloblastoma

Nakisa Torabinia[1], Neda Kargahi[2], Faezeh Rezaei Dehaghani[3]

[1]Department of Oral and Maxillofacial Pathology, Dental Materials Research Center, Dental Research Institute, Isfahan University of Medical Sciences, [2]Department of Oral and Maxillofacial Pathology, Dental Research Center, Dental Research Institute, Isfahan University of Medical Sciences, [3]Faculty of Dentistry, Isfahan University of Medical of Sciences, Isfahan, Iran

ABSTRACT

Background: Ameloblastoma is the most important odontogenic tumor. myofibroblasts are the special cells of stroma. Mast cells participate in differentiation regulation and function of myofibroblasts. The aim of this study is to evaluate the role of stromal components like myofibroblast and mast cell in growth and characteristics of different types of ameloblastoma.

Materials and Methods: In this cross-sectional descriptive-analytical study, 7 blocks of solid ameloblastoma, 7 unicystic ameloblastoma and 6 peripheral ameloblastoma blocks from Archives of department of pathology, Isfahan dental school were stained with αSMA marker immunohistochemistry and histochemical coloring of toluidine blue. The average number of myofibroblasts and mast cells, the color pattern of myofibroblasts and the severity of inflammation of the lesions were evaluated simultaneously by two oral pathologists. Data was analyzed by SPSS 20 software using Kruskal-Wallis and Chi-square test. (P value <0/05).

Results: Intact mast cells (p=0/75), Degranulated mast cells (p=0/65) and total mast cells (p=0/51) colored with toluidine blue were not significantly different in three lesions. The severity of inflammation (p=0/46) was not significantly different in types of ameloblastoma. The degree of myofibroblast coloration and the pattern distribution in different types of ameloblastoma was not significantly different (p=0/29) (p=0/37).

Conclusion: There was no significant difference between the number of mast cells and myofibroblasts between the three types of ameloblastoma.

Key Words: Ameloblastoma, connective tissue, mast cell, myofibroblast

Abstract

An overview on telepathology: Benefits in diagnostic pathology

Nakisa Torabinia

Department of Oral and Maxillofacial Pathology, Dental Materials Research Center, Dental Research Institute, Isfahan University of Medical Sciences, Isfahan, Iran

ABSTRACT

Background: Telepathology is making diagnosis on digital images instead of conventional glass slides. During the past decades, pathology got lots of benefits by developed technology and digitalized images. Getting whole slide image (WSI) by slide scanner, can provide better view. Digital slides in pathology can be useful tool for learning, making diagnosis and consultation. The aim of this study is to review on digital pathology and current status and future perspectives.

Materials and Methods: A complete query was carried out on PubMed and Google Scholar databases, and the studies published during 2000-2022 were collected using the keywords "telepathology", "image processing," "slide scanning," and "Diagnostic System "virtual microscopy", 15 relevant articles focused on telepathology were selected and reviewed.

Results: All 15 published articles of telepathology, in all areas of diagnostic histopathology including intraoperative frozen sections, routine and referral cases. New developments, including internet solutions and virtual microscopy, are described and analyzed.

Conclusion: The review concludes that the necessary technology for telepath ology is available. there is strong evidence for advantages of digital images compared with glass slide.

Key Words: Diagnostic system, image processing, slide scanning, telepathology, virtual microscopy

Abstract

Study of extrinsic apoptotic pathway in oral lichen Planus using TNFR I and FasL immunohistochemical markers and TUNEL technique

Parviz Deyhimi[1], Elham Arzhang[2]

[1]Department of Oral and Maxillofacial Pathology, Dental Research Center, School of Dentistry, Dental Research Institute, Isfahan University of Medical Sciences, Isfahan, [2]Department Oral and Maxillofacial Pathology, School of Dentistry, Shahrekord University of medical sciences, Shahrekord, Iran

ABSTRACT

Background: The exact pathogenesis of lichen planus (LP) is still unknown and there are some controversies concerning role of apoptosis in its creation. The purpose of the present study is to investigate extrinsic apoptotic pathway in oral lichen planus (OLP).

Materials and Methods: In the present cross-sectional study, the presence of apoptosis was investigated on 25 specimens of OLP and 6 specimens of normal oral mucosa using TUNEL technique and also pro apoptotic immunohistochemical (IHC) markers of FasL and TNFR1 in 4 areas of degeneration, basal and parabasal layers, and lymphocytic band. Then staining intensity distribution (SID) index was determined and the results were analyzed by Wilcoxon and Mann-Whitney tests (P-value<0.05).

Results: There was no significant difference between SID of TUNEL in the areas of parabasal and lymphocytic band, but the difference was significant among other areas. There was significant difference between SID of TNFR1 in the areas of degeneration and lymphocytic band, basal and lymphocytic band and also parabasal and lymphocytic band, but there was no significant difference between other areas. There was no significant difference between SID of FasL in the areas of degeneration and basal, degeneration and parabasal, and also basal and parabasal, but there was significant difference in other areas.

Conclusion: Apoptosis probably doesn't play a major role in destruction of basal cells in OLP. Destruction of basal cells in OLP is probably resulting from necrosis of these cells. Because of low level or lack of apoptosis, there is low probability of carcinomatous changes in OLP.

Key Words: Apoptosis, FasL, lichen planus, TNFR1, TUNEL technique

Abstract

Comparative study of correlation between angiogenesis markers (CD31) and Ki67 marker with behavior of aggressive and nonaggressive central giant cell granuloma with immunohistochemistry technique

Seyed Mohammad Razavi[1], Roya Yahyaabadi[2]

[1]Department of Oral and Maxillofacial Pathology, Dental Materials Research Center, Dental Research Institute, Isfahan University of Medical Sciences, Isfahan,[2]Department of Oral and Maxillofacial Pathology, Shahrekord University of Medical Sciences, Shahrekord, Iran

ABSTRACT

Background: The central giant cell granuloma (CGCG) is generally considered a non-neoplastic lesion. However, some cases show aggressive behavior like neoplasms. Based on clinical observations, a number of researchers have classified this lesion into aggressive and non- aggressive types. This study was aimed to investigate the association between clinical behavior and histopathological features using immunohistochemical vascular CD31 and cellular proliferation Ki67 markers.

Materials and Methods: In this descriptive-analytical, clinicopathological and immunohistochemical study, 50 CGCGs, including 25 aggressive and 25 non-aggressive types were selected according to Chuong's classification. The samples were then subjected to immunohistochemical staining to analyze positivity for CD31 and Ki67 markers. Numbers of blood vessels and percentage proliferation of underlying fibroendothelial cells were assessed, and the obtained results were analyzed with the t-test and the Mann-Whitney test.

Results: The results showed a significant difference between aggressive and non-aggressive CGCG lesions in the mean incidences of Ki67 (p=0.044). and CD31 (p=0.003) positivity.

Conclusion: The present evaluation of expression rates for the vascular CD31 and cellular proliferation Ki67 markers showed there might be a positive relation between the clinical features and histopathology of CGCG. Furthermore, clinical behavior may be predicted based on features such as the number of blood vessels and proliferation of fibroendothelial cells.

Key Words: Aggressive central giant cell granuloma, Ki 67, non-aggressive central giant cell granuloma, vascular CD31

Abstract

Expression of miRNA 146a in oral lichen planus: A comparative study for evaluation of malignant transformation

Sareh Farhadi[1], Maliheh Entezari[2], Mana Homaie[3]

[1]Department of Oral and Maxillofacial Pathology, Faculty of Dentistry, Tehran Medical Sciences, Islamic Azad University, [2]Department of Genetics, Faculty of Advanced Science and Technology, Tehran Medical Sciences, Islamic Azad University, [3]Dentist, Tehran, Iran

ABSTRACT

Background: Given the importance of preventing the malignant transformation of Oral Lichen Planus (OLP), the present study was aimed to compare the expression of miRNA 146a in Oral Squamous Cell Carcinoma (OSCC) and OLP lesions.

Some studies have suggested that OLP could potentially be a precancerous lesion. There are also several reports on the role of miRNA 146a in the transformation of OLP to OSCC.

Materials and Methods: 30 OSCC and 18 OLP samples were evaluated in this study. After RNA extraction, cDNA synthesis was performed. The expression of miRNA 146a was measured using Real-Time PCR. Agarose gel electrophoresis was used for qualitative assessment of the presence of

miRNA 146a.Quantitative analysis was performed through spectrophotometry. The Mann-Whitney U test was used to compare the miRNA 146a expressionlevels in OLP and OSCClesions.

Results: The miRNA 146a expression was found to be 1.9139±0.96845 times higher in OLP tissues and 4.7730±4.54098times higher in OSCC tissues than in the control tissue. The difference between the miRNA 146a expression levels of the two lesions was statistically significant (P=0.011724).

Conclusion: The study found a significant difference between OLP and OSCC samples in terms of the expression of miRNA 146a. Therefore, it might be possible to use this miRNA as a marker for estimating the malignancy potential of OLP lesions.

Key Words: miRNA 146a, oral lichen planus, oral squamous cell carcinoma

Abstract

Expression of miRNA3651 in erosive lichen planus using qRT-PCR

Sanam Abbasi Maleki[1], Maryam Jolehar[2], Maedeh Ghorbanpour[2]

[1]Dentist, Private Practice, [2]Department of Oral and Maxillofacial Pathology, Faculty of Dentistry, Tehran Medical Sciences, Islamic Azad University, Tehran, Iran

ABSTRACT

Background: According to different literatures, erosive oral lichen planus has potential to transform into oral carcinoma. Considering the importance of early diagnosis of malignant lesions, it seems necessary to study the possible biologic markers for early screening. It has been recently known that miRNAs play an important role in detecting early symptoms of cancer, thus present study was conducted to assess the expression levels of miRNA3651 in erosive lichen planus using qRT_PCR.

Materials and Methods: This case-control study was conducted on 20 paraffin blocks of oral erosive lichen planus and 20 irritation fibroma (control) which were collected from the archive of oral and maxillofacial pathology department of faculty of dentistry of Islamic Azad University. Then the expression of miRNA3651 was evaluated using qRT_PCR technique. Eventually the data were imported to SPSS24 and the mean expression level of miRNA3651 in the two groups was compared using Independent t-test. Significance was assigned at $p<0.05$.

Results: The findings of this study showed a significant difference in expression level of miRNA3651 between two groups ($p<0.00001$). The amount of expressed miRNA3651 in erosive lichen planus (10.4±0.98) was obviously greater than that of control (2.02±1.3). For examining sensitivity of miRNA3651 in predicting malignant transformation potential of erosive lichen planus, we used ROC curve which showed that this marker was highly sensitive.

Conclusion: The significant difference of miRNA3651 expression between erosive lichen planus and control group and great sensitivity of this marker defines the importance of this miRNA in early detecting of malignant changes.

Key Words: Cancer screening, miRNA 3651, oral lichen planus, qRT_PCR

Abstract

Immunohistochemical study of MDM2 exprission in jaw cysts

Najmeh Jafari[1], Seyed Hossein Tabatabaie[2], Fatemeh Kerdegari[3]

[1]Department of Oral and Maxillofacial Pathology, School of Dentistry, Shahid Sadoughi University of Medical Sciences, [2]Department of Oral and Maxillofacial Pathology, Social Determinate of Oral Health Research Center, School of Dentistry, Shahid Sadoughi University of Medical Sciences, [3]Social Determinate of oral Health Research Center, School of Dentistry, Shahid Sadoughi University of Medical Sciences, Yazd, Iran

ABSTRACT

Background: Dentigerous cyst and odontogenic keratocyte cyst are two common odontogenic developmental cysts. The different developmental mechanism and biological behaviour of odontogenic keratocyte cyst are due to intrinsic unknown factors in the epithelium or the enzymatic activity of its wall. P53 is involved in regulating the pathways of DNA rapier, apoptosis, angiogenesis, and maintaining genomic integrity, and is negatively regulated against Murine double minute 2. The aim of this study is to examine expression of Murine double minute 2 as an important marker of proliferation and regulation of cell cycle in odontogenic keratocyte cyst and Dentigerous cyst.

Materials and Methods: In this descriptive-cross-sectional study, expression of Murine double minute 2 protein was explored in suprabasal and basal regions of epithelium of 15 specimens from each Dentigerous cyst and odontogenic keratocyte cyst via immunohistochemistry technique. Finally, the data were analysed by SPSS 22 and t-test and chi-square test.

Results: expression of Murine double minute 2 in both suprabasal and basal regions in odontogenic keratocyte cyst was higher than Dentigerous cyst, but no significant relationship was observed (P:0.825) (P:0.551). The expression of this marker was significantly higher in the suprabasal region than basal region in both studied groups (P:0.005)(P:0.004).

Conclusion: Higher expression of Murine double minute 2 in odontogenic keratocyte cyst can suggest the secondary role of this protein in the pathogenesis, growth, and development of this cyst and its different biological behaviour compared to other cysts.

Key Words: Immunohistochemistry, jaw cyst, MDM2

Abstract

Evaluation of P21Wafexpression and CDKNIA exon2 mutation in salivary adenoid cystic carcinoma

Nasim Taghavi[1], Zahra Yadegari[2], Farzad Yazdani[3], Fatemeh Mashhadiabbas[1], Alireza Akbarzadeh Baghban[4], Sahla Vafadar[5]

[1]Dental Research Center, Dental School, Shahid Beheshti University of Medical Sciences, [2]Departments of Dental Biomaterials, Dental School, Shahid Beheshti University of Medical Sciences, [3]Department of Pathology, Amir Alam Hospital, Tehran University of Medical Sciences, [4]Department of Basis Science, Proteomics Research Center, School of Rehabilitation, Shahid Beheshti University of Medical Sciences, [5]Department of Oral and Maxillofacial Pathology, Shahid Beheshti University of Medical Sciences, Tehran, Iran

ABSTRACT

Background: The P21waf is a tumor-suppressor protein encoded by CDKN1A gene. In this study, we evaluated P21waf expression and CDKN1A exon 2 mutation and their relationships with clinicopathological parameters and cancer development in salivary adenoid cystic carcinoma (ACC).

Materials and Methods: Forty paraffin blocks from patients with salivary ACC were collected. Immunohistochemical staining was performed using P21 antibody. Genomic DNAs were extracted from the deparaffinized sections of the embedded tissue. Exon 2 of CDKN1A gene was amplified by PCR and the PCR products were sequenced. Spearman's correlation coefficient, Fisher's exact test, and Kruskal-Wallis test were used for data analysis.

Results: A significant inverse correlation was observed between P21 expression and histologic grade (p=0.033, r=-0.338). The correlation of tumor size with recurrence (p=0.048) and tumor stage (p=0.046) was also evidenced. No mutation was detected in the exon 2 of CDKN1A gene.

Conclusion: Regarding the association of P21 expression and histologic grade as a major prog- nostic indicator of ACC, P21 may be a useful prognostic indicator in ACC. On the other hand, CD- KN1A exon 2 mutation seems inapplicable as a risk factor for ACC development.

Key Words: Adenoid cystic carcinoma, expression, mutation