

Poster Abstracts

P1

Evaluation of the role of MDM2 and P53 in the proliferative activity of ameloblastoma and odontogenic keratocyst-keratocystic odontogenic tumor by immunohistochemistry

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Objectives: Ameloblastoma and keratocystic odontogenic tumor are characterized by a benign but locally invasive behaviour with a high risk of recurrence. MDM2, an amplifier of cell proliferation, and p53, a tumor suppressor protein, are over expressed in some odontogenic lesions. This study was designed to assess the relationship between expression of MDM2 and P53 and proliferative activity and local invasion of these two entities.

Methods: The expression of MDM2 and P53 proteins were determined immunohistochemically in paraffin sections of 39 ameloblastomas (15 follicular, 15 plexiform and 9 unicystic types) and 15 keratocystic odontogenic tumors. Statistical analysis were performed using One way ANOVA, t-test, Kruskal–Wallis, Mann–Whitney U and Kendall tests.

Results: P53 protein was expressed in 100% of keratocystic odontogenic tumors and 79.6% of ameloblastomas and MDM2 was detected in 79.48% of ameloblastomas and 80% of keratocystic odontogenic tumors. There were no statistical differences between MDM2 and P53 expression in different subtypes of ameloblastomas and keratocystic odontogenic tumors compared with them. ($P > 0.05$). Grade and severity of MDM2 and P53 expression were similar in subtypes of ameloblastomas and keratocystic odontogenic tumors. ($P > 0.05$). But there was significant difference between grades and severity of MDM2 expression in the subtypes of ameloblastomas. ($P < 0.05$). There was a positive correlation between MDM2 and P53 expression.

Conclusion: Over expression of P53 and MDM2 is associated with proliferative activity of ameloblastomas and keratocystic odontogenic tumors

Relevance: We realized that these lesions have same biological behaviour, in term of local invasion and high recurrence rate.

P2

A clinical investigation on the success of hypnosis in inducing local anesthesia in endodontic

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Introduction: In some cases in endodontic dentistry, despite an injection of local anesthetic material, the existence of teeth with irreversible pulpitis does not become numbed, or there are other cases in which we are not able to use local anesthesia on a patient. Therefore, in these cases alternative treatment, especially hypnodontia – the use of hypnosis in dentistry – can be introduced.

Aim: The goal of this study was to determine the amount of success using hypnosis in place of local anesthetic material in the root canal therapy (Endodontics)

Materials and Methods: This study was conducted as a clinical traineeship on 21 male and female volunteer patients, which were referred to the Department of Endodontics of the Mashhad Dental University, for treatment of vital teeth with irreversible pulpitis. Examination forms were completed for all of the patients' teeth and the condition of systemic diseases if any was recorded, then consent forms were signed. In the presence of the patient's companion, the patient underwent hypnosis and the time necessary to reach suitable numbness was recorded. Then the patient was conditioned to a key. In the second session, with the use of a key conditioning word, hypnosis was done quicker and the time to reach numbness was again recorded. The numbness was checked and confirmed by one of our professors in our department. While numb, the patient underwent Endodontic treatment. The result of the study was analyzed by the Mann–Whitney U-test, Exact Fisher test, and the Wilcoxon Sign Rank Test.

Results: The obtained results show that in the Department of Endodontics, from 21 volunteers, 16 patients (76.2%) reached suitable deep numbness while five patients (23.8%) did not have a suitable response. The time period to reach hypnosis the second time was less than the first. Moreover, there was not any difference between males and females. Statistically significant difference was detected.

Conclusion: Using hypnosis to induce local numbness for root treatment of teeth in 76.2% was successful and in 23.8%, it was unsuccessful. From a statistical point of view, this difference was significant.

P3

Turkish version of the geriatric oral health assessment index in elderly residents

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Purpose: The aim of the study was to validate Turkish version of Geriatric Oral Health Assessment Index (GOHAI) in elderly individuals living in residential homes.

Methods: Twenty five elderly people (F/M:17/8 mean age:70.1 ± 5.6 years) were examined in residential homes. Data were collected by oral examinations and questionnaire. World Health Organisation guidelines were used in oral examination. Oral health related quality of life was assessed by the 12-item GOHAI and oral health impact profile-14 (OHIP-14). In addition, Xerostomia index (XI) which is a 7-item instrument measuring dry mouth symptoms were used in the study. Better quality of life was indicated with higher scores in GOHAI and lower scores with OHIP-14. Validity and reliability were evaluated for GOHAI.

Results: GOHAI score (45.6 ± 11.04) was correlated with scores of OHIP-14 (12.9 ± 13.5) indicating construct validity ($r = -0.8$ $P = 0.000$). Self reported oral health status that ranged from 1 (poor) to 5 (excellent) was positively correlated with GOHAI ($r = 0.8$ $P = 0.000$ and $r = 0.7$ $P = 0.000$, respectively) pointing out concurrent validity. Low GOHAI score was observed in edentulous individuals without denture compared to those having dentures in ($P = 0.04$). GOHAI was also related with score of XI (2.0 ± 2.5) ($r = -0.7$ $P = 0.000$). Cronbach's alpha value (0.85) indicated high degree of internal consistency.

Conclusions: GOHAI score was related with oral health and dry mouth symptoms.

Relevance: Turkish version of GOHAI was found to be valid and reliable questionnaire.

P4

The factors related with the number of chewing strokes for recognizing taste

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Purpose: The sense of taste has been evaluated mostly by investigating the taste perceptible threshold of some taste solutions. However, there have been few studies examining the spread of taste in terms of masticatory process. The purpose of this study was to examine the factors related with the number of chewing strokes for recognizing taste.

Methods: Forty-three subjects without missing teeth (19 females and 24 males, mean age: 30.0 years) were instructed to chew food samples made from 3% agarose containing 2% or 5% sucrose. The number of their chewing strokes needed to recognize the sweetness at either small area or whole area of the tongue was measured. In addition, masticatory efficiency, salivary flow rate, maximum bite force and scores of oral health related to quality of life (OHIP) were assessed.

Results: Male subjects exhibited larger numbers of chewing strokes to perceive taste than female subjects for 5% sucrose sample. The number of chewing strokes for whole area was larger than that for small area of the tongue. Moreover, the number was significantly associated with masticatory efficiency (Spearman's correlation coefficient by rank test: $r_s = 0.49$), salivary flow rate ($r_s = -0.53$), maximum bite force ($r_s = -0.43$) and scores of OHIP ($r_s = 0.44-0.66$).

Conclusion: The findings suggested that masticatory efficiency, salivary flow rate, maximum bite force and scores of OHIP might effect the number of chewing strokes for tasting the sweetness.

Relevance: It is important for taste sensation to restore regular occlusion in prosthetic treatment and to release some problems in the oral cavity.

P5

Oral mucosal lesions in residents of Minsk (Belarus)

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Purpose: There is little information concerning the frequency and character of oral mucosal disease in persons resident in Belarus, hence the aim of the present study was to determine the frequency and nature of oral mucosal disease of patients referred to a Dermatology unit in Minsk, Belarus.

Methods: The case files of 5574 patients examined in Minsk Dispensary of Cutaneous Diseases in 2005 were retrospectively reviewed.

Results: One hundred and twenty six subjects (2.3% of total) were diagnosed as having clinically apparent oral lichen planus, the majority of whom (87%) were females in middle to late age. 31% had symptomatic erosive or ulcerative lesions. 42 patients (0.75%) had erythema multiforme, this occurred in both genders, and tended to arise in the 3rd to 5th decades of life. nine patients had probable mucocutaneous pemphigus, eight of whom had oral lesions. Recurrent aphthous stomatitis was only diagnosed in two patients.

Conclusions: Aside from the low frequency of recurrent aphthous stomatitis, and high numbers of individuals with erythema multiforme, the spectrum of oral disease in patients from Belarus seems to be similar to that expected in middle-to-late aged persons resident in other parts of the world. There is however a need to undertake well planned, prospective studies to accurately determine the frequency and nature of oral mucosal disease in this region of Europe.

Relevance: This is the first study of the potential the oral medicine needs of individuals resident in Belarus.

P6

Do removable denture-related lesions affect oral health related quality of life?

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Objective: The aim of this study was to examine oral health related quality life (oral QoL) status of patients with removable denture-related lesions.

Methods: In this cross-sectional study, patients having denture-related lesions (n = 46, F/M: 30/14 mean age:60.3 ± 10.9 years), using denture without any lesions (n = 29, F/M:13/16, 60.9 ± 14.2 years), patients with reticular oral lichen planus as disease control group (OLP, F/M:8/8, 61.0 ± 15.6) and healthy controls (HC, n = 31 F/M: 12/19, 54.6 ± 8.5) were selected in Department of Oral Surgery and Oral Medicine. Oral QoL was evaluated by Turkish versions of Oral Health Impact Profile-14 (OHIP-14). High scores indicated a poor oral health related quality of life. Pain status was evaluated by visual analogue scale (VAS, 0 = no pain vs 10 = severe pain) were recorded in the examination form.

Results: Scores of OHIP-14 was worse in patients having denture-related lesions (25.5 ± 17.9) than those in HC (13.1 ± 16.2) and patients using denture without any lesions (5.8 ± 9.3) (P = 0.003 and P = 0.000, respectively). OHIP-14 score was lower in patients with candidiasis (20.8 ± 17.3) compared to patients with Epulis fissuratum (37.1 ± 13.5) without statistically significant (P = 0.06). VAS score was higher in patients with denture-related lesions (4.5 ± 2.3) than those in HC (1.1 ± 0.3), patients with OLP (2.9 ± 1.7) and patients using denture without any lesions (1.3 ± 1.9) (P = 0.000, P = 0.040 and P = 0.000, respectively).

Conclusion: Poor oral QoL status and increase in pain density was found in patients with denture-related lesions compared to healthy controls and patients using denture without any lesions.

Relevance: Elimination of denture related-lesions is crucial factor for improving of oral QoL status in patients.

P7

Abstract withdrawn

P8

PCR detection of HPV (12, 32) in Heck's disease patients diagnosed in Mashhad Dental Faculty

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Purpose: Focal epithelial hyperplasia (FEH), also known as Heck's disease, is a rare disease of the oral cavity especially in Asia. It is a disease of children and young adults. Since histopathologic features are not specific, diagnosis is based on clinical findings. Various causes have been implicated but it seems that infection with human papilloma viruses (HPV) has a major role. Polymerase chain reaction (PCR) is a useful tool to identify HPV in FEH lesions because it is a rapid and sensitive method. This study was designed to determine special HPV subtypes by PCR.

Method: Paraffin sections of seven patients clinically diagnosed as FEH with compatible histopathological features underwent DNA extraction procedures for PCR examination. Initially all specimens were tested for presence of HPV virus followed by specific PCR testing for 16, 18, 13 and 32 subtypes in positive samples.

Results: Except for one case, HPV was found in all samples. In four cases HPV-13 was positive and in one case HPV-32 was positive. One case showed strong reactivity for HPV but none of tested subtypes were positive. All cases were negative for HPV 16 & 18 subtypes. The last case was negative for HPV virus.

Conclusions: Similar with other studies about FEH, most of our cases were associated with HPV 13 and 32. In negative samples other subtypes or viruses can be implicated.

Relevance: suggesting an etiologic role for human papilloma viruses especially subtypes 13 and 32 in Heck's disease.

P9

Oral cancer knowledge among patients attending Mashhad Dental School, Iran

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Purpose: Early intervention improves treatment outcomes in oral cancer. The purpose of this study was to assess awareness and knowledge of oral cancer among patients attending to Mashhad dental school, Iran.

Methods: 320 individuals completed a 17 item written questionnaire on oral cancer risk factors, clinical symptoms and signs, epidemiology and treatment. Statistical analysis utilised Student-t, Mann-Whitney U, Kruskal-Wallis and Friedman tests (level of significance P = 0.05).

Results: 89.4% of patients had a poor understanding of oral cancer, especially aetiology. 83.8% were unaware of oral cancer risk factors. Only 8.8% knew the most likely sites for oral cancer are the lateral border of tongue and floor of mouth. There was no relationship identified between knowledge and sex (P = 0.883) or age (P = 0.052). There was a significant correlation between the level of education and knowledge score (P < 0.001). Medical students and health professionals had the greatest knowledge scores (P < 0.001).

P10

Central giant cell granuloma of the jaws: a clinical and radiographic study

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Purposes: The purpose of this study was to obtain survey the demographic, clinical and radiographic features of central giant cell granuloma (CGCG) in patient referred to mashhad dental faculty.

Methods: This 4-year retrospective study was based on existing data files of patients with definitive diagnosis of CGCG from 2004–2007. the patient's age, sex, locations of the lesions, clinical features of the lesions, were evaluated. Radiographs and radiological descriptions were studied for the features of radiopacity, locularity, root resorption and tooth displacement.

Results: From 1232 files reviewed during 4 years, the diagnosis of lesions of 18 patients was CGCG. the age of patients was between 7 and 65 years with the mean age of 21.5 years. Eleven case (61.1%) occurred in female and seven cases in males. Eleven cases (61.1%) presented in anterior part of the jaws and 15 cases(83.3%) in mandible. painless bone expansion in most of cases was observed. cortical perforation and soft tissue expansion was occurred in nine cases. in radiographic examination, most of the lesions were multilocular and tooth displacement was observed in seven cases.

Conclusion: Our study showed that CGCG much more common in younger age group. Most of lesions caused tooth mobility and/or displacement and root resorption. The most common radiographic feature was multilocular radiolucency with well defined border.

Relevance: Epidemiologic studies can provide an important vision for understanding the prevalence, clinical and radiographic presentation of CGCG in the population.

P11

Comparison of antimicrobial effect of ten herbal extracts on *Streptococcus mutans* with chlorhexidine

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Purpose: The use of proprietary mouthwashes has increased. It is suggested herbal mouthwashes have fewer adverse effects and are more economical than similar

synthetic agents. We aim to assess the in vitro antimicrobial effects of ten herbal extracts on *Streptococcus mutans* and compare to chlorhexidine.

Methods: Thirty grams of 10 plants (thyme, mint, garlic, cinnamon, chamomile, tea tree, clove, spearmint, sage and rosemary) were dissolved in 100-ml of pure methanol and placed on shaker for 24 h. Then, after filtration, they were put in an incubator at 37°C for 48 h to produce 10-ml concentrates. *Streptococcus mutans* was cultured on blood agar with the plant extract discs. Chlorhexidine discs were used as positive controls; methanol and dry discs were used as negative controls. After 24 h the diameters of halos indicative around each disc were measured with a pair of calipers. Tests were repeated 10 times for each plant.

Results: Rosemary alone had some antimicrobial activity but compared to chlorhexidine this was insignificant.

Conclusions: This study demonstrated in vitro rosemary extract has some inhibitory effects on *Streptococcus mutans* growth.

Relevance: Rosemary extract may be used as an active component in herbal mouthwashes.

P12

Comparison of antimicrobial effect of ten herbal extracts on *Candida albicans* with nystatin and chlorhexidine

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Purpose: In recent years, use of herbal mouthwashes has increased because of fewer side effects and more economical than similar chemical drugs. In this study we compared antifungal effects of ten herbal extracts on *Candida albicans* with nystatin and chlorhexidine.

Methods: Thirty grams of ten plants, including thyme, mint, garlic, cinnamon, chamomile, tea tree, clove, spearmint, sage and rosemary were solved in 100-ml of pure methanol and placed on a shaker for 24 h. Then, after passing the solutions through a filter, they were put in an incubator at 37°C for 48 h to produce 10-ml concentrates. *Candida albicans* was cultured on Sabouraud's agar and plant extract discs, and nystatin and chlorhexidine discs were used as positive controls; methanol and empty discs were used as negative controls. After 24 h, diameters of halos indicative of lack of growth in each disc were measured with a pair of calipers. Tests were repeated 10 times for each plant. Halos indicative of lack of growth of each plant were compared with nystatin and chlorhexidine using t-test analysis.

Results: Garlic, cinnamon, chamomile, clove, sage, thyme had antifungal activity. Antifungal effect of cinnamon and sage was similar to chlorhexidine and this effect of chamomile, garlic and clove was better than chlorhexidine. No herbal extract had significant antifungal effect comparable with nystatin.

Conclusions: This study demonstrated that garlic, cinnamon, chamomile, clove, sage, thyme extracts have inhibitory effects on *Candida albicans*.

Relevance: These plants can be used in the production of herbal mouthwashes.

P13

Evaluation of the relationship between skeletal status and radiomorphometric indices of the mandible observed in panoramic radiography in females

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Purpose: The relationship between radiomorphometric indices of mandibular bone in panoramic radiography and skeletal status in femoral neck and lumbar spine (L2-L4) was evaluated in females referring to radiology department of Mashhad dental school.

Materials and methods: In this cross sectional study radiomorphometric indices of mandibular bone of 67 females over 35 years old referring to radiology department were recorded. Females with a history of bone affecting metabolism drugs or diseases were excluded from our study. All the cases should have had a panoramic radiography in their orders. All of the patients were then referred to Toos Bone Densitometry Center, for bone densitometry in left femoral neck and lumbar spine (L2-L4), using DEXA technique with Osteocore apparatus. The patients were divided into three categories of normal, osteopenic and osteoporotic in each skeletal region according to their T-score. The data were analyzed using ANOVA, Chi-square test and regression.

Results: Comparing average of Bone Mineral Density, between C1 and C3 subgroups of MCI, in postmenopausal females in femoral neck, a significant difference was detected as well (P-value = 0.04). The average of PMI in the three different skeletal

categories, was not different according to skeletal region and menstruation status (P-value > 0.05).

Conclusion: The results of this study showed that using radiomorphometric indices of mandibular bone (especially MCI) can be useful for determining skeletal status of patients but is not enough for precise evaluation of skeletal status of patients alone.

Relevance: The efficacy of the panoramic-based mandibular indices in diagnosing osteopenia osteoporosis is low to moderate.

P14

Drug therapy of psychotic disorders in oral lichen planus

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Purpose: Current treatments of oral lichen planus are palliative, not curative. Because of the importance of psychological disorders in the development and severity of oral lichen planus, the use of psychotic therapy may be an adjunct treatment in curing the lesions. The purpose of this study was to determine the efficacy of drug therapy of psychotic disorders in oral lichen planus.

Methods: Fifty-four patients with oral lichen planus and psychotic disorders were enrolled in our controlled clinical study and were randomly divided into two groups. Both groups were given topical corticosteroids and the case group received additional psychotic drug therapy. Patients were followed for at least 2 months. Response to treatment was evaluated in each group and was compared with the other group by Wilcoxon and Mann-Whitney U-tests.

Results: Decrease in the size of the lesions was significantly greater in the case group after six months, but this difference was not significant in relation to burning sensation and form of the lesions. In the case group, size of the lesions decreased after 2, 4 and 6 months and form of the lesions and burning sensation revealed a significant decrease after 2 and 6 months.

Conclusions: Decrease in the size of the lesions of OLP was significantly greater in the combination of psychotic therapy and routine treatment modalities.

Relevance: Combination of psychotic therapy and routine treatment modalities may be a valuable therapeutic tool for oral lichen planus.

P15

Efficacy of *Hypericum perforatum* extract on recurrent aphthous ulcer

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Introduction: According to anti-inflammatory and anti-nociceptive effects of *Hypericum Perforatum* (St. John's wort), the aim of this study was to evaluate the efficacy of *Hypericum Perforatum* extract on the management of recurrent aphthous ulcers (RAU).

Materials and methods: Thirty patients with RAU participated in a randomly, placebo controlled double blind trial during three episodes of RAU to evaluate the efficacy of the topical hypericum containing mouthwash (0.5%). After a no-treatment run-in phase, patients were asked to use placebo mouthwash or hypericum mouthwash randomly. The diameters of ulcer and inflammatory halo (with 0.1 mm precision), and ulcer duration (day) were recorded; and associated pain (Visual Analog Scale) were recorded by patients during each episode.

Results: Hypericum mouthwash resulted in a significant reduction of pain of RAU (P < 0.05). Healing time was reduced in hypericum mouthwash group in comparison to other episodes (P = 0.052). Other indices didn't show any significant differences.

Conclusion: Hypericum perforatum extract in form of mouthwash (0.5%), may be of benefit in reduction of pain of RAU and has relative effect on reduction of healing time.

Relevance: zAs RAS is a painful condition of oral mucosa, reduction of pain and healing time is important, so investigations which can help the management of RAS is a main concern.

P16

Clinical and epidemiologic findings of oral lichen planus patients referred to oral medicine department of Mashhad Dental School, Iran

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Purpose: This study is designed in order to evaluate clinical and pathological features of OLP in 420 cases of oral medicine department of Mashhad dental school.

Materials and methods: In this descriptive case series study, data have been collected from records of 420 patients. Clinical information such as: age, sex, site and type of lesions (Skin Involvement) have been Recorded. Data were analyzed with SPSS software using t-test, & chi-square. P-value < 0.05 will be considered significant.

Results: From a total of 420 cases recorded as lichen planus, the mean age of patients was 41.16 years old. 64.9% of cases were woman and buccal mucosa was most frequently involved (85.2%). The most prevalent clinical type was reticular form (76.9%) and 15/5% of patients had skin involvement. Histopathological evaluation showed dysplasia in 7.1% of patients. Burning was the most common chief complain. 67.9% of patients were systemic compromised.

Conclusion: Based on the results of this study, the importance of proper history and clinical examination is of great importance to achieve the best diagnose and treatment plan for OLP.

Relevance: OLP can have different clinical presentations, reticular type being the most commonly reported. OLP has been reported to be associated with different medical conditions. The question that remains to be answered is why we see a higher prevalence of oral carcinoma in patients with OLP. Therefore, we believe patients with OLP have a higher risk for oral cancer and should be monitored for malignant transformation once a year.

P17

Postinflammatory pigmentation in a patient with oral lichen planus

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We present a case of a 59-year-old male patient with Oral Lichen Planus (OLP) which has been diagnosed histopathologically 10 years ago and the patient has been prescribed triamcinolone acetonide several times. The patient had a recent inflammatory pigmentation on the right buccal mucosa neighbouring a white flat plaque noticed by his dentist 3 months ago. Histopathological examination revealed subepithelial band-like oedema, neovascularisation and numerous melanophages. A few numbers of colloid bodies were present at the epithelial-subepithelial junction. The epithelium was normal and any inflammatory cell was present in the subepithelial area. The histopathological features were found compatible with postinflammatory hyperpigmentation disorder following the resolution of an oral lichen planus. Cases of postinflammatory pigmentations on the skin of the patients with OLP have been reported before. Additionally, mucosal pigmentation due to the treatment with topical tacrolimus in patients with OLP has been reported several times but there was no postinflammatory hyperpigmentation disorder in patients with OLP was reported.

P18

Patients on fluorouracil and folinic acid chemotherapy: a cohort study focused on oral mucositis

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Purpose: This cohort study was conducted in order to evaluate oral mucositis manifestations on colorectal adenocarcinoma patients submitted to a fluorouracil (5-FU) and folinic acid (leucovorin) chemotherapy protocol.

Patients and Methods: Twenty-one patients undergone all six cycles of the scheduled chemotherapy (eight men; 13 women; 54–78 years, median 65.5). Chemotherapeutic drugs were administered in five consecutive days; doses adjusted according to body surface area; with 28 days interval. Patients were examined at the beginning of the infusion week and in the following week, in every cycle, when they had their data recorded: mainly pain, discomfort, xerostomia and mucositis. Oral mucositis were graded according to WHO scale. Low level laser therapy (AlGaInP, 660 nm, 3 J/cm²) was provided to every patient who showed symptomatic mucositis.

Results: Sixty-three oral mucositis episodes were diagnosed in the 126 cycles followed. Oral mucositis grades were higher in the first cycles. Patients who manifested mucositis in the first cycles were those who presented more episodes of mucositis through the remaining cycles. Hypertension and xerostomia showed positive correlation with higher grades of oral mucositis.

Conclusions: Patients who develop higher grades of oral mucositis (WHO grades 2 and 3) at the first chemotherapy cycles should be closely followed as should be patients with history of hypertension and xerostomia, due to a worse prognosis.

Relevance: There are few studies following a homogenous group of patients with solid malignant tumours submitted to the same chemotherapy regimen focused on oral mucositis manifestations and behaviour.

P19

The role of p53 protein and tp53 gene during rat oral carcinogenesis induced by 4 NQO

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The medium-term tongue carcinogenesis assay is a useful model for studying oral squamous cell carcinomas phase by phase. The aim of the present study was to investigate the expressivity of p53, as well as mutations in exons 5–8 of TP53 gene during rat tongue carcinogenesis induced by 4-nitroquinoline 1-oxide (4NQO) using immunohistochemistry and DNA sequencing, respectively. A total of 30 male Wistar rats were treated with 4-nitroquinoline 1-oxide in drinking water for 4, 12, and 20 weeks. Ten animals were used as negative control. Statistically differences ($P < 0.05$) were found in p53 expression 12 and 20 weeks after treatment, i.e., pre-neoplastic lesions and squamous cell carcinomas, respectively. A weak immunorepression was observed in the negative control and in 'normal' oral mucosa following 4 weeks after exposure to 4NQO. Regarding DNA sequencing, no mutation was found in all of the exons evaluated at all experimental periods. Taken together, our results suggest that abnormal p53 expression was present in pre-neoplastic lesions and squamous cell carcinomas of the oral cavity. However, no mutations were detected during oral cancer progression.

P20

Oral surgery and compromised coagulation, prospective evaluation of the Graz Guidelines

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Introduction: Oral surgery including implantation and bone grafting is, dependent on extension of intervention, often even possible in haemostaseological deficient patients. The Graz Guidelines of compromised Coagulation (GGcC) provide a standardized concept for the individual management of different surgical extensions. To evaluate the intra- and postoperative haemorrhagic risk when GGcC is considered a prospective non-randomised clinical trial was performed.

Methods: In a time period from 03/2005 to 11/2006 a total of 491 surgical interventions in haemostaseologically compromised patients was performed. Three different samples of patients were defined: (i) maintenance of anticoagulant resp. antiplatelet drugs, (ii) discontinued anticoagulant resp. antiplatelet therapy without substitution and (iii) discontinued oral anticoagulation with substitution by LMH (low molecular heparine). Frequency and intensity (mild/moderate/severe) of intra- or postoperative bleeding and other bleeding-associated complications were investigated.

Results: **Oral anticoagulants** Regarding intra- or postoperative haemorrhagic complications there was no significant difference between the samples of maintenance and discontinuation of the anticoagulant medication without replacement. Merely the LMH-substituted collective exposed higher quantitative and qualitative bleeding-data. A clinically relevant bleeding-course did not occur in a single case.

Antiplatelet drugs: We observed a moderate increase of the intra-operative intensity of bleeding but no higher risk of postoperative bleeding complications. The frequency and intensity of postoperative bleeding episodes did not differ within the collectives. A clinical relevance of bleeding was not observed.

Conclusion: Oral-surgical including implantological procedures in haemostaseologic deficient patients can be performed safely, assuming the consequent adherence of the Graz Guidelines of compromised Coagulation (GGcC). In common of oral surgery cases there is mostly no indication for discontinuation of the anticoagulant resp. antiplatelet medication.

P21

Altered expression of intercellular adhesion molecule-1 (ICAM-1), but not E-Selectin, during experimental oral carcinogenesis in rats

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Purpose: Adhesion molecules are known to play a crucial role in the recruitment of inflammatory cells as well as in tumor progression. In this study, the expression of intercellular adhesion molecule-1 (ICAM-1) and E-selectin was evaluated by means of immunohistochemistry during 4-nitroquinoline 1-oxide (4NQO)-induced rat tongue carcinogenesis.

Methods: Male Wistar rats were distributed into three groups of 10 animals each and treated with 50 ppm 4NQO solution through their drinking water for 4, 12, and 20 weeks. Ten animals were used as negative control.

Results: Significantly greater expression of ICAM-1 was demonstrated in well-differentiated squamous cell carcinoma cells, leukocytes and endothelial cells after 20 weeks of treatment with 4NQO when compared to pre-neoplastic lesions and negative control. Weak immunoreactivity for E-selectin was observed in the negative control group and at all experimental periods analyzed indistinctly.

Conclusion: In summary, our results suggest that the induction of ICAM-1 may facilitate lymphocyte invasion in oral squamous cell carcinomas, which may ultimately result in ulcer formation.

Relevance: Applicability to clinical practice as a potential prognostic factor in oral cancer patients.

P22 Cytogenetic biomonitoring in oral mucosa cells of adults submitted to dental X-ray

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Purpose: The aim of the present study was to evaluate DNA damage (micronucleus) and cellular death (piconosis, karyolysis and karyorrhexis) in exfoliated buccal mucosa cells from healthy individuals (smokers and non-smokers) following dental X-ray exposure.

Methods: A total of 39 healthy people submitted to panoramic dental radiographies were included being 9 smokers and 30 non-smokers.

Results: The results pointed out no significant statistically differences ($P > 0.05$) of micronucleated oral mucosa cells in people before and after dental X-ray exposure. On the other hand, X-ray was able to increase other nuclear alterations closely related to cytotoxicity such as karyorrhexis, piconosis and karyolysis. It seems that cigarette smoke did not interfere with X-ray outcomes induced to buccal cells.

Conclusions: In summary, these data indicate that dental panoramic radiography may not be a factor that induced chromosomal damage, but it is able to promote cytotoxicity. Since cellular death is considered to be a prime mechanism in non-genotoxic mechanisms of carcinogenesis, dental X-ray should be used only when necessary.

P23 Cox-2 expression and neoplastic conversion during 4NQO-induced rat tongue carcinogenesis

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Purpose: This study was undertaken to investigate, by immunohistochemistry, the expression of cyclooxygenase-2 (COX-2) during 4-nitroquinoline 1-oxide (4NQO)-induced rat tongue carcinogenesis.

Methods: Male Wistar rats were distributed into three groups of 10 animals each and treated with 50 ppm 4NQO solution through their drinking water for 4, 12, and 20 weeks. Ten animals were used as negative control.

Results: Although no histopathological abnormalities were induced in the epithelium after 4 weeks of carcinogen exposure, COX-2 was expressed in some cells of the 'normal' oral epithelium in the superficial layer. In pre-neoplastic lesions at 12 weeks following carcinogen exposure, the levels of COX-2 were increased ($P < 0.05$) when compared to negative control. In well-differentiated squamous cell carcinoma induced after 20 weeks of treatment with 4NQO, the same picture occurred when compared to negative control. Weak immunoreactivity for COX-2 was observed in the negative control group being restricted to basal layer of the oral epithelium.

Conclusions: Taken together, our results support the idea that expression of COX-2 plays a crucial role during malignant transformation being closely related to neoplastic conversion of the oral mucosa cells.

Relevance: Applicability to clinical practice for persons at high risk of oral cancer, such as in smokers or in alcoholism, as well as patients diagnosed with oral dysplasia or carcinoma.

P24 Oral mucosal lesions in childhood

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The aim of this study was to analyze the prevalence of oral mucosal anomalies in children from 0 to 12 years old, who are attended by the Department of Paediatric Dentistry of University of Brescia from January 1997–December 2007.

Material and methods: This study was carried out on 10 128 children from 0 to 12 years old. Oral examination was made by two examiners following OMS criteria; periodontal and endodontic lesions were excluded from the study.

Results: 2937/10 128 (29%) children had oral mucosal lesions and we observed 3149 mucositis. We also found a significant difference between the group of children who suffered of chronic diseases (group A $n = 1791$) such as tumours, chronic antibiotic therapy, dismetabolic diseases, treated for transplantation and the group of health children (group B $n = 1146$). In all 2937 children the most common lesions are candidiasis ($n = 954$; 30.3%), traumatic lesions ($n = 649$; 20.6%), geographic tongue ($n = 290$; 9.2%), recurrent aphthous ulcerations ($n = 459$; 14.6%) and primary herpetic gingivostomatitis ($n = 394$; 12.51%). In the group A the most common lesions diagnosed were: geographic tongue ($n = 154$; 53.10%), coated tongue ($n = 203$; 94.41%), primary herpetic gingivostomatitis ($n = 202$; 51.26%), candidiasis ($n = 716$; 75.05%), recurrent aphthous ulcerations ($n = 286$; 62.30%), traumatic lesions ($n = 338$; 52.08%), multiform erythema ($n = 14$; 87.5%) and gingival hyperplasia ($n = 8$; 88.88%).

Conclusions: To establish a relationship between chronic diseases and oral manifestations can provide a better diagnosis, prevention and management of these lesions, improving children's quality of life.

P25 Oral lichen planus and hepatitis C

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Oral lichen planus (OLP) is one of the most common diseases of the oral mucosa. In the last few years a correlation of OLP with systematic diseases has been suggested.

The aims of pilot study:

- 1 The prevalence of increased values of alanine aminotransferase (ALT), aspartate aminotransferase (AST) and bilirubin (BIL) in a group of patients with OLP.
- 2 The occurrence of Hepatitis C in a group of patients with OLP.
- 3 The occurrence of OLP in patients with chronic Hepatitis C.

Method:

- 1 In a group of patients with OLP (14 males and 36 females, mean age 54 and 61 years) we reviewed liver function tests and the presence of antibodies against the Hepatitis C virus.
- 2 In a group of 16 patients with diagnose chronic Hepatitis C (seven males and nine females, mean age 32 and 45 years) a detailed clinical oral examination was completed to identify lesions compatible with OLP.
- 3 In a control group of 207 newly accepted employees of the Teaching Hospital Hradec Králové (70 males and 137 females, average age 42 and 41 years) liver function tests were evaluated as part of their entry medical examination.

Results and conclusion:

- 1 Patients with OLP have higher prevalence of increased ALT, AST and BIL than the control group. However the difference is statistically of minor importance.
- 2 None of the 50 patients with OLP had antibodies against Hepatitis C virus.
- 3 None of the 16 patients with chronic Hepatitis C developed any OLP clinical manifestations.
- 4 According to this pilot study, patients with OLP do not represent, in the Czech Republic, an increased risk of Hepatitis C infection towards health personal. For a definitive conclusion it is, however, necessary to enlarge the studied group.

P26 Lipid peroxidation: salivary malondialdehyde level in clinically healthy and periodontal diseased individuals

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Purpose: Free radicals induced lipid peroxidation (LPO), and because of high molecules reactivity has been implicated in the pathogenesis of several pathological disorders including periodontal disease. In this study we assessed malondialdehyde (MDA) level, end products of LPO, by analysing the status of LPO in saliva of study subjects that has not been previously reported.

Methods: MDA level was designed to analyse saliva of 104 subjects, age 18–65, both sexes. This includes: 30 early (group 1), 30 moderate (group 2), 14 severe (group 3)

generalized chronic periodontitis (GCP) patients, and 30 individuals with clinically healthy served (control). Unstimulated whole saliva was collected by means of the spitting method, samples were centrifuged at 4°C in 3000 g for 15 min then were stored at -70°C until analysed. Also, bleeding on probing, pocket depth, clinical attachment loss and extent of diseased sites were recorded. MDA level was assessed with 2-thiobarbituric acid by colorimetric method at 532 nm.

Results: The differences in the level of MDA among groups (1, 2 and 3) of patients and in comparison those to control subjects were statistically significant at ($P < 0.001$).

Conclusion: The malondialdehyde level in saliva may prove to be useful in identifying patients with classified generalized chronic periodontitis and may provide additional advantages in illumination of pathogenesis of periodontal disease.

Relevance: Increased malondialdehyde level are closely related to the clinical periodontal status and associated with the severity of disease. Therefore, it may be useful in diagnosis, prognosis and evaluation of therapy effects in periodontal disease.

P27

Narrow band imaging (NBI) and high definition television (HDTV) in oral and oropharyngeal squamous cell carcinoma (SCC)

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Purpose: NBI is an optical technique in which a filtered light enhances superficial neoplasms thanks to their neoangiogenetic pattern. NBI accuracy is implemented by combining it with an HDTV camera. Aim of this study is to prospectively evaluate the diagnostic gain of these technologies in the evaluation of oral and oropharyngeal SCC.

Methods: Between April 2007 and March 2008, we analyzed 53 patients divided in two groups: Group A included 20 patients submitted to pre- and intraoperative HDTV white light (WL) endoscopy and HDTV NBI endoscopy, while Group B included 33 subjects followed-up by WL and NBI videoendoscopy and scheduled for surgery in case of positive findings.

Results: 8 out of 20 patients (40%) in Group A showed adjunctive findings with NBI when compared to standard WL. Seven out of eight patients (87.5%) received histopathologic confirmation. Sensitivity of flexible NBI, HDTV NBI, and HDTV WL were 100%, 100%, and 42%, respectively. Seven out of 33 patients (21.2%) in Group B showed positive NBI findings. All lesions were histologically confirmed as neoplasms. Sensitivity of flexible NBI, HDTV NBI, and HDTV WL were 85.7%, 100%, and 28.6%, respectively.

Conclusions: Pre- and intraoperative NBI ± HDTV allowed to obtain an upstaging of three tumors, detection of three synchronous lesions, and one neoplastic progression of lichen planus. Moreover, in the postoperative setting it allowed early detection of five recurrences, one metachronous tumor, and one synchronous lesion.

Relevance: Overall, 14 out of 53 patients (26.4%) had a diagnostic gain applying these techniques.

P28

Comparative studies on hemoglobin-binding proteins of two species of periodontal pathogens

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Purpose: Porphyromonas gingivalis and Prevotella nigrescens are implicated as etiological agents of periodontitis. These periodontopathogens, however, lack iron-chelating systems (siderophores). Under the assumption that these bacteria acquire iron from hemoglobin derived from erythrocytes in periodontal lesions, we found the binding activity of the envelope of P. gingivalis and P. nigrescens to hemoglobin and attempted to isolate their hemoglobin-binding proteins (HbBP).

Methods: The envelope of P. gingivalis ATCC33277 and P. nigrescens ATCC33563 was prepared by ultrasonic treatment of cells and centrifugation and solubilized using a detergent. Binding hemoglobin to the envelope was tested photometrically. Binding of HbBP and hemoglobin was evaluated by dot blot assay. HbBPs were purified from the detergent extracts of the envelope using affinity chromatography and isoelectric focusing.

Results: Binding of hemoglobin to the envelope was confirmed in both species and the binding mode, described below, was almost the same. Binding occurred in a strictly pH-dependent manner: it was observed around pH 4.5, but was not in neutral and alkaline buffers. We proved the existence of HbBPs responsible for this binding by dot blot method and isolated them. Different properties between the two

purified HbBPs were observed in molecular weights, isoelectric points and thermostability.

Conclusions: Binding of the envelope of the periodontopathogens to hemoglobin was confirmed and their HbBPs were isolated.

Relevance: If HbBP can be inhibited, growth of periodontal pathogens will be abrogated because of iron deficiency, which may be efficacious for prevention and therapy of periodontal disease.

P29

Abstract withdrawn

P30

Tongue cancer over 4 decades: epidemiology, histology and survival by anatomic sites

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Purpose: The tongue is the most prevalent site of malignancy in the oral cavity. Our purpose was to analyze the distribution and trends of the various sites of tongue cancer over a long term period, in correlation with epidemiological variables.

Methods: Data were derived from the Israel National Cancer Registry and included all registered data between 1970 and 2006. Analysis of distribution was varied by age, gender, ethnic group and correlated with anatomic tongue sites

Results: Total number of tongue cancer cases was 1347. Most specified cases were in the base (57.32%) and the border (28.54%) of the tongue. Most cases were squamous cell carcinomas (SCC). Salivary gland tumors (SGT) were the second most prevalent cancer in the tongue base. Comparison of males and females showed a general trend of higher levels of SCC for each site among males apart from the border of the tongue. The lingual tonsil revealed a similar prevalence of carcinoma and lymphoma among males and only lymphomas in females. 5-year survival rates ranged from 43 to 55% without significant differences in the survival plots by anatomical location. Trends in tongue cancer incidence from 1970 to 2006 could not be analyzed due to low R2 values (0.0286-0.2637).

Conclusions: SGT or lymphoma should be considered in the differential diagnosis of tongue lesions. Gender differences of SCC prevalence in different tongue sites may imply different biological factors rather than life style alone. Our results support the assumption that for tongue cancer, tumor stage may be the main factor for survival, rather than tumor location.

P31

Study of therapeutic effect of fluoxetine together with clonazepam in myofascial pain dysfunction syndrome

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Introduction: Myofascial Pain Dysfunction Syndrome (MPDS), which comprise myogenic and arthralgic components, have been reported to predispose subjects to headache and facial pain.

Purpose: We conducted this study to determine the role of therapeutic effect of clonazepam and fluoxetine in treatment of MPDS.

Methods: Thirty-nine patients with diagnosis of MPDS were recruited into a clonazepam and fluoxetine pain treatment clinical trial. At entrance and completion of the study the patients completed a 10-cm visual analog scale (VAS). Clonazepam was titrated 0.25 mg in the morning and 0.25 mg at night before sleeping and fluoxetine was titrated 10 mg per day for 6 months. The patients were controlled per 3 weeks and in each follow-up drop in pain level according to the VAS was detected. Improvement index of this study was complete loss of pain (VAS = 0). For comparing the results (before and after treatment) wilcoxon, paired t-test and minitab software were used.

Result: About 90% (n = 35) of patients were treated completely and about 10% (n = 4) were not responded to this treatment.

Conclusion: Clonazepam and fluoxetine may have a therapeutic effect for pain associated with MPDS.

P32**HLA-C/KIR genotypes in OLP patients infected or non-infected with Hepatitis C virus**

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Purpose: Oral lichen planus (OLP) is frequently associated with hepatitis C virus (HCV) infection, at least in Mediterranean countries, and resembles graft-versus-host disease (GVHD) both clinically and histologically. The Killer Cell immunoglobulin-like receptor (KIR) genes encode a family of receptors expressed on NK cells and on a subset of T cells. These genes are supposed to play a significant role in GVHD and HCV infection. The aim of the present study was to analyze the influence of KIR genes on the OLP predisposition in patients with and without HCV infection

Methods: Eighty-one patients with OLP (36 HCV+ and 45 HCV-) and 217 healthy controls were typed for the presence of eight KIR genes and of HLA-C alleles by polymerase chain reaction-sequence specific primer. Gene and allele frequencies were then compared between the cases and the control group, and, within the cases, between different subgroups.

Results: There were no significant differences in the frequency of the KIR genes and HLA-C alleles between cases and controls. We only found a significant difference ($P = 0.0326$) in the frequency of the gene KIR2DL2 between HCV+ and HCV- OLP patients.

Conclusions: The present data suggest that the onset of OLP is not correlated with particular KIR genes nor with HLA-C alleles. However this study confirms the association of some KIR genes with HCV infection.

Relevance: In the patients with OLP and HCV infection, the virus persistence could exert a chronic immunological pressure which would contribute to the onset of the OLP lesions.

P33**The use of ELISA for detection of autoantibodies directed against p63 in sera from patients with OLP**

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Oral lichen planus (OLP) is a chronic inflammatory disease of mucosa and skin affecting approximately 1–2% of the adult population. Despite intense research, the etiology is unknown but autoimmunity as a possible causative factor has been suggested. OLP has been associated with autoimmune diseases such as alopecia areata, myasthenia gravis, ulcerative colitis and vitiligo. The p63 proteins are crucial for formation of the oral mucosa, and we have previously detected antibodies directed against all six p63 proteins in sera from 10% of patients diagnosed with OLP by the use of western blot analysis. As Western blot is a time consuming method, we have now developed an ELISA method for screening of sera for presence of autoantibodies directed against p63. The same material as was analysed with western blot has now been analysed with ELISA technique, which turned out to be a quick and sensitive method.

P34**Salivary and serum neuropeptides in patients with burning mouth syndrome**

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Burning mouth syndrome (BMS) is characterized by a burning sensation of the oral mucosa diagnosed in the absence of any detectable organic cause. It is hypothesized that neuropathy might be causative to the BMS. It remains a matter of debate as to whether it is a centrally or peripherally induced condition and whether this may be reflected in tachykinin levels. Therefore, the aim of this study was to evaluate salivary and serum substance P (SP), neurokinin A (NKA) and calcitonin-gene-related-peptide (CGRP) in 26 female patients with BMS (age range 51–78, mean 65.69 years), and 22 female controls (age range 24–82, mean 49.72 years). Serum and salivary SP, NKA, CGRP levels were determined by commercial competitive enzyme immunoassay kits and proteins were determined according to standard methodology. Data analysis was performed by descriptive statistics and analysis of variance with significance at $P < 0.05$. Significantly decreased levels of serum neurokinin A were found in patients with BMS in comparison to the controls ($P < 0.05$). We speculate that decreased serum neurokinin-A levels might reflect an inefficient dopaminergic system and support the oral dysaesthesia.

P35**Dental endosseous implants in patients with type 1 diabetes mellitus: four case reports in a 3-year multicenter retrospective clinical study**

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Purpose: Even if the majority of clinical studies tend to indicate that diabetes, usually type 2 under metabolic control, is no contraindication for implant placement, the successful placement of fixtures in diabetic patients remains controversial. Compared with the general population, a higher failure rate is however seen in diabetic patients. Most of these occur during the first year of functional loading, apparently pointing to the microvascular complications as a possible causal factor. Aim of this study was to report our experience in treating four patients with type 1 diabetes mellitus with dental implants and to evaluate clinical results.

Methods: A total of 406 consecutive patients received dental implants for oral rehabilitation in three different private dental offices in Piedmont, Italy. A total of 1079 fixtures were implanted from 2004 to 2007. Among all cases, four patients with type 1 diabetes received seven implants and were followed up for at least 24 months.

Results: The implant and restoration are functioning well after placement of the fixture, for the entire follow-up period, providing a 100% survival rate.

Conclusions and Relevance: Survival rate of dental implants in patients with type 1 diabetes mellitus has been rarely reported. Currently, diabetes should no longer be considered as a contraindication for dental implants, provided that the patient's blood sugar level is well managed, and that there is high-quality motivation for oral hygiene procedures. This paper presents a multicenter-experiences of treating diabetic patients using implants with excellent success rates, even if with a modest follow-up period.

P36**Comparative study between psychiatric therapy and occlusal therapy in MPDs**

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Purpose: The present study deals with the comparative examination study of the effect of psychiatric as well as non-pharmacologic treatment including splint therapy and occlusal adjusting on treating the myofascial pain dysfunction.

Methods: Fifty seven patients suffering from MPD were assessed. In the first phase of the study all patients were interviewed by a psychiatrist. They were then divided randomly in to three therapeutic groups. In the next phase the patients of the first group received psychotherapy: they were controlled by a psychologist, fortnightly for a period of 2 months, and afterwards observed monthly for a period of 6 months. The second group received splint therapy, firstly after 48 h, then, fortnightly for 2 months. They too, were controlled and after occlusal adjustment, and were observed monthly for 6 months. The third group of patients received a combination of both methods, namely: psychotherapy, splint therapy, and occlusal adjusting (occlusive treatment).

Results: In the three therapeutic methods of this study, a significant decrease was detected in pain severity after treatment ($P < 0.01$); yet there were a greater decrease in the severity of pain in the first group of psychotherapy ($P = 0.013$). The maximum rate of mouth opening increased in the patients after treatment, but there was no significant difference among the three groups ($P = 0.612$).

Conclusion: The results of this study indicate an effective treatment in the patients suffering MPD through psychiatric treatment.

Relevance: The results of the study indicate that occlusal therapy is not necessary for treatment of myofascial pain dysfunction syndrome.

P37**The effect of topical sucralfate suspension on oral aphthae**

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Purpose: The purpose of this study was to determine the efficacy of topically applied Sucralfate suspension (1 g 10ml⁻¹) in the treatment of recurrent oral aphthous ulcers.

Methods: Fifty-five patients with oral aphthae were included in a randomized, placebo-control, double blind study. In the first part of the study, patients used topical sucralfate suspension or placebo 4 times a day for 2 weeks and examined clinically two

times in a week. Then in the second part of the study, patients used topical sucralfate or placebo 2 times a day for 4 weeks and were examined clinically at biweekly intervals for 6 months. Pain severity, size and number of ulcers were evaluated during the pre-treatment, treatment periods. Statistical analysis was carried out by Pearson X2 and Fisher's exact tests.

Results: Pain relief in the case group on the fourth-day of the study was 59% compared to 14% in the control group. In the case group 63% of patient showed a decrease in the size of the ulcers on the first visit as compared to control group (71%). In addition, the number of ulcers during first 7 days of treatment showed reduction in case group (51.9%) as compared to control group, (36%), and the difference was statistically significant.

Conclusion: In this study, reduction of the painful periods of ulcers was noted in patients treated with sucralfate.

Relevance: We suggest topical sucralfate suspension as an easy and safe treatment which can be added to treatment modalities of Oral Aphthae.

P38

Evaluation of E-cadherin and CD44 expression in patients with tongue squamous cell carcinoma with and without cervical lymph node metastasis

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Propose: E-cadherin and CD44 are cell surface molecules that have role in epithelial cell to cell adhesion. Decreased expression of these factors is correlated with increased incidence of cervical lymph node metastasis. In this study we evaluated the expression of E-cadherin and CD44 molecules with IHC technique and their relationship with clinicopathologic behavior of tumor and cervical lymph node metastasis.

Material and methods: Thirty one patients with tongue SCC enter in this research. Paraffin embedded tumour block of these patients that archived in pathology department of MUMS hospitals were used for IHC staining for E-cadherin and CD44 markers.

Results: Decreased expression had a significant correlation with cervical lymph node metastasis in both markers. On the other hand expression of factor had no meaningful correlation with pathological grade, age, sex and size of tumours. In this study we have a significant correlation between sex and pathological grade of tumour.

Conclusion: Decreased cell adhesion molecules like E-cadherin or CD44 in malignant epithelial cells tumour like SCC may be used to recognized tumour aggressiveness in N₀ cases. In this group of patients combined therapy like surgery with post-operative RT with or without CT may be considered.

P39

Influences of peroxidase on lysozyme activity

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It is well-known that many antimicrobials in saliva interact with each other. The aim of this study was to investigate the interactions of lysozyme with peroxidase in the aspects of enzymatic activity in vitro. The interactions of lysozyme with peroxidase were examined by incubating hen egg-white lysozyme (HEWL) with bovine lactoperoxidase (bLP). The influence of peroxidase system on lysozyme was examined by subsequent addition of potassium thiocyanate and hydrogen peroxide. Lysozyme activity was determined by turbidity measurement of a Micrococcus lysodeikticus substrate suspension. Peroxidase activity was determined by an NbsSCN assay. The Wilcoxon signed rank test was used to analyze changes in enzymatic activities compared with their controls. The bLP at physiological concentrations enhanced the enzymatic activity of HEWL ($P < 0.05$) in a dose-dependent manner. However, HEWL did not affect the enzymatic activity of bLP. Thiocyanate did not affect the enzymatic activity of HEWL, either. The addition of potassium thiocyanate and hydrogen peroxide to the mixture of bLP and HEWL did not lead to additional enhancement of the enzymatic activity of HEWL. The changes of hydrogen peroxide concentration in the peroxidase system did not affect the enzymatic activity of HEWL. In conclusion, bLP enhanced the enzymatic activity of HEWL, but not vice versa. Despite the in vitro nature of our study, the results of the study provide valuable information on the interactions of lysozyme and peroxidase in oral health care products and possibly in the oral cavity. (This study was supported by a grant of the Korea Health 21 R&D Project, Ministry of Health & Welfare, Republic of Korea, A050054)

P40

Clinical characteristics of patients with taste disorders

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The aim of this study was to investigate the clinical characteristics of patients who have visited the Department of Oral Medicine, Seoul National University Dental Hospital with the complaining of taste problems in the recent 2 years. Forty-two patients (11 males and 31 females, mean age 53.5 ± 15.1 years) were included for the present study. A comprehensive questionnaire was used and an interview was also performed. Twenty-one patients (50.0%) were referred by dentists, four (9.5%) by medical specialists, and one by a pharmacist. Fourteen patients (33.3%) reported a history of nasal, sinus or respiratory problems, six patients (14.3%) of otolaryngologic surgery, eighteen patients (42.9%) of oral surgery including tooth extraction, and thirteen patients (31.0%) reported to have allergic reactions to certain food, drugs, etc. Thirty-nine patients (92.9%) had taken some medications within the past 5 years: antibiotics (40.5%), analgesics (28.6%), anti-hypertensive (28.6%), antidepressant (19.0%), etc. Hypogeusia was found in twenty patients (47.6%), dysgeusia in seventeen patients (40.5%), phantogeusia in twelve patients (28.6%), hypergeusia in nine patients (21.4%), and ageusia in eight patients (19.0%). The most common aggravating factor was eating (31.0%). On the other hand relief with eating was reported by eight (19.0%) but the majority reported no particular relieving factors (52.4%). The causes of taste disorders were idiopathic (23.8%), psychogenic (16.7%), oral mucosal diseases (14.3%), medication (11.9%), surgical injury (9.5%), etc. The majority of patients with taste disorder were women of the middle/old age group. Hypogeusia and dysgeusia were more frequently reported. The most common type was idiopathic taste disorder.

P41

Prevention of glucocorticoid-induced osteoporosis during the treatment of oral pemphigus vulgaris

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Purpose: Glucocorticoid therapy is usually associated with frequent side effects, of which bone loss is the most serious, resulting in glucocorticoid-induced osteoporosis (GIO) and an increased risk of fractures. Aim of this study was to report our experience in prevention of GIO in patients treated for oral pemphigus vulgaris (OPV).

Methods: The case records of all new patients admitted to Oral Medicine Section (University of Turin), within the years 1998–2007, with the diagnosis of OPV were reviewed. 42 cases were analyzed, (27 women, mean age 50.7 years, range 18–85). 37 patients were treated with prednisone $1.5 \text{ mg Kg}^{-1} \text{ die}^{-1}$ for a period of 6–114 months (mean 42.1). Prevention of GIO included sodium clodronate $100 \text{ mg } 3.3 \text{ ml}^{-1}$ injection (1 monthly), 1000 mg of calcium carbonate and 400 IU of Vitamin D daily p.o. Five patients (women) were treated with other bisphosphonates (alendronate or risendronate). All patients underwent bone mineral density.

Results: Three patients (two women) manifested GIO: one bone loss, one femoral and one vertebral fracture. Two patients with pathological fractures previously suffered of post-menopausal osteoporosis before the beginning of corticosteroid therapy. No patient treated with GIO prophylaxis protocol developed bisphosphonate-related osteonecrosis.

Conclusion and relevance: The risk of fractures is estimated around 60% for daily doses greater than 20 mg; our data seem to demonstrate that a specific protocol of GIO's prophylaxis can effectively prevent pathological fractures in patients with long-term corticosteroid therapy for OPV.

P42

Frequency of accidental ingestion of dental prothesis in a series of 414 adult patients with foreign bodies in the upper gastrointestinal tract

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Purpose: Foreign body ingestion is a potentially severe problem; it can be a common occurrence and represent a frequent reason for emergency endoscopy. Aim of this study was to report the frequency of ingestion of dental prostheses in 414 patients admitted for suspected ingestion of foreign body in a period of 5 years.

Methods: All patients underwent to: (i) plain radiographic film of the neck, chest or abdomen, in the case of radiopaque objects, and in order to rule out suspected

perforation (a contrast medium has been used in the case of non-radiopaque objects); (ii) a computed tomography (CT) study when necessary; (iii) an endoscopic procedure within 6 h of admission; a flexible scope was used in all patients and a wide range of endoscopic devices was employed.

Results: Almost all foreign bodies were found in the esophagus. Ingestion of dental prostheses occurred in 11%, and represented in our study the third cause of urgent endoscopy of foreign bodies, after food boluses, bones or cartilages. No complications relating to the endoscopic procedure were observed, but 30.7 % of patients had an underlying esophageal disease, such as a stricture.

Conclusions and relevance: Accidental ingestion of dental prostheses is not negligible. The endoscopic procedure is a successful technique that allows the removal of the foreign bodies in almost all cases without significant complications. The dentist should possibly avoid removable prosthesis of reduced dimensions, and also the temporary fixation of bridges or crowns with insufficient retention.

P43

Non-surgical management of oral bisphosphonate-associated osteonecrosis of the jaw: a report of eight cases

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Purpose: Bone metastases are a main cause of morbidity in cancer patients. Treatment includes intravenous bisphosphonates (nitrogen-containing bisphosphonates, like pamidronate and zoledronate), which are moreover associated with avascular osteonecrosis of the jaw (ONJ). Less frequently, ONJ has also been reported in patients taking oral bisphosphonates for treating osteoporosis. We report our clinical experience in treating bisphosphonate-induced ONJ, researching an efficient treatment for patients who decided to avoid surgery.

Methods: Admitted to Oral Medicine Section (University of Turin), within the years 2004–2007, eight consecutive patients were diagnosed with ONJ (one taking oral bisphosphonates). Staging was based on the size and number of oral lesions. Patients were followed up from 6 to 48 months. All patients received continuous antibiotic therapy without surgery, proposed in different regimens. 0.12% chlorhexidine mouth rinse without alcohol has been also added once daily.

Results: No patient had evidence of metastasis or a history of radiation therapy. These osteonecroses did react adequately to local treatment and systemic therapy with antibiotics. All patients showed reduced symptoms and oral lesions.

Conclusions: The introductory results seem to suggest that bisphosphonate-associated osteonecrosis can be well controlled by a non-surgical protocol consisting in long-term administration of antibiotics and antimicrobial. Even if with exposed bone, patients with no pain, symptoms of infection or draining fistulas can be taken as a clinical success.

Relevance: In an oral medicine unit, the medical approach is a consistent presidium in treatment of ONJ; its benefits are remarkable especially for patients 'not able' for the surgical approach.

P44

Oral manifestation of lupus erythematosus: a retrospective study of 19 patients attending an oral-medicine unit

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Purpose: The aim of this study was to characterize oral lesions, methods of diagnosis and treatment outcome in Northern Italian patients with systemic and cutaneous lupus erythematosus (LE).

Methods: The case records of all new patients admitted to Oral Medicine Section (University of Turin), within the years 2000–2007, with the diagnosis of LE with oral involvement were reviewed. Medical and present complaint histories were taken at the time of the first consultation. Diagnosis was confirmed by histopathological examination and immunofluorescence analysis. Patients received treatment, if necessary, with topical corticosteroid therapy, using 0.05% clobetasol propionate ointment mixed in equal parts with 4% hydroxyethyl cellulose gel. All the patients were examined clinically every fortnightly, or less; at each examination therapeutic response was assessed if necessary.

Results: Nineteen cases were analysed, all in women (mean age 40.37 ± 15.91 years). All the patients were followed up for at least 18 months after the initial diagnosis. Oral ulcerations, white irradiating striae and erythematous lesions were observed in most of the patients. Systemic and cutaneous problems were reported and inconveniences with treatment were also analyzed.

Conclusions: Few studies describe the oral manifestation and treatment outcomes in LE patients, with such long follow-up period. We confirm the chronic nature of this

disease, infrequently remissive, and the treatment intend effectively for alleviating symptoms.

Relevance: To improve the knowledge of management of patient with LE attending an oral medicine clinic for oral discomfort.

P45

Abnormal cytokeratin expressions in gingival borderline malignancy

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Purpose: Because of no definitive histological standards, the diagnosis of oral borderline malignancies is difficult. Cytokeratin (CK) analyzes are useful for oral SCC, but CK expression of oral mucosa shows site-specificity. So, to elucidate CK expressions of gingival dysplasia, we performed an immunohistochemical examination of gingival tissues with or without atypia.

Methods: Twenty-two cases of dysplastic gingiva composed of low and high-grade dysplasia were selected from archived cases. Low grade dysplasia comprised 14 cases of mild epithelial dysplasia and the high-grade included eight cases of moderate and severe epithelial dysplasia and carcinoma in situ. Eighty gingival tissues without severe inflammatory changes and dysplasia obtained from gingivectomized patients were served as controls. Localizations of 14 kinds of CK were analyzed by a dextran polymer-based immunohistochemistry on paraffin sections.

Results: CKs for keratinizing epithelium or keratinocyte (1, 5, 14 and 16) were positive in both control and dysplastic gingivae. CK 7, 17 and 20 for simple epithelia were negative. While CK4 and 13, a pair of non-keratinizing squamous epithelium, were positive for 23% and 77% of dysplasia, respectively. CK8, 15, 17 and 19 for simple epithelia or basal cells showed also aberrant expression in 32%, 55%, 86% and 45% of dysplasia, respectively.

Conclusions: CK4, 8, 13, 15, 17, and 19 expressions seem to be ectopic because the gingival tissue essentially shows keratinizing nature. Especially, CK 13 and 17 are frequently over-expressed in dysplastic gingivae.

Relevance: CK13 and 17 are useful proves in the diagnosis of gingival dysplasia.

P46

HCV clearance in saliva and serum of HCV-HIV coinfecting patients under interferon plus ribavirin therapy

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Purpose: HCV-RNA is often present in saliva of HCV-infected patients, with plasma viral load being the main known predictable factor. This provides a biological basis for the potential transmission of this virus. HCV viraemia is particularly high in HCV-HIV coinfecting patients. Interferon plus ribavirin therapy yields a sustained reduction in HCV viremia. This study aimed to assess the clearance of HCV in saliva and serum specimens from HCV-HIV coinfecting patients undergoing this combination therapy.

Methods: Paired serum and saliva specimens were collected from 34 chronic HCV-HIV coinfecting patients at basal time, at the end of treatment, 6 and 12 months latter. Serum HCV-RNA levels were determined by PCR Amplifier system. Presence of HCV-RNA in saliva was tested by a highly sensitive non-commercialized nested-PCR.

Results: HCV-RNA was detected in 21 saliva specimens at basal time (61%). HCV-RNA was detected in saliva in 33% of primary responders vs. 85% of non-responders. HCV-RNA was detected in 5% of primary responders vs. 50% of non-responders. At 12 months after the end of treatment HCV-RNA was not detectable in any sustained responder vs. 47% of non-responders.

Conclusions: HCV was longer detected in saliva than in serum in patients under antiviral therapy. 1 year after finishing treatment HCV-RNA was undetectable in saliva of all sustained responders.

Relevance: In spite of high HCV viremia, there is not a biological basis for the potential transmission of HCV virus from saliva of HCV-HIV coinfecting patients with sustained serological response to interferon plus ribavirin therapy.

P47

Expectations of patients attending a specialist facial pain clinic

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Purpose: Determine the expectations of patients attending a UK facial pain clinic.

Method: Inclusion criterion was all new patients seen in a facial pain clinic over a 6 month period. Data were obtained retrospectively from the patients' notes and questionnaires completed in the waiting room prior to the consultation. Patients categorized into; (i) neuralgia: trigeminal and glossopharyngeal neuralgia; (ii) TMD:

only temporomandibular joint pain and/or related musculatures; (iii) chronic facial pain (CFP): mixed group including atypical odontalgia, mixed TMD and other facial pains, facial migraine and neuropathic pains; (iv) dental: pain related to dental disorders

Results: A total of 169 patients were seen and their demographic characteristics were; Age: 47.7 ± 15.7 years (range 12–85 years), Male:Female = 1:3. Duration of symptoms: 48.9 ± 58.7 months (range 3–360 months)

Diagnosis: CFP = 75 (38%), TMD = 61 (36%), Neuralgia = 20 (12%), Dental = 13 (8%). The four most important treatment goals in order of priority were 'understanding my pain problem better', 'being reassured that my pain is not a sign of a more serious disease', 'improving communication with doctors about pain' and 'able to go out for a meal with confidence'. 57 (33.7%) patients stated in their personal goals that they were looking for a cure or complete relief of pain.

Conclusion: Patients need improved information about chronic facial pain and need earlier referral for diagnosis and realistic management plans.

Relevance: In order to provide patient centered care we need to ascertain the treatment goals of patients which may be different from the clinicians.

P48

Evaluation of adenoid cystic and polymorphous low-grade adenocarcinoma by immunohistochemistry

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Objectives: To study the use of immunohistochemical markers for distinguishing between PLGA and AdCC, who have several overlapping histological and clinical features.

Methods: Ten AdCC and eight PLGA with five normal minor salivary glands were selected after review by two oral pathologists. LSAB method for seven markers: carcinoembryonic antigen, epithelial membrane antigen, muscle specific actin, vimentin, S100, P53 and Ki-67. Finally, our data were qualified by Mann-Whitney test.

Results: Analysis of data show a high expression of CEA, EMA and Ki-67 in AdCC compared to PLGA. Although, CEA ($P < 0.001$) expression was limited to luminal cells. In contrast, MSA ($P = 0.034$) expression in non-luminal cells, and Ki-67 ($P < 0.001$) occurred in both luminal and non-luminal cells. Also there is highly expression of vimentin and S-100 in PLGA with no significance for EMA and Tp53.

Conclusion: The result of this study suggests that ICH can be a helpful tool. The immunostaining of AdCC and PLGA with CEA, Vimentin and Ki-67 were of greater significant, S100 and MSA were less significant and the others (EMA and P53) could not offer an adjunctive aid in differential diagnosis between two tumors.

P49

Analysis of the serum zinc levels in a short cohort of BMS patients

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Background: The aim of this study was to investigate the serum zinc levels in a cohort of patients affected by BMS and to evaluate the efficacy of a supplementary therapy based on zinc sulphate.

Material and methods: Inclusion criteria: Diagnosis of BMS. Exclusion criteria: liver disease, renal disease, malabsorption, recent myocardial infarction, pregnancy, systemic drug use that influence zinc plasma levels. Analysis of zinc was done by atomic absorption spectrophotometry. The range of normal serum zinc levels considered as 'normal' was $70\text{--}150$ mcg dl^{-1} . The intensity of pain was measured on the visuo-analogical scale (VAS). Treatment proposed in case of zinc deficiency: zinc sulphate 200 mg 1 cpr day^{-1} for 4 weeks.

Results: Fifteen consecutive patients affected by BMS were enrolled in the study. Patients age range was 46–85 years (mean \pm SD = 61.3 ± 11.56 years). The sites most involved in the burning sensation were in 100% of cases the tip of the tongue, 87% lateral border of the tongue, 68% anterior part of the hard palate, 48% the lips and 8% gums. The mean value of VAS was 5.4 ± 1.55 . The serum zinc levels in patients with BMS varied from 57.0 to 107.0 mcg dl^{-1} , (84.36 ± 13.88 mcg dl^{-1}). Only one subject presented serum zinc levels less than normal value (57 mcg dl^{-1}). Zinc supplementary therapy was started and completely remission of burning sensation was recorded after 4 weeks. (VAS 7 at t_0 , VAS 0 after 4 weeks).

Conclusions: Zinc plays a pivotal role in neurons protection from oxidative stress and to modulate neurotransmission modulation. We do not know if zinc is involved in the pathogenesis of BMS: 14 of our patients present normal value. We supposed that a subclass of BMS patients suffers from zinc deficiency and a prompt supplementary treatment could ameliorate the symptoms. Further randomized and controlled trials are necessary to better investigate this issue.

P50

Is pharmacotherapy of psychiatric disorder effective on atypical facial pain?

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Purpose: Atypical facial pain (AFP) is a kind of pain that does not match with criteria of other known orofacial pain diseases. Studies have shown that psychiatric disorders have a significant role in prevalence and severity of AFP. There is not any documented and reliable treatment for that, but psychiatric therapy can be the main way to cure. The purpose of this study is evaluation of responsive rate of AFP to psychiatric pharmacotherapy.

Methods: A total of 200 patients suffering from AFP had been referred to the Department of Oral Medicine of Mashhad Dental School from October 2005 to December 2006. Fifty two of them, who had the criteria to enter our study, had been visited by psychiatrist. After determination of their psychiatric disorder, they were revisited 2 weeks later and then followed up every month up to 6 month. Pain was evaluated at first visit and every month during follow-up, by the scale of VAS. Patients had been evaluated by SCL-90-TR, PSS, BDI, STI & Holms–Rahe tests. Finally the correlation between improvement of pain and psychiatric disorder was determined statistically with Kolmogorove-Smirnov analysis and Spearman coefficient of correlation.

Results: There was statistically significant correlation between improvement of psychiatric disorder and improvement of AFP such as between stress and the item.

Conclusion: This study says that pain in AFP patients will improve or disappear with treatment of their psychiatric disorders.

Relevance: Finally it was obvious that decreasing stressors, leads to improvement of psychiatric disorders and as a result improvement of AFP.

P51

The effect of psychiatric disorder's pharmacotherapy on burning mouth syndrome

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Purpose: Burning mouth syndrome (BMS) is a disabling disorder in oral mucosa which has no pathologic lesion & no laboratory findings. Studies have shown that psychiatric disorders have a significant role in prevalence and severity of BMS. There is not any documented and reliable treatment for that, but psychiatric therapy can be the main way to cure. The purpose of this study is evaluation of responsive rate of BMS to psychiatric pharmacotherapy.

Methods: Eighty patients suffering from BMS had been referred to the department of oral medicine of Mashhad Dental School from October 2004 to December 2005. Twenty of them, who had the criteria to enter our study, had been visited by psychiatrist. After determination of their psychiatric disorder, they were revisited 2 weeks later and then followed up every month up to 6 month. Burning was evaluated at first visit and every month during follow-up, by the scale of VAS. Patients had been evaluated by SCL-90-TR, PSS, BDI, STI & Holms–Rahe tests. Finally the correlation between improvement of burning and psychiatric disorder was determined statistically with Kolmogorove-Smirnov analysis and Spearman coefficient of correlation.

Results: There was statistically significant correlation between improvement of psychiatric disorder and improvement of BMS such as between kind of stressor and the item.

Conclusion: This study says that burning in BMS patients will improve or disappear with treatment of their psychiatric disorders.

Relevance: Finally it was obvious that decreasing stressors, leads to improvement of psychiatric disorders and as a result improvement of BMS.

P52

Clinical characteristics of 30 patients with non-Hodgkin lymphoma of the oral cavity

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Lymphomas are tumours of the immune system divided into two large groups according to whether they contain Hodgkin Reed-Sternberg cells (Hodgkin lymphomas, HLs) or not (non-Hodgkin lymphomas, NHLs). Both presentations can be found in the lymph nodes or in any other organ. In the oral cavity NHLs are comparatively more common, and their incidence has increased in recent decades. The clinical characteristics vary according to the type of lymphoma, its nodal or extranodal presentation, or the location of the tumour. The present study examines the clinical characteristics of NHLs manifesting in the oral cavity.

Patients and methods: We evaluated the clinical characteristics of 30 patients diagnosed with NHL of the oral cavity in the Service of Stomatology of Valencia University General Hospital (Valencia, Spain): 14 males and 16 females, with a mean age of 58.3 years.

Results and conclusions: The most frequent NHLs were diffuse large B-cell lymphomas. Phenotypically, all corresponded to B-cell tumours, with the exception of one T-cell presentation. In all but one patient the oral lesions were the first manifestation of the disease: Twenty four patients presented extranodal lymphoma, while six showed head and neck adenopathies. Tumour lesions were the most common extranodal manifestation, presenting a size of over 2.4 cm and with secondary ulceration in six patients. The most frequent locations were the upper gums and palate, with bone involvement in eight patients.

P53

Retinoids and proliferative verrucous leukoplakia (PVL)

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Purpose: The aim of our study was to assess whether retinoids (oral or topical) may provide some benefit in the treatment of patients with PVL.

Methods: Sixteen patients diagnosed with PVL were included. In 11, etretinate was used at a dose of 25 mg day⁻¹ in oral tablet form. In six, retinoic acid ointment 0.1% in orabase twice a day was used (on one patient both were used). The average duration of treatment was 4.92 months (range 1–9). Intraoral photographs were taken at baseline and at the end of treatment in 18 lesions of 12 patients. Pairs of images of each patient were reviewed on a blind basis by two evaluators. The agreement between evaluators was 94.4% (17/18).

Results: In seven evaluated lesions improvement was recorded, with worsening in seven and no change in four. There were side effects in 11 of 18 patients. Three gave up the treatment because of itching, colorectal bleeding and cramps, and asthma attack. Descaling of skin, itching and hair loss were the most common side effects.

Conclusion: Retinoic acid offers good results in the treatment of PVL in one-third of patients. However, side effects are notorious, and after drug withdrawal relapses are common and occur shortly thereafter. Further studies are needed to determine the efficacy and safety of the drug in this disease.

P54

Oral health related quality of life in patients with non-specific ulceronecrotic oral mucosal lesions

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The estimation of oral health quality of life (OHQoL) becomes more essential for today's Russian oral medicine. Oral mucosal diseases (OMD) have a serious influence on quality of life because of pain, speech, chewing, swallowing and taste disorders, halitosis, aesthetic disturbances and etc. The aim of the study was to evaluate OHQoL in patients with the most common ulceronecrotic OMD and healthy controls (HC). We performed cross-sectional study among 63 patients of oral medicine department: 21 patients (F/M: 19/2, 55.8 ± 6.3 years) with ulcerative and bullous oral lichen planus (OLP), 16 patients (F/M: 12/4, 38.5 ± 8.4 years) with recurrent aphthous stomatitis (RAS), 15 patients (F/M: 4/11, 54.3 ± 5.7 years) with erosive leukoplakia (EL) and 11 patients (F/M: 6/5, 53.2 ± 4.9 years) with decubital ulcers (DU). OHQoL was assessed by OHIP-14-Ru (Russian PSMA certification No 2435 22.02.2007.) Pain was rated by visual analogue score (VAS, 0–100 mm). Scores of OHIP-14 were found significantly worse in all patients with OMD with maximal deviations in OLP (34.2 ± 9.8), minimal (14.5 ± 4.4) in EL. No significant differences were observed between OHIP-14 scores in HC and DU. The results of multivariable logistic regression analyses showed that both sizes of ulcerative area (OR = 2.0) and xerostomia degree (OR = 1.6) were significantly associated with high impact on the OHQoL of patients with OMD. The estimation of OHQoL is essential for further treatment efficacy evaluation in patients with OMD.

P55

Correlation of fissured tongue with HLA-DRB1* alleles

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Purpose: The aim of this study was to investigate the linkage between HLA-DRB1* and fissured tongue.

Methods: Seventy one (71) patients (28 males and 43 females, mean age 39.5 ± 5 years) of the Clinic of Oral Medicine and Maxillofacial Pathology, School of Dentistry, Aristotle University of Thessalonica, Greece. And 125 healthy volunteers were typed for HLA-DRB1*. All patients and control group were of Hellenic Origin

and Nationality and they did not manifest any disease. The analysis of HLA-DRB1* alleles was performed on genomic DNA after Polymerase Chain Reaction amplification with Sequence Specific Primers method (PCR-SSP).

Results: The results showed increased frequency of HLA-DRB1*08 (P < 0.001), (RR = 15.873), HLA-DRB1*14 (P < 0.01), (RR = 3.512), HLA-DRB1*11 (P < 0.05), (RR = 1.419) and HLA-DRB1*16 (P < 0.05), (RR = 0.071). Decreased frequency in fissured tongue group was observed for HLA-DRB1*03 (P < 0.05, RR = 0.278) and HLA-DRB1*07 (P < 0.05, RR = 0.440).

Conclusions: In conclusion, it seems that fissured tongue is probably positively associated to HLA-DRB1*08, HLA-DRB1*14, HLA-DRB1*16 and HLA-DRB1*11 and therefore patients. Have a relative risk of manifesting this condition. A negative association with HLA-DRB1*03, HLA-DRB1*07 is also recorded meaning probably a decreased risk of developing fissured tongue.

Relevance: This is the first study of HLA alleles in patients of Hellenic origin and nationality attempting to correlate the etiology of fissured tongue with heredity. Based on our results we may speculate that HLA-DRB1*08, HLA-DRB1*11, HLA-DRB1*14 and HLA-DRB1*16 alleles are closely related with appearance of fissured tongue, while HLA-DRB1*03 and HLA-DRB1*07 alleles are probably protective to the disorder in the Hellenic population.

P56

Oral leukoplakia in smokers and non-smokers

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Purpose: To assess the possible clinic and pathological differences of the oral leukoplakia in smokers, non-smokers and former smokers.

Methods: Clinical data regarding tobacco usage and localization of oral leukoplakia were retrieved from the files of 103 patients (79 current smoking patients, 18 non-smokers and 6 former smokers). A number of 38 biopsies have been taken (22 in smokers, 12 in non-smokers and 4 in former smokers. As the number of the former smokers was too small, they were excluded from the study.

Results: Most of the patients in the non-smokers group were women: 69 vs. 39. In the smoker group most of the patients were men: 46 vs. 33. The mean age of the smoking patients was 52 years lower than the non-smoker group (63.5 years). These differences were statistically significant (P < 0.05). In the smokers group the most frequent localization was the cheek mucosa including commissures. In non-smokers the most involved site was the alveolar process followed by the tongue. Unlike previous studies, the floor of the mouth involvement was not statistically significant between smokers and non-smokers. The lingual involvement is significantly higher in non-smokers than in smokers (P < 0.05). In smokers, carcinoma was encountered in 13.6%, dysplasia in 13.6%. In non-smokers carcinoma was encountered in 33.3% and dysplasia in 16.6%.

Conclusions: The influence of tobacco on oral leukoplakia varies by anatomical site. Dysplasia and carcinoma were more frequent in non-smokers.

Relevance: The clinical approach should be much more cautious in non-smokers than in smokers.

P57

Tumour biological factors vs. diagnostic delay in oral cancer survival

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Aim: To study the relationship between diagnosis, clinical stage and Ki67 in a series of patients with oral squamous cell carcinoma.

Patients and methods: A sample of 63 patients treated at the Maxillofacial Surgery Service of the 'Juan Canalejo Teaching Hospital' (A Coruña, Spain). Data on diagnostic delay (time since the first symptom to final diagnosis) and a series of clinicopathological variables, together with Ki67 determination were studied.

Results: The mean Ki67 value in the sample was 41.65 (median 39; SD ± 24.87) and mean diagnostic delay of 3.5 months (median 1.5; SD ± 3.4). Kaplan-Meier analysis shows that diagnostic delay does not influence the prognosis of the disease, but patients with longer delay elicit a better survival rate after an 18 month follow-up; whereas patients with a Ki67 score higher than 40 (median) live shorter. Diagnostic delay and Ki67 score show a statistically significant relationship (P = 0.06), as patients with longer diagnostic delay score lower Ki67 values. Early stages (I and II) are related to better survival (P = 0.04), being the mean value for diagnostic delay higher among those at stage I. Multivariate Cox regression

recognises tumour stage ($P = 0.05$) as the most relevant variable, followed by Ki67 score and diagnostic delay.

Conclusions: It is concluded that the differences in tumour biology may explain the fact that patients with oral squamous cell carcinoma at advanced stages show better survival rates.

P58

Collagen telopeptide (serum CTX) and its relationship with the size and number of lesions in cancer patients on intra venous bisphosphonates with osteonecrosis of the jaws (BIONJ)

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Introduction: Osteonecrosis of the jaws (ONJ) can be an adverse effect of bisphosphonates, particularly those used intravenously (IV) in cancer patients and is thus termed bisphosphonate-induced ONJ (BIONJ). Serum C-terminal cross-linking telopeptides of type I collagen (CTX), serum tartrate-resistant acid phosphatase (TRACP) isoform 5b (S-TRACP5b) and urinary free deoxypyridinoline (U-DPD) are recognised markers of bone resorption.

Aim: We aimed to test the hypothesis that CTX is a biological marker in BIONJ.

Method: We retrospectively studied 15 patients with BIONJ (group 1) comparing with 10 healthy controls matched by age and gender (group 2). All patients had cancers (seven breast; six myeloma; the others lung or prostate) and were treated IV with zoledronic acid (five also were treated with pamidronate). In both test (BIONJ) and control groups, degradation products of C-terminal telopeptides of type I collagen were quantified in serum, using enzyme linked immunosorbent assay (Serum CrossLaps ELISA, Nordic Bioscience, Denmark).

Results: The mean serum CTX level in group 1 (BIONJ) was $294.10 \text{ pg ml}^{-1} \pm 76.27$ (mean \pm standard error) and was significantly lower (Mann-Whitney U-test = 30, $P = 0.01$) than the $490.56 \text{ pg ml}^{-1} \pm 77.71$ (mean \pm SE) in group 2 (controls). There were no statistically significant relationships in group 1 between serum CTX and either the number of areas of bone exposed (Spearman's test = $0.006 P > 0.05$) or with the size of the osteonecrotic areas (Spearman's test = $0.010 P > 0.05$).

Conclusions: Serum CTX level are decreased in patients with BIONJ, and this might be of prognostic value, but the results need confirming in larger and prospective studies in patients on different bisphosphonate regimens.

P59

Effects of low-power laser treatment on hypo salivation

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Purpose: Hypo salivation is usually followed by inadequate mechanical cleaning of the mouth and decrease in the levels of salivary antimicrobial proteins (including secretory immunoglobulinA [sIgA]). It is accompanied by difficulties during speaking and food swallowing, with an unpleasant taste, burning sensations in the mouth and higher susceptibility to oral diseases. Low-power laser treatment (LT) can intensify cell metabolism and its application on salivary glands could improve salivation. The purpose of this study was to evaluate the effects of LT on salivation of patients suffering from hypo salivation.

Methods: The study included 17 patients with hypo salivation. Their major salivary glands were treated with low intensity laser BTL2000 on 10 occasions. The whole unstimulated and stimulated saliva quantities were measured just before the 1st, after the 10th and 30 days following the last (10th) treatment. In the samples of unstimulated saliva concentrations of sIgA were estimated by using ELISA method and it's quantity in the time unit was calculated. The visual analogue scale (VAS) score was used to assess burning and/or pain intensity in this three time points.

Results: Statistical tests revealed significant salivation improvement quantitatively and qualitatively, i.e. increase in the quantity of saliva and sIgA. VAS score was also significantly improved and no negative side effects were observed.

Conclusions: According to the results of this study, application of LT to xerostomic patients' major salivary glands stimulates them to produce more saliva with better antimicrobial characteristics and improves the difficulties that are associated with hypo salivation.

Relevance: This simple, non-invasive method could be used in everyday clinical practice for the treatment of hypo salivation.

P60

Retrospective diagnosis of proliferative verrucous leukoplakia with lichenoid histopathological feature

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Proliferative verrucous leukoplakia (PVL) is an aggressive variant of leukoplakia with high potential to malignant transformation. The identification of histopathological lichenoid features in PVL could lead to a misdiagnosis of OLP. The diagnosis aspects of six PVLs associated with histopathological lichenoid feature will be presented. These patients (two males and four females) were admitted at the Oral Medicine Service (F.O.Ar - UNESP). The chief complaints of all patients were white plaque and burning sensation. The mean age at the first consultation was 67.5 years. The clinical examination detected two patients presenting bilateral asymmetric lesions. One had erosive lesion rounded by Wickham's striae. None had history of tobacco or alcohol consumption. The mean follow-up period was 56.2 months and the mean number of biopsies per patient was 4.3. All patients showed histological pattern of oral lichenoid lesions (OLL) during the follow-up, whose main findings were chronic band-like lymphocytic inflammatory infiltrate and epithelial hyperplasia. The clinical evolution of PVL includes changes in the appearance, location, size, and, in this study, the association with burning complaint and lichenoid infiltrate would suggest the diagnosis of OLP. The OLP diagnosis is based on clinicopathological criteria. Finally, a retrospective evaluation of these patients excludes the PVL mistaken for OLP, once the lesions did not present, either clinically or histopathologically, classical features of OLP. Therefore, this study presents true PVLs during a long period of follow-up with some cases of malignization.

P61

Ki67, p53 and p63 in oral dysplasia: a retrospective study

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Aim: To study p63, p53 and Ki67 level and the pattern of expression of in oral dysplastic lesions with and without a history of transformation.

Methods: Archival formalin fixed, paraffin embedded samples of dysplasia and squamous cell carcinoma (SCC) from patients with multiple oral lesions were stained with antibodies for Ki67, p53 and p63 (Dako). The labelling index (LI) and patterns of expression (basal, suprabasal, all levels) were evaluated in 10 high power fields. We compared three groups: dysplasia in patients with SCC at the same site (group 1), dysplasia in patient with SCC at a different site (group 2) and dysplasia only (group 3).

Results: Eighty four biopsies from 26 patients were analyzed. The mean LI for p53 was 30.09%, 20.81%, 40.89% for groups 1, 2, 3, expressed predominantly in basal and suprabasal levels. The mean LI for p63 was 82.98%, 81.89%, 77.8% for groups 1, 2, 3 respectively, expressed at all levels in all three groups. The mean LI for Ki67 was 31.77%, 29%, 20.42% for groups 1, 2, 3 respectively, expressed predominantly in basal and suprabasal layers in all groups.

Conclusions: The preliminary results show similar levels and patterns of expression of the examined markers in all three groups of dysplastic lesions examined, without significant differences between groups. This is in agreement with the newly published classification of pre-malignant disorders, which considers all areas of the oral cavity at risk for cancer in patients with oral dysplasia, and not just the affected area, therefore termed potentially malignant disorders.

P62

Is diagnostic delay in oral cancer associated to advanced stage disease stages? A meta-analysis

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Purpose: Diagnostic delay in oro-pharyngeal cancer may be related with poor prognosis. However, a certain controversy exists on this topic due to contradictory results. The aim of this study is to assess whether total diagnostic delay is related to advanced stages of disease at diagnosis by means of a meta-analysis of observational studies.

Methods: We performed a systematic search on computerized databases including MEDLINE, EMBASE, and ISI proceedings, for both English and non-English

language articles. The abstracts of the articles were screened to exclude irrelevant studies. All searches were independently undertaken by two clinicians and one epidemiologist, and the results merged. We included observational studies that provided relative risks and 95% confidence intervals of patients with confirmed pathological diagnosis of oropharyngeal cancer. The outcome of interest was defined as disease stage (TNM) and the exposure of interest was total diagnostic delay defined as the period between the patient noticing either first sign or symptom and definitive diagnosis. We weighted the study-specific adjusted log relative risks for cohort studies by the inverse of their variance to compute a pooled relative risk and its 95% confidence interval.

Results: The pooled relative risk of advanced stages of the oro-pharyngeal cancer when diagnostic delay is present was 1.25 (95%CI: 0.84–1.85). The association is stronger when the analysis was restricted to oral cancer.

Conclusions: The probability for delayed patients to present an advanced stage tumour at diagnosis is significantly higher than that of non-delayed patients.

P63

Candida colonization and oral/periodontal status of patients with Sjögren's syndrome

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Objective: To compare the oral and periodontal status, oral hygiene, smoking habits, salivary flow rate, presence of prosthetic appliances, Candida carriage in saliva, and prevalence of Candida albicans colonization in gingival crevicular fluid, on dentures, on buccal, angular, palatal areas, and on tongue's dorsal surface of subjects with primary sjögren's syndrome (SS) as opposed to secondary SS.

Material and methods: Oral examinations of all patients (n = 27) were performed and their subjective symptoms were also evaluated. Salivary flow rate was determined. Presence of Candida in saliva was analyzed. Culturing for Candida albicans on buccal, angular, palatal and sulcular areas, tongue's dorsal surface and denture was performed. Number of teeth (NT), probing pocket depth (PPD), approximal plaque index (API) and bleeding on probing (BOP) scores were determined in dentate SS patients. The clinical evaluation also included determination of prosthetic appliances, oral hygiene and smoking habits of the patients with SS. Statistical analysis was performed using the 2-tailed Fisher exact and Kruskal-Wallis test.

Results: No significant difference was found between SS-1 and SS-2 groups by means of positively detected objective symptoms during oral clinical examination, salivary flow rate, periodontal status and Candida albicans colonization in different areas of the oral cavity, on dentures, and Candida carriage in saliva. Statistically significant difference was observed between SS-1 and SS-2 patients in terms of dysgeusia ($P < 0.05$). In the gingival crevicular fluid PCAC was found in only one subject out of 27 dentate SS patients.

Conclusion: All patients with SS presented high scores on PCAC in different areas of the oral cavity; the periodontal status and Candida colonization were similar among patients irrespectively of the type of SS they presented.

P64

Lack of periodontal pathogens in the bloodstream following dental extractions (a preliminary report)

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Purpose: Oral bacteria can access the bloodstream resulting in distant site (focal) infection and playing a potential role in the aetiology of some systemic diseases. Most published papers on bacteraemia following dental procedures found Streptococcus spp. to be the predominant isolated bacteria, while obligate anaerobes represented less than 10% of isolates. The aim of this study was to identify periodontal pathogens in the bloodstream following dental extractions applying specific microbiological culture techniques.

Methods: The study group was conformed by 20 patients who required dental extractions. Subgingival plaque samples were collected from the involved teeth. Venous blood samples were collected from each patient at baseline and 30 sec after dental extractions. Subgingival plaque was cultured in aerobic and anaerobic conditions applying specific microbiological culture techniques. Blood samples were cultured in aerobic and anaerobic conditions applying conventional and specific microbiological culture techniques.

Results: Periodontal pathogens were identified in 90% of subgingival plaque samples, but in 80% of patients they represented less than 30% of isolated bacteria. The prevalence of bacteraemia at 30 sec after dental extractions was 50%.

Streptococcus viridans group were the most common isolates (50%), followed by Staphylococcus spp (20%), several facultative anaerobes (20%), and Neisserias spp (10%). None anaerobic periodontal pathogens were isolated.

Conclusions: Culturable periodontal pathogens do not play a main role in bacteraemia following dental extractions.

Relevance: Dental manipulations could be irrelevant in the development of systemic diseases related to periodontal pathogens bacteraemia. The presence of fastidious and unculturable bacteria should be discharged by molecular techniques.

P65

Dentric cell activation in oral lichen planus

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Dendritic cells (DCs) play a role in the development of oral lichen planus (OLP) by regulating cell mediated immune response. However, antigens/stimuli known to activate DCs have not been clarified. We examined DC distribution and maturation in OLP using immunohistochemistry evaluations. Specimens from 38 clinically and histologically proven cases of OLP and 27 of lichenoid stomatitis (excluding Lichenoid dysplasia) were examined. Sections were subjected to immunostaining using Langerin, Fascin, CD1a, S-100, CCR7, sPLA2, COX2, D2-40, CD4, and CD8 antibodies. Oral lichen planus showed typical histological features, with CD4 and CD8 positive cells shown to form band-like cell infiltration, and CD8 positive cells identified in the epithelium. We also counted the numbers of DCs in both the intra-epithelium and submucosal area. Langerin-positive immature DCs were identified in disease free epithelia, and the number of DCs decreased in OLP lesions. Furthermore, numerous matured Fascin positive DCs were identified in the submucosa, whereas no positive cells were found in the epithelial layer of OLP lesions. In addition, mature DCs expressing CCR7 accumulated in the periphery of lymphoid vessels and entered the lumens. Also, the keratinocytes of OLP showed over expressions of PLA2 and COX2, which indicated that had locally synthesized PGE2. These results indicate that DCs are involved in the development and maintenance of OLP lesions. Keratinocytes synthesize PGE2, which affects DC cell to the final maturation or inhibits DC cell recruitment to the epithelium. Thus, interaction between DCs and keratinocytes is a key event for the development of OLP.

P66

Abstract withdrawn

P67

Osteonecrosis of the jaws by intravenous bisphosphonates and osteoradionecrosis: a comparative study

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Aims: We analyze the possible clinical differences between bone jaw exposed areas in osteonecrosis of the jaws (ONJ) and osteoradionecrosis (ORN).

Patients and method: Group 1 was composed with 53 ONJ cases and group 2 with 20 ORN cases. In both groups we analyzed, the major size of the exposed bone areas, the number of exposed areas, the location on the jaws and the presence of others associated and severe complications, such as skin fistulas and jaw fractures. We also investigated the possible local aetiology or trigger factor of the lesions.

Results: The major size of the bone exposed areas was 2.29 ± 2.02 (mean \pm standard deviation) in group 1 and 2.7 ± 2.9 in group 2 ($P > 0.05$). The number of exposed areas was 1.8 ± 1.34 in group 1 and 1.2 ± 0.55 in group 2 ($P > 0.05$). There were more fractures in the second group (20%) ($P < 0.05$), and skin fistulas (35%) ($P < 0.05$). We found more patients in group 1 in which the dental extraction was the local aetiology of the bone necrosis (35 cases, 66.03%), while in group 2 there were 8 (40%) ($P < 0.05$).

Conclusions: In our study with ONJ there were not differences in the major size of the bone exposed areas, but there were more lesions per patient than in group with ORN. The severity of the complications, such as jaw fractures and skin fistulas were higher in ORN, and in this group it was more frequent the spontaneous lesions than in the ONJ where it is more frequent following dental extractions.

P68

Penetration of polymersomes into tissue engineered models of oral mucosa and head and neck cancer

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Purpose: The amphiphilic block copolymer PMPC25 PDPA70 is able to self assemble into membrane enclosed vesicles known as polymersomes. These polymersomes are avidly taken up by cells and show no cytotoxic or inflammatory responses. Here we look at the penetration of these polymersomes across the oral epithelium and into models of head and neck cancer.

Methods: A tissue engineered normal oral mucosa (TENOM) is used to model the oral epithelium; while multi-cellular tumour spheroids (MCTS) are used to model in vivo solid head and neck carcinomas. Detection of fluorescently labelled polymersomes has been observed using fluorescence microscopy and confocal laser scanning microscopy. Quantification of the cellular uptake of the polymersomes has been achieved using flow cytometry.

Results: Polymersomes were demonstrated to enter 60% of cells in the oral epithelium after 24 h and over 70% of cells in MCTS after 72 h. Encapsulation of luciferase plasmid into these polymersomes has been used to successfully transfect the HNSCC FaDu cell line.

Conclusions: Polymersomes penetrated the epithelial layers of the TEOM and MCTS in a time-dependent manner and were avidly internalized by the cells. Polymersomes are a safe and effective method of transfection in FaDu monolayers.

Relevance: Treatment of head and neck cancer is challenging as it is particularly difficult to deliver drugs and DNA across the oral mucosa and into tumours. Polymersomes could provide a safe and efficient method of delivering drugs and DNA across the oral epithelium for the treatment of head and neck cancers.

69

Efficacy and safety of 0.3% benzydamine (Tantum verde forte – oral spray). A multicenter Austrian post marketing trial in ENT, dental and oncological indications

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Purpose: The antiphlogistic effect of benzydamine, due to the inhibition of the synthesis of pro-inflammatory cytokines, has been known for many years. This post-marketing trial of the new application via an oral spray aimed to assess the efficacy and safety in an open non-randomized multicenter trial.

Methods: 0.3% benzydamine containing oral spray (Tantum verde forte) was applied in 137 patients (median 43 years, 43% female) suffering from various inflammatory conditions of the oral, tonsillar, pharyngeal or laryngeal mucosa or a combination of these anatomic sites (mucositis grade I and II). Redness and swelling were documented by physicians whereas patients reported pain, hoarseness, swallowing discomfort and quality of life before and after an application period of 10 days. A 4-point Likert scale was used by both physicians and patients. Total outcome was documented on a verbal rating scale (VRS).

Results: Redness, pain and QoL decreased significantly ($P < 0.05$). Swelling, hoarseness and swallowing discomfort improved, but not at this level of significance. Older male patients experienced less improvement than young females (n.s.) Highest scores were achieved in stomatitis, dental prosthesis pressure and laryngitis/pharyngitis. Two thirds of physicians and patients rated the total outcome as very good. No serious drug-related adverse events were reported.

Conclusions: 0.3% benzydamine oral spray shows overall good results for the treatment of inflammatory conditions of the oral region in patients with grade I or II mucositis.

Relevance: The use of Tantum verde forte – oral spray appears to be an easy, safe and effective treatment option for non-ulcerated mucositis of the oral region.

P70

Oral symptoms among institutionalized and non-institutionalized elderly

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Purpose: The aim of the study was to evaluate differences of burning mouth, dry mouth sensation and taste disturbances among elderly living in nursing homes

(institutionalized elderly) and those living independently in the society (non-institutionalized elderly).

Methods: A total of 341 participants were included in this study. The first group consisted of 280 residents of nursing home (mean age = $72, 68 \pm 8, 43$; 134 male and 146 female) while the control group consisted of 61 non-institutionalized elderly (mean age = $70, 39 \pm 6, 16$; 23 male and 38 female). The examination consisted of complete anamnesis and clinical status according to registration form designed for this purpose. Dry mouth was assessed by the symptoms of the participants such as: small or absent saliva pool in the floor of the mouth, frothy saliva, stickiness upon removal of dental mirror, persistent daily felling of dryness and drinking liquids overnight. Analysis of Chi-square test was performed to evaluate the statistical significance between the groups.

Results: Sixty-three residents of nursing home (22.5%) were complain to burning sensation, 203 (72.5%) to dry mouth and four (1.4%) to taste disturbances. Fifteen non-institutionalized elderly (24.5%) complain to burning mouth, 47 (77.04%) to dry mouth and one (1.6%) to taste disturbances. The results between groups were similar (Chi-square test = 1.78; $P = 0.410$).

Conclusion: There were no differences between institutionalized and non-institutionalized elderly in burning mouth, dry mouth sensation and taste disturbances.

P71

The prevalence and malignant transformation rate of oral lichen planus (OLP) and leukoplakia - a retrospective study

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Purpose: Oral lichen planus and leukoplakia are considered to be pre-malignant lesions. The aim of this study was to determine the prevalence of OLP, leukoplakia and their combination as well as pre-cancerous potential of those lesions.

Methods: Retrospective data were taken from the medical records of total 9202 patients attending Department of Oral Medicine, between 2000 and 2007. According to the clinical and histopathological criteria 404 were diagnosed as OLP, 94 as leukoplakia (nine were Candidal leukoplakia), and 13 as combination of OLP and leukoplakia.

Results: Among our patients the prevalence of OLP was 4.3%, of leukoplakia 1.02%, and of combined diagnoses 0.14%. Biopsies were taken in 158 cases of OLP, 44 leukoplakia and 7 out of 13 combined diseases and the diagnoses were histopathologically proven. In primary biopsies dysplasia was found in 22.72% of patients with leukoplakia and not in one with OLP and combined lesions. Follow-up biopsies were performed in the period of 2 years, in 2.15% of the patients, mostly with leukoplakia. During the follow-up period three leukoplakia altered to dysplasia and one to squamous cell carcinoma.

Conclusion: The most frequent disease was OLP, followed by leukoplakia. The greatest tendency for malignant transformation showed leukoplakia while in OLP no signs of dysplasia were found.

Relevance: Higher rate of malignant transformation in leukoplakia than in OLP indicates that pre-malignant lesions should be regularly followed-up and histopathologically examined.

P72

Molecular analysis of survivin mRNA in oral mucosa affected from leukoplakia and oral cancer

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Purpose: Our aim is to illustrate the expression degree of survivin, a protein involved in modulation of cell death and cell division processes, in oral precancerous and cancerous lesions vs. clinically normal mucosa, in order to better understand its role in oral carcinogenesis process.

Methods: To investigate survivin expression we measured survivin mRNA levels by real-time RT-PCR in 50 specimens of oral mucosa (15 from clinically normal mucosa, 17 from pre-malignant lesions, 18 from neoplasm).

Results: The median relative levels of survivin mRNA resulted 6 for normal mucosa, 8 for pre-cancer, 15 for cancer group: the differences among these three tissues were statistically significant ($P = 0.0008$), as between cancer and pre-cancer group. Expression in normal mucosa and pre-cancer group showed no significant difference. Low, but not marginal expression of survivin in normal mucosa is a new finding and it could be explained with the higher sensibility of our investigation method. Up regulation of survivin in cancer specimens confirms the putative role that this protein plays in carcinogenesis processes, while survivin expression in oral pre-malignant lesions might indicate a progressive deregulation of survivin expression paralleling oncogenesis, particularly during the first stages of the process, suggesting a putative predictive role for survivin.

Conclusions and relevance: Survivin expression seems to be progressively deregulated during the oral oncogenesis process: for this reason it could become a useful help in diagnostic and prognostic evaluation in patients affected from oral cancerous and precancerous lesion.

P73

Using tissue engineered oral mucosa to identify innate defence mechanisms against yeast and hyphal forms of *Candida albicans*

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Purpose: *Candida albicans* can undergo morphogenic transformation from its commensal yeast form to a pathogenic hyphal form, which can cause oropharyngeal candidiasis. Local innate defence mechanisms of the oral mucosa are important in providing immunity against infection and maintaining a commensal relationship. Little is known about these mechanisms.

Method: Tissue engineered oral epithelium was infected with a modified strain of *C. albicans* (SSY50-B) in which hyphal conversion is controlled by a doxycycline (DOX) regulatable promoter. Epithelial damage and cytokine secretion was analysed by histology/LDH release and ELISA respectively.

Results: In the presence of DOX (SSY50-B hyphal form), tissue damage and LDH release increased in a time-dependent manner and was extensive by 48 h with hyphae ramifying the epithelium. This increase in damage was mirrored by release of IL-1 β , CXCL8, GM-CSF. In the absence of DOX (SSY50-B yeast form) tissue damage and LDH release was evident but was less marked and the release of CXCL8 and GM-CSF was significantly lower. Interestingly, yeast forms failed to elicit an IL-1 β response. These data show that there are marked differences in the oral epithelial innate response to yeast and hyphal forms of *Candida*.

Conclusion: These data suggest that the hyphal form of *C. albicans* is more invasive and rapidly destructive to epithelium, although within our model system yeast forms were capable of causing similar levels of tissue damage and cytokine release.

Relevance: Understanding the mechanisms involved in the morphogenic conversion of *Candida*, and the role played by innate epithelial defences will enhance our knowledge in the prevention and treatment of oral candidiasis.

P74

Oral dysaesthesia and quality of life

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The aim of this ongoing study is to determine the quality of life implications of oral dysaesthesia. Patients with a definitive diagnosis of oral dysaesthesia are recruited from the Oral Medicine Unit of Cork Dental Hospital. Interviews using validated scales and questionnaires are conducted at the initial visit and again at recall appointments. The visual analogue scale (VAS) and short form McGill pain questionnaire (SF-MPQ) are used to record the type and severity of symptoms along with the hospital anxiety and depression (HAD) scale and oral health impact profile (OHIP-14). Results of the validated scales and questionnaires used along with the presenting symptoms and treatment regimes are entered on a standard proforma. Thirty patients have been enrolled to date. The mean VAS at the initial visit was 7.2 with an average reduction of 30% after only 8 weeks. The most common SF-MPQ descriptor recorded was hot/burning with a reduction from severe to moderate in 81% of patients. Only 24% of patients had an anxiety and depression score within the normal range of the HAD scale at the beginning of treatment. The mean initial unweighted additive OHIP-14 measure was 20 (/56) with the psychological discomfort domain of the questionnaire having the highest scores.

Conclusion: Our preliminary results support the hypothesis that oral dysaesthesia has a significant impact on quality of life. Secondly, treatment regimes ranging from simple

reassurance to the prescription of various pharmacological agents also impact positively on quality of life parameters.

P75

Topical clobetasol: is its systemic absorption real? A preliminary study about the application on oral mucous

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Purpose: Clobetasol-17-propionate is the most potent topical corticosteroid used in oral medicine for treatment of some inflammatory chronic diseases. In presence of ulcers and atrophic lesions or to reduce pain, mucosal disorders often require prolonged therapies, exposing patients to several side-effects, even systemically. Actually, it has been reported about patients with cushingoid appearance, associated to low concentrations of corticotropin and cortisol, suggesting an adrenal suppression linked to corticosteroid's systemic absorption. Due to the lack of studies about this topic, our goal is to assess whether systemic absorption of topical clobetasol really occurs.

Methods: Blood samples were collected from patients affected by oral lichen planus and by mucous membrane pemphigoid, needing clobetasol 0.05% local therapy. We noted patients' data, clinical exam of oral cavity, duration and frequency of application, use of ointment or gel, concomitant pathologies and drugs. A new high-performance liquid chromatography method has been employed to detect its serum concentrations (instrumental's sensibility up to 0.1 ng mL⁻¹).

Results: Clobetasol absorption has been shown in the most of cases, although it seems not to reach sufficient amount to produce systemic effect. Different levels of the drug have been found in relation to patient's disease.

Conclusions: These preliminary results suggest that the absorption may depend from the extent of application's area. No correlation with presence of ulcers/erosions, duration/dosage of therapy has been found.

Relevance: For the first time, this study appears clinically important to scientific confirm to the safety of clobetasol's treatment, monitoring patients about a possible adrenal suppression clobetasol-related.

P76

An analysis of the diagnostic activity in the unit of Oral Pathology and Medicine of the University of Milan from 1997 to 2007

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Purpose: The aim of the following investigation is to determinate the frequency of oral lesions submitted to histological diagnosis over a 10-year period in the Unit of Oral Pathology and Medicine, University of Milan.

Methods: All specimens from 1997 to 2007 were retrieved and data regarding age and sex of patient, histological diagnosis and site of lesion were entered into a computer database appositely prepared.

Results: During the period, 3004 specimens were drawn from 2656 patients, with a male-to-female ratio of 0.7:1. The six most frequently diagnosed lesions were oral lichen planus (22.67%), traumatic fibroma (16.54%), ipercheratosis (5.69%), oral cancer (5.19%), mucocoele (4.99%), papilloma (4.53%). These results were also compiled into four different age groups: under 18-years old (2.89% of all specimens) the most frequent lesion was mucocoele; from 19 to 40-years old (18.18%) traumatic fibroma; from 41 to 65-years old (50.57%) and over 65-years old (28.36%) oral lichen planus was the most common biopsied pathology.

Conclusions and Relevance: Relatively few recent studies deal on the prevalence of oral disease; most of them are purely clinical, documenting the frequency and intraoral distribution of oral mucosal lesions but lacking histological confirmation. Our results do not represent the actual prevalence of oral lesions, but reflect the relative frequency of pathologies worthy of histological diagnosis. Most diagnoses are benign in nature; despite the datum about oral cancer frequency shows clearly the relevance of malignant diseases. The distribution of different oral lesions is strictly correlated to age groups.

P77

Unstimulated saliva specific gravity collected by spitting method

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Purpose: Little information is available concerning saliva's specific gravity, which is commonly considered one. Our purpose was to evaluate saliva's specific gravity and

the clinical value of the spitting method, the most reliable method to measure the unstimulated whole saliva, according to literature.

Method: We randomly selected a group of healthy subjects, taking no medications, and a group of patients, whose systemic and local disorders, oral complaint and medications were documented. The healthy group underwent the sampling under ideal conditions, between 8.30 and 13.30, avoiding smoking, drinking and eating for 1 h before the test, resting for 3 min, having a rinse with water, swallowing and beginning the collection of saliva in the mouth. They spit in a funnel, linked to a pre-weighted and graduated test tube every 60 sec, for 3 min and repeated the test three times. They underwent a second collection trial after few months and then both groups repeated the experiment under clinical conditions, recording information's about breakfast, food, drink and smoke. The test tubes were immediately weighted and volume was evaluated. Unstimulated Whole Saliva, expressed in ml min^{-1} and g min^{-1} , specific gravity, within subject variance and test retest reliability were calculated under ideal and clinical conditions.

Results: Our results about the spitting method over 3 min agree with current literature, also in clinical environment, while the specific gravity of saliva appears to be higher than one.

Conclusions and relevance: This simple method could be reliable to evaluate salivary flow rate of our patients.

P78

Palatal perforations from cocaine inhalation: a report of five cases

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Proposal: Palatal perforations are a complication seen in some patients who are addicted to cocaine through inhalation. The authors carried out an analysis of the epidemiological, clinical and radiological data of five patients who had been treated at the Stomatology Department of Valencia's University General Hospital (Valencia, Spain).

Method: The sample comprised five patients with palatal perforation from cocaine: Three women and two men, ranging from 29 to 52 years old.

Results: Four of the five patients had a single lesion on the hard palate. One patient had two separate lesions, one on the hard palates and one on the soft. The lesions ranged in size from 0,5 cm to 4 cm. Computerised tomographies on all patients showed destruction by erosion of the nasal septum, maxillary bones and lower turbinates.

Conclusions: Palatal perforation from cocaine is an uncommon complication, but in view of the growing number of consumers of this drug in Europe, the clinician should bear this condition in mind when performing a differential diagnosis.

Relevance: In view of the scarcity of published material on this pathology, the authors' series of five cases provides additional data that could complement the cases already published.

P79

Evaluation of periodontal status and serum & salivary antioxidant profile of patients with oral lichen planus

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Purpose: Oral lichen planus (OLP) is a chronic inflammatory disease characterized by relapses and remissions. It is a cell-mediated immune condition of unknown etiology, in which T lymphocytes accumulate beneath the epithelium of the oral mucosa and increase the rate of differentiation of the stratified squamous epithelium, resulting in hyperkeratosis and erythema with or without ulceration. Several types of OLP (reticular, erosive, plaque, erythematous, atrophic and bullous) have been described. Antioxidant system capacity has been reported to be affected during the course of periodontitis. Oxidative stress is a situation in which the amount of reactive oxygen species (ROS) exceeds the levels of neutralizing substances referred to antioxidants. Lipid peroxidation often occurs in response to oxidative stress and a great variety of aldehydes is formed when lipid hydroperoxides breakdown in biological systems. The most widely used index of lipid peroxidation is malondialdehyde (MDA) formation. The imbalances in levels of ROS with antioxidants may play an important role in the onset and development of several inflammatory oral pathologies.

Aim: The aim of this study was to assess the level of lipid peroxidation, total antioxidant activity (TAA) in serum & saliva and the periodontal status of patients with OLP in comparison with healthy controls.

Methods: TAA and MDA levels were measured in both serum and saliva of patients with OLP.

Results: There was no statistically significant difference between the OLP patients and the healthy subjects in regards of the periodontal status. There were statistically significant differences between patients with OLP and control group in regards of salivary MDA ($z = 2.24$, $P = 0.03$) and serum TAA's ($z = 2.48$, $P = 0.01$). Serum TAA's in patients with reticular OLP were higher than in patients with erosive OLP. A significant correlation was found between serum and saliva TAA values in patients with OLP ($r = 0.714$ and $P = 0.0001$) and control group ($r = 0.69$ and $P = 0.001$). Significant correlation was also found between serum and saliva MDA values in control group ($r = 0.464$ and $P = 0.04$). A significant inverse correlation was found between salivary MDA and TAA values in control group ($r = -0.598$ and $P = 0.005$).

Conclusions: The findings of this study suggest that increased oxidative stress and imbalance in the antioxidant defence system may be involved in the pathogenesis of OLP.

P80

Burning mouth syndrome: experience of management

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Purpose: Burning mouth syndrome is a common condition observed in Oral Medicine specialists' practice.

Methods: We summarize the results of seven years of treating BMS patients ($n = 102$) in the Department of Oral Diagnostics, Medicine and Pathology, Institute of Stomatology. Patients were asked also to fill in a questionnaire.

Results: BMS affected more women $n = 88$, from 44–72 years of age. The main symptoms of BMS were burning sensations involving tongue lateral surface ($n = 26$); tip of tongue ($n = 18$); lips ($n = 24$), fundus cavi oris ($n = 6$), buccae ($n = 12$), throat ($n = 10$), proc. Alveolaris mandibulae ($n = 8$), proc. Alveolaris maxillae ($n = 10$), widespread areas of whole mouth ($n = 32$). The other symptoms included: dryness, irritation, thirst, taste disturbances, eye dryness, swallowing problems, headache, sleeplessness, changes of mood including depression. Patients ($n = 67$) noticed burning sensations became more intense during the day extending into the evening, but were less noticeable on waking; $n = 35$ noticed constant burning sensation the whole day, starting on waking.

Conclusions: The diagnosis of BMS involves the identification of an array of symptoms, which may be very confusing. A multidisciplinary team is required for management and requires input from Oral Medicine specialists, Gastroenterologists, Psychologists, Neurologists and Psychiatrists.

P81

Level of satisfaction with applied therapies on recurrent aphthous stomatitis patients and oral health-related quality of life evaluation

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Purpose: To investigate patients' satisfaction to recurrent aphthous stomatitis (RAS) therapies and assess impact of RAS on their quality of life (QoL).

Methods: A group of 42 RAS patients (F/M: 27/15, mean age 36.3 ± 11.4), had their RAS history recorded, including previous treatments experience. The Brazilian version of Oral Health Impact Profile-14 (OHIP-14) was applied to 20 RAS patients during active disease and to a healthy control group (HC), matched by sex, age and oral health.

Results: Fourteen different treatment modalities were identified from the patients' history, mainly topical corticosteroids (69%), caustic agents (47.6%) and natural products (26.2%). Currently 22 patients (52.4%) leave RAS heal by itself, 13 (30.9%) use corticosteroids, 6 (14.3%) use propolis (bee-glue) and one antiseptic (2.4%). Only eight patients (19%) are satisfied with the therapy in use. OHIP-14 score was found significantly worse in RAS group (27.6 ± 10.4) than in HC (4.2 ± 5.4 , $P < 0.000$), but no significant difference was observed between severe RAS patients (31.6 ± 9.2) and mild to moderate ones (22.5 ± 10.1 , $P = 0.063$).

Conclusions: RAS patients presented poor oral health-related quality of life during active bouts whatever disease severity, especially on physical and psychological domains. Patients were unsatisfied with RAS treatment alternatives and the majority of them were no longer using any medication, despite QoL impairment.

Relevance: RAS therapy is still somewhat empirical and despite some benefits achieved with therapies available there is scarce information on patients' satisfaction with the outcomes, as well as objective evaluations of RAS patients' quality of life.

P82**Etiological determinants in the burning mouth syndrome – a preliminary study**

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Purpose: Burning mouth syndrome (BMS) is a chronic pain syndrome. An important role in the etiology of this disease may play psychological and neurological disturbances. The purpose of the study was to define psychological and neurological conditioning of the patients with BMS.

Methods: The study was carried out on 30 patients with BMS. All patients had undergone an anamnesis, a physical examination and psychological tests. The State-Trait Anxiety Inventory (STAI) and General Health Questionnaire (GHQ-28) were performed. The function of autonomic system was observed according to Autonomic System Disorders Questionnaire.

Results: The most often observed clinical type of burning was type 1 BMS according to Lamey and Lewis- 17 subjects. Among the group examined by psychologist (29 subjects) 21 subjects had high or moderate scores in the trait-anxiety, 25 subjects had high or moderate degree of state-anxiety. Non-specific dysautonomy was observed in 3 cases, mild dysautonomy in 17, moderate in 9 and severe dysautonomy in one case.

Conclusions: Psychological factors such as anxiety, stress and depression can be the cause of burning mouth syndrome. This disease has a psychogenic background, what should reflect the performed treatment. The disturbances in the autonomic system are often observed in the patients with BMS. The patients have also often no habituation in blink reflex. This can indicate the role of the central disturbances in the pathogenesis of BMS.

Relevance: The dentist should refer the patients with BMS to the psychiatrist and neurologist to find the best pharmacological way of treatment if the psychological/neurological disturbances will be confirmed.

P83**Environmental sampling of latex in dentistry: airborne and glove allergens**

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Purpose: Current methods for quantifying the risk of allergic reactions to latex are incomplete and inadequately reproducible in dentistry units. Aim of the study was both to measure single allergens in latex gloves and detect airborne allergens in dentist's surgery room, adopting a quantitative and reproducible method.

Methods: The method is based on monoclonal antibodies that can guarantee molecular specificity. The results are quantitative and reproducible in a DD-ELISA system which is applied to natural rubber extracts of latex gloves, and environmental samplings collected by a high flow pump.

Results: The study allowed quantifying either the latex antigen content of the gloves in use or the airborne latex allergens in dentist's surgery room. Therefore, Hev b5, Hev b6.02, which are considered the main allergens responsible for allergic reactions in the health sector, have been quantified. The proscription of gloves with dust particles in dentistry unit can reduce and prevent the risk of respiratory exposure.

Conclusions: According to the scientific literature the observed values are a useful start point in order to establish threshold limit values related to sensitisation and appearance of allergic symptoms. Moreover, quantification of allergenic content in gloves can provide very useful support to everyday surgery activity.

Relevance: The methodology for evaluating levels of allergens allows comparing different studies, promoting guidelines for rubber industry, and offering suitable documents in the purchase of the safest gloves.

P84**Data collection and record retrieval of new facial pain patients, with or without structured questionnaires**

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Aims: To evaluate the recorded pain features and their facility of retrieval by structured questionnaires compared to unstructured clinical notes of first attendance facial pain patients.

Methods: Randomly selected facial pain case files with (n = 20) and without (n = 20) structured questionnaires were assessed. The presence of the pain site, radiation, severity, character, timing, periodicity, and provoking, relieving and associated factors was recorded on an Excel spreadsheet. Each was marked as present one or absent 0 zero. Data retrieval without doubt (< 1 min) was graded easy (1), 1–2 min as average (2), and > 2 min as difficult (3).

Results: Unstructured collection showed multiple deficiencies with only 25% data collection for pain radiation and 5% for pain severity. Structured data collection questionnaires showed 100% data on; site, character, timing of the pain and associated factors. Periodicity, provoking and relieving factors were 85, 95 and 80% respectively. Only 60% questionnaires had information on pain radiation and severity. A modified structured questionnaire was applied which increased the data collection for radiation to 95%, periodicity to 100% and provoking factors to 100% but reduced the data for severity to 35% and relieving factors to 55%. The ease of retrieval of data from the records was; Unstructured - easy 15%, average 55% and difficult 30% whereas initially the structured questionnaire data was 70% easy and 30 % average but improved to 100% easy.

Conclusions: Standardised questionnaires allow more reliable data collection and ease of subsequent access than the unstructured history. However the persistent deficits require investigation and correction to a more clinician friendly structure.

P85**Expression of BCL-2 in patients with oral lichen planus (OLP)**

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Purpose: Programmed cell death is mediated by the action/interaction of many proteins (gene products) such as p53, c-myc and bcl-2. Bcl-2 is the epitome of an antiapoptotic or survival gene. Overexpression of bcl-2 results in an alteration of programmed cell death with persistence of cells that fail to die. The aim of this study was to investigate the malignant potential of OLP on the basis of expression of the bcl-2 marker in healthy individuals, OLP patients and patients with carcinoma (CA).

Materials and Method: Immunohistochemistry for bcl-2 was carried out using an avidin-biotin peroxidase complex method.

Results and Discussion: In this research keratinocytes were not bcl-2 positive in healthy controls and they were sparsely positive in OLP. Number of lymphocytes stained with bcl-2 in this survey was significantly lower in healthy individuals in comparison to patients with CA and OLP. There were noticed progressive changes in number of lymphocytes stained with bcl-2 from normal tissue, OLP to squamous cell carcinoma (SCC). Bcl-2 staining was weak to moderate in OLP, and moderate to intense in CA specimens. In healthy controls all specimens were negative. The intensity of bcl-2 coloration was changed gradually from normal mucosa to SCC. Bcl-2 show increased expression in sequentially progressing epithelial dysplasia, but diminished expression in differentiating carcinomas.

Conclusion: These results suggest that altered bcl-2 proteins may be involved in early carcinogenesis.

P86**Two different formulations of topical clobetasol in the treatment of atrophic-erosive oral lichen planus: a randomized double blind clinical trial**

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Purpose: Oral lichen planus (OLP) is a chronic inflammatory disease that can be painful, mainly in the atrophic and erosive forms. Numerous drugs have been used with dissimilar results. To date, the most commonly employed and useful agents for the treatment of LP are topical corticosteroids. This randomised, comparative, double-blind study has been designed to compare the effectiveness of two different formulation of clobetasol, a very potent topical steroid, in the topical management of oral lichen planus, and to evaluate which gives the longest remission from signs and symptoms.

Methods: Thirty patients were divided into two groups to receive clobetasol propionate 0.025% or 0.05% for 8 weeks. Both drugs were placed in 4% hydroxyethyl cellulose bioadhesive gel. Antimicrobial prophylaxis was also given.

Result: After the end of therapy, patients underwent a two-month follow-up. 14 of the 15 clobetasol 0.025% patients (93%), while 13 of the 15 clobetasol 0.05% patients (87%), had symptoms improvement after two months of therapy (P = 0.001 in both groups). 13 of the 15 clobetasol 0.025% patients (87%), while 11 of the 15 clobetasol 0.05% patients (73%), had clinical improvement after two months of therapy (P < 0.05 in both groups).

Conclusions: This study suggests that clobetasol propionate in 4% hydroxyethyl cellulose gel, independently from the concentration used, would currently appear to be a treatment of choice for atrophic-erosive OLP, providing comparable clinical efficacy, being safe and well tolerated. A larger concentration of the active molecules cannot further improve the therapeutic findings, nor optimize in a significant manner the obtained results.

Relevance: Clobetasol, a super-potent halogenated corticosteroids, is probably one of the most effective drugs in the topical management of OLP.

P87 Combined treatment with topical tacrolimus and oral hygiene in the treatment of a case of chronic graft vs. host disease, with prevalent gingival involvement

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Purpose: Graft versus host disease (GVHD) is a complication following bone marrow transplantation that frequently involves oral mucosa. Recent reports suggest that local therapies can be helpful in the management of oral lesions caused by GVHD. For the first time, we report a case in which topical treatment with tacrolimus and periodontal therapy allowed to control a severe case of oral GVHD.

Methods: A 63-year-old female patient, who underwent an allogeneic transplantation for acute myeloid leukemia about 5 years ago, with a complete clinical remission, presented a chronic oral and cutaneous GVHD of moderate degree; oral manifestations were characterized by atrophic and erosive lichenoid lesions on buccal and gingival mucosa. Even if an immunosuppressive therapy with ciclosporin and prednisone was carried out, the control of the disease was no good. The intense symptomatology made chewing, speaking and home oral hygiene very difficult. The patient has been treated with topical tacrolimus 0.1% ointment, two applications a day, for two months and a protocol of oral hygiene characterized by three appointments of scaling, root planing and instructions to home oral hygiene.

Results: The patient, at the end of the protocol, showed resolution of gingival lesions and a significant improvement of buccal lesions.

Conclusion and relevance: This case-report suggests that a combined treatment with topical tacrolimus and etiologic periodontal therapy is helpful in the management of chronic oral GVHD with severe gingival involvement. Further studies on larger groups of patients are however suggested.

P88 Salivary interleukin-6 and tumour necrosis factor levels in patients with oral squamous cell carcinoma

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Purpose: The aim of this study was to investigate if there were differences between oral squamous cell carcinoma and controls, in salivary interleukin 6 (IL-6) and tumour necrosis factor (TNF).

Methods: Group 1 was composed of 10 patients with OSCC before the treatment for their neoplasm. Group 2 comprised 10 controls with clinically normal oral mucosa. In both groups, whole resting saliva samples were collected to determine, using an ELISA technique, the salivary IL-6 and TNF concentrations.

Results: In cancer group, salivary IL-6 concentration was $89.9 \pm 178.6 \text{ pg ml}^{-1}$ while in controls was $21.2 \pm 46.1 \text{ pg ml}^{-1}$, but no statistically significant differences were found ($P > 0.05$). On the other hand, the amount of TNF in group 1 was $72.5 \pm 69.1 \text{ pg ml}^{-1}$ and in group 2 was $46.2 \pm 48.5 \text{ pg ml}^{-1}$. No significant differences were found ($P > 0.05$).

Conclusions: The results of this study indicate that salivary IL-6 and TNF expression were higher in cancer group than in controls. Despite the notorious differences between both groups, no statistical significances were found.

Relevance: This study is in agreement with other recent publications that report an increase of salivary IL-6 and TNF levels in patients with OSCC. Although there is not statistical significance and the number of cases is small, our results show obvious differences between control and cancer group.

P89 Salivary gland biopsy in Sjögren's syndrome

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Purpose: To develop a diagnostic protocol for Sjögren's syndrome (SS) based on the classification criteria published in 2002 by the American European Consensus Group (AECG) and to evaluate if it could modify the indications to salivary gland biopsy.

Methods: The clinical charts of 27 patients investigated for SS have been retrospectively evaluated by means of a three-step diagnostic protocol: 1 ocular/oral symptoms (items I and II of the AECG criteria) and anamnesis for secondary SS or exclusion criteria; 2 ocular signs, salivary gland involvement, autoantibodies (items III, V and VI of the AECG criteria) and serology for exclusion criteria; three histopathology (items IV of the AECG criteria). Patients accessed the following stage only if the latter could be useful to obtain a score suitable for the diagnosis.

Results: The salivary gland biopsy had been performed in 10 cases, but only four out of them would have been needed if the diagnostic protocol had been applied. Conversely three cases needing a further histological assessment to reach the diagnosis of SS have been identified.

Conclusions: This diagnostic protocol could reduce the number of cases needing a salivary gland biopsy.

Relevance: Either major or minor salivary gland biopsy implies an invasive sample with risk of complications and sequelae; the reported protocol could be an aid to select a limited number of patients needing this procedure.

P90 Oral cancer diagnosis by mechanical phenotyping

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Purpose: Oral squamous-cell carcinomas are among the ten most common cancers and have a 50% mortality rate after five years. The identification of a cellular marker for functional changes may represent a significant improvement not only for early diagnosis but also for prognosis and treatment of oral cancer. Optical cell rheology using a microfluidic optical stretcher is a novel approach to determine the complex cellular polymer network as a whole. Therefore measurable differences in viscoelasticity may be recommended as a cytometric marker for diagnosis of malignancy.

Methods: Cell lines, cultured primary keratinocytes and cancer cells were expanded under standardized conditions. Measurement of cell viscoelasticity was performed using a microfluidic optical stretcher, a two-beam laser trap optimized to serially deform single suspended cells by optically induced surface forces.

Results: Cancer cell lines showed significantly different viscoelastic compliant behaviour with a mean compliances of $D_n (t = 0.5 \text{ s}) = (7.18 \pm 0.43)10^{-3} \text{ Pa}^{-1}$ in comparison to healthy cell lines with $D_c (t = 0.5 \text{ s}) = (18.2 \pm 1.1)10^{-3} \text{ Pa}^{-1}$. The primary cultured epithelial cell showed in comparison to cancer cells an average compliance value of $D_n (t = 0.2 \text{ s}) = (4.43 \pm 0.68)10^{-3} \text{ Pa}^{-1}$ and $D_c (t = 0.2 \text{ s}) = (15.8 \pm 1.5)10^{-3} \text{ Pa}^{-1}$, respectively. Normal and cancer cells are statistically distinguishable in both experiments in a Mann-Whitney U-test ($P < 0.01$).

Conclusion: Our results indicate that mechanical phenotyping is a sensible approach for identifying malignant oral epithelial cells.

Relevance: The ability to obtain cells in a minimally invasive manner by brush biopsies in combination with mechanical phenotyping using an optical stretcher may enable the development of a simple screening method for oral cancer suitable for broad application.

P91 Computed tomography in TN stage and follow-up of oral cavity and oropharyngeal cancers

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Objective: Imaging examinations can provide key information for the adequate staging of oral cancer patients, such as depth or extent of invasion, bone invasion and evaluation of regional lymph nodes. This study was undertaken to discuss the role of the computed tomography (CT) for TN stage evaluation and follow-up of oral cavity and oropharyngeal cancer patients.

Study design: The following clinical and tomographic findings of 15 non-treated oral cavity and oropharyngeal patients were compared: tumour size, bone invasion, muscle changes and lymph node metastases. Other 15 patients who had previously been treated, a clinical and tomographic analysis comparison for the presence of tumoral recurrence and lymph node metastases were performed. The Aim was also to verify variability in CT evaluation between medical and dental professionals.

Results: CT was effective for delimitating advanced lesions and for detecting lymph nodes involvement in N0 staged patients. CT revealed two cases of bone invasion not clinically detected. No concordance was demonstrated between clinical and tomographic staging, except for the evaluation of tumour size. In the group of treated patients, CT disclosed muscle changes, tumour recurrence, and lymph node metastases.

Conclusions: Although CT was important in the diagnosis and follow-up of patients with oral cancer, differences between clinical and tomographic analyses should be recognized.

P92**The prevalence of systemic diseases and medications in Croatian patients with oral lichen planus**

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Purpose: Systemic diseases and medications are considered to be precipitating factors in the development of oral lichen planus (OLP). The purpose was to examine the prevalence of systemic diseases and medications in patients with OLP and to determine their possible causal relationship.

Methods: Data from medical records of 145 patients with clinically and histopathologically proven OLP were retrospectively collected for the period of 3 years.

Results: Systemic diseases associated with OLP were found in 86% of patients. The most frequent disease was hypertension (46%), found isolated or in combination. Within this combination, 56% of hypertension was associated with liver disease and diabetes and 44% was combined with other diseases. Twenty-two percent of OLP patients had some of other diseases (arthritis, blood diseases, gastrointestinal diseases, thyroid gland disease and allergy). Diseases found with less frequency were liver and gallbladder diseases (11%), diabetes (5%) and both, diabetes and liver disease (2%). Fourteen percent of patients had no systemic diseases. The most commonly used medications were antihypertensives alone (26%) and in combination with non-steroid anti-inflammatory drugs (14%). Other medications were in minority. Forty-one percent of patients took no medication.

Conclusion: Our results do not support causal relationship of OLP with any of systemic disease or certain medication.

Relevance: OLP is more likely to fit to the general population systemic diseases prevalence according to the epidemiological national data, than as it could be etiologically associated with present diseases.

P93**Detection of anaploid cells in premalignant and malignant oral lesions using combined morphological and FISH analysis – a new method for early detection of suspicious oral lesions**

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Alteration in DNA content is an early event in oral carcinogenesis. We have examined oral brush samples to detect anaploid cells (ACs) using simultaneous morphological and cytogenetic analysis. The study included eight oral Squamous cell carcinomas (OSCC), 46 oral premalignant lesions (OPLs) in 29 patients, and 35 control patients. Slides stained with Giemsa followed by FISH using chromosome 2 and 8 centromeric DNA probes, were scanned and fluorescent signals were simultaneously analyzed in parallel with the morphology. The proportion of ACs increased with the severity of the final diagnosis. In five control patients, 1–1.5% of the examined cells were ACs. Over 2% ACs were present in all OSCC cases and in 14 of the OPLs, of which, in 8 the histologic diagnosis was either epithelial hyperplasia or mild dysplasia. A significant number of ACs had normal morphology when cytomorphology and FISH were compared. Two patients with OPLs developed squamous cell carcinoma; these patients had a significant proportion of ACs. We suggest that the combined morphological and cytogenetic analysis of cells collected by a non-invasive brush sampling can enhance early detection of potentially malignant cells.

P94**Immunohistochemical study of the Cyclin D1 and Ki-67 expression in oral premalignant lesions**

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Purpose: The proliferative indices Cyclin-D1 and Ki-67 may correlate with the malignant potential of oral precancerous lesions. This study aims to investigate the immunohistochemical expression of Cyclin-D1 and Ki-67 in oral normal mucosa, hyperplasia and dysplasia.

Methods: This retrospective cross-sectional survey included 36 tissue specimens: epithelial hyperplasia (7), mild dysplasia (7), moderate dysplasia (14), and severe dysplasia (8); five control cases of normal oral mucosa were also included. Serial sections were immunohistochemically stained with Cyclin-D1 and Ki-67 antibodies and a semiquantitative measurement of the positive cells was carried out. The extension of positive cells in different levels of the epithelium was also evaluated.

Results: Cyclin D1 and Ki-67 were expressed only in a limited number of parabasal cells of the normal oral epithelium. The Ki-67 immunoreexpression in the parabasal epithelial layer was significantly higher in the dysplastic lesions compared to the hyperplastic ones ($P = 0.05$) and that could differentiate hyperplasias from dysplasias ($OR = 1.423-83.031$, $CI=95\%$, $P = 0.021$). Additionally, the dysplastic lesions demonstrated a significant extension of the cyclin-D1 and Ki-67 expression towards the upper epithelial layers ($P = 0.05$).

Conclusions: The increased Ki-67 immunoreexpression in the parabasal epithelial cells and the Ki-67 and Cyclin D1 extension towards higher epithelial layers in oral dysplasia compared to hyperplasia indicates a progressively increased proliferative capacity of oral premalignancy, of potential prognostic value.

Relevance: The correlation between cell proliferations indices and degree of dysplastic changes in oral premalignant lesions may serve for the identification of new, more accurate prognostic biomarkers of malignant transformation in oral precancer.

P95**Consecutive extractions in a group of patients taking parenteral bisphosphonates**

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Purpose: The purpose of this study is to describe the occurrence of osteonecrotic lesions due to dental extraction in patients taking intravenous or intramuscular bisphosphonate.

Methods: This case series included 17 consecutive patients who underwent 21 extractions. All patients had been previously treated for oncologic problems (multiple myeloma, bone metastases from breast carcinoma) and needed extractions. When possible they underwent scaling in the three weeks before the intervention. They were prescribed mouthrinse with 0.2% chlorhexidine every 12 h for 2 weeks before and after the intervention. They were also prescribed antibiotics like Amoxicillin and Cefixima, for at least two days before and for at least two weeks after the extraction (minimum 2gr a day), as well as 1% chlorhexidine gel to be applied on the surgical wound for at least two weeks. The extractions were performed minimizing tissue trauma, in particular osseous trauma and trying to obtain a primary wound closure to prevent oral contaminants from infecting the osseous tissue undergoing healing. Controls were performed one week, 15 days, 1, 2, 3, 6 and 12 months after the intervention.

Results: There were no cases of osteonecrosis with an average follow up of 1–23 months, not even in patients that had osteonecrotics lesions in other sites.

Conclusions and relevance: Although, encouraging the results of this case series must be considered with caution, because of the small number of patient and the methodological limits. To verify the validity of this protocol randomized clinical trial are necessary.

P96**Multiple myeloma with oral manifestations: report of seven cases**

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Myeloma is a hemorrhagic malignancy characterized by abnormal proliferation of plasma cells based in the bone marrow. It may be present as a solitary lesion (plasmacytoma), or involve multiple sites (multiple myeloma). The aim of our study was to analyze the oral and maxillofacial manifestations in patients with multiple myeloma.

Material and methods: We studied seven cases of multiple myeloma that we had seen in our Service because of an oral manifestation. We analyzed the age and sex of patients and the location of the oral lesion, as well as the characteristics and evolution.

Results: Five out of seven patients had a previous diagnosis of multiple myeloma and two consulted for an oral manifestation as the primary sign. All of them were women and the average age when they presented the oral lesion was 68.14 years old. The most frequent oral manifestation was amiloidosis (four cases). Two cases developed a maxilar swelling and one of them showed osteolytic lesion with 'punched out' radiographic appearance in the skull. Five out of seven patients are still alive.

Conclusion: Oral manifestations in the form of oral and maxillofacial lesions are common and may be the first manifestation of the disease. Amiloidosis associated with multiple myeloma is a relatively common finding. Other manifestations include swelling, non-related tooth pain, tooth mobility and paresthesia of the dental nerve. Dentists can be important in the early diagnosis of the disease.

P97

Oral malignant melanoma: expression and activation of the onco-gene Stat3

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Purpose: Stat3, a member of the signal transducer and activator of transcription (STAT) family, has been implicated in the oncogenesis and progression of a number of human cancers. The aim of this study was to assess the role of Stat3 in oral malignant melanoma, a rare malignancy with a very poor prognosis.

Patients and methods: The demographic, clinical and histopathologic data of six cases of primary oral malignant melanoma diagnosed at the School of Dentistry, University of Athens, were reviewed. The protein levels of total Stat3 and the phosphorylated and activated form of the molecule (pStat3) were assessed immunohistochemically.

Results: Our patients (five females, one male) had a mean age of 69.6 years (range: 53–86). The most common sites were the maxilla (three cases) and the palate (two cases). Histologically, all tumours showed an invasive growth pattern exhibiting a variety of tumour cell types; one case was amelanotic. Immunohistochemical evaluation of total Stat3 revealed diffuse and strong cytoplasmic and nuclear expression in the majority of tumour cells of all cases. On the contrary, activated pStat3 showed mild nuclear expression in 5–40% of malignant melanocytes in all cases.

Conclusion: Oral malignant melanomas constitute a rare entity with a diverse histopathologic appearance. The expression and activation of Stat3 in oral malignant melanocytes suggests its possible role in the tumourigenesis of oral melanoma.

Relevance: The demonstration for the first time that Stat3 is expressed and activated in oral malignant melanoma may contribute to the elucidation of its pathogenesis and guide future therapeutic interventions.

P98

Interdisciplinary teamwork in patients with craniomandibular disorders

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This presentation will give a summary of the clinical experiences gained the last 20 years of treating CMD patients. The therapeutic concepts are based on scientific research which was carried out during that period of time in an interdisciplinary team. The first steps in a diagnostic approach of craniomandibular disorders are the questionnaire and the clinical examination. Instrumental diagnosis provides a deeper understanding of joint mechanics and can be important for therapy. During the presentation the diagnostic steps will be explained by evaluating different patient cases. Conservative therapy encompasses splint therapy as well as myofunctional therapy, speech therapy, physiotherapy, acupuncture and psychiatric intervention. The relationships between CMD and postural problems will be clearly emphasized in the lecture. Interdisciplinary therapeutic concepts will be presented.

P99

Oral complications of allogeneic haemopoietic stem cell transplant (HSCT): a review of the literature and case report

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Objectives: To assess the extent and range of oral complications of allogeneic HSCT and the associated risk factors.

Background: Allogeneic HSCT, along with the associated immunosuppression, leads to a number of oral complications, highlighted in the Case Report. The most frequent debilitating oral complication is chronic Graft-versus-Host Disease (cGVHD), a multisystem, immune-mediated disorder which persists or presents beyond the first 100days post-transplantation. The 5-year survival rate of cGVHD is low, at 40%. However, survivors of cGVHD face significant, ongoing morbidity with a marked reduction in quality of life. This will be the focus of this study; particularly given oral involvement is seen in up to 70% of patients with cGVHD. A wide spectrum of oral lesions has been reported including, lichen-type mucosal lesions, microstomia with the associated fibrosis, and salivary hypofunction. Survivors also have an increased risk of secondary malignancies, critically, oral squamous cell carcinoma.

Methods: Living recipients of allogeneic HSCT in the last 5-years will be invited to participate. Standardised forms will be utilised to review patient's records and in a face-to-face interview to gain information relating to transplantation and associated complications, followed by a standardised clinical examination, limited to the soft and hard tissues of the oral cavity and immediate extra-oral structures. Data collected will focus on soft tissue pathology, stimulated salivary flow and the extent of dental decay with a view to determine the prevalence and severity of oral complications related to

allogeneic HSCT. Information collected will also be utilised to develop material for patient's information and education.

P100

Cell proliferation associated with actions of the substance P/NK-1 receptor complex in keratocystic odontogenic tumours

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Purpose: To study the expression of substance P (SP) and its NK-1 receptor (NK-1R) in keratocystic odontogenic tumours (KOTs) to determine whether the intrinsic growth potential of these lesions is related to a cell proliferation stimulus mediated by the SP/NK-1R complex.

Methods: A total of sixty-five tissue samples of solitary non-recurrent KOTs, solitary recurrent KOTs, KOTs associated with nevroid basal cell carcinoma syndrome (NBCCS) and KOTs with chondroid wall were studied by immunohistochemistry, using anti-SP, anti-NK-1R and anti-Ki-67 monoclonal antibodies. Expression of these markers was analyzed in infiltrating lymphocytes, in fibrous capsule, and in membrane, cytoplasm and nucleus of epithelial cells.

Results: SP expression in infiltrating lymphocytes was significantly associated with SP in fibrous capsule and epithelial cells. KOTs associated with NBCCS showed a significantly higher SP expression in all tissues and cell compartments compared with other KOT types. Finally, SP expression in epithelial cells was associated with positive Ki-67 expression in dysplastic epithelium.

Conclusions and Relevance: This first published report on SP and NK-1R expression in KOTs demonstrates that actions of the SP/NK-1R complex may constitute a mechanism to stimulate epithelial cell proliferation in KOT. This pathway may be of special relevance in the multiple KOTs associated with NBCCS.

P101

Long-term follow-up of the oral precancerous with epithelial dysplasia

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Aim: To document the long term follow-up of the oral precancerous lesions with epithelial dysplasia.

Methods: From 1991 to 2007 we recorded a data set for all cases of oral dysplasia, including the gender, age, site of lesion, clinical features, exposure to risk factors and the histological dysplasia score. The patient was considered completely recovered (CR) if after therapy clinical disappearance and histological normality was detected. For recurrence (RP) after therapy clinical lesions were categorised into oncological evolution (OE) if the patient developed squamous cell carcinoma at the site of previously documented dysplasia.

Results: The sample consisted of 207 patients (100 females medium age 63.5 year and 107 males medium age 64.1 year). The dysplasia score of was OIN1 in 135 cases, OIN2 in 50 and OIN3 in 22 cases. An increasing grade of the dysplasia was associated with non homogeneous lesions (speckled leukoplakias). In 61.5% of the cases dysplasia appeared in patients without a previous history of precancerous lesions. In 11.5% of the cases a carcinoma developed. Such event did not correlate with gender, dysplasia score, site, clinical aspect, exposure to the risk factors and therapy. There is no predictable correlation between clinical and histological parameter and OE. In 38.9 % of the cases a RP has been observed and this statistically correlates with the exposure to risk factors (OR 2.43 95%CI 0.99–5, 93 P < 0.05).

P102

Use of laser biostimulation in the treatment of erosive LPO: clinical trial

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Purpose: The aim of the present work is to verify if the laser biostimulation can be a valid alternative to pharmacologic treatment in the oral lesions of erosive lichen planus.

Material and methods: The patients, collected from the Department Biomedical Sciences and Human Oncology, Oral Medicine Section, University of Turin, present a clinical history of oral lichen planus with recurrent erosions. Some patients were not responsive to topical steroid treatment and all of them had an istopathologic confirmed OLP. For every patient is carried out the iconographic documentation of the initial oral aspect and is registered the discomfort level through VAS investigation (pain, nutrition

difficulties). The laser biostimulation sessions are executed every other day with a diodes laser of IV class, 650 nm e 810 nm, 4 J/cm², CW, not in contact, until complete regression of the erosive lesions.

Results: All the patients, since the first biostimulating session, have been registering an improvement of the oral condition with significant decrease of the pain. At the end of the treatment the erosions were completely healed without any pharmacologic support. The number of the sessions was different relating to clinical presentation and individual response.

Conclusions: The outcomes obtained, the total absence of a pharmacologic treatment and the control of pain seem to support the laser biostimulation as a valid alternative in the erosive lichen therapy, worthy for further investigations.

P103

Human papillomaviruses in lesions of the oral mucosa

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Purpose: Human papillomavirus (HPV) are considered to initiate epithelial proliferation and contribute in the development of benign, premalignant and malignant oral lesions. The purpose of this study was to investigate the frequency of HPV in morphologically different oral lesions.

Methods: The study included a total of 120 subjects, of which 26 with erosive-ulcerous lesions and 94 with different proliferative oral lesions including keratotic, hyperplastic and warty lesions. Oral cytological samples were collected from each lesion, and HPV DNA was detected by polymerase chain reaction (PCR) as previously described (Grce M et al, Anticancer Res 21:579; 2001).

Results: The presence of HPV DNA was detected in 28 of 120 (23.3%) oral samples, of which 5 of 26 (19.2%) and 23 of 94 (24.5%) in patients with erosive-ulcerous lesions and proliferative lesions, respectively.

Conclusion: HPV is probably associated with the development of hyperkeratotic and hyperplastic oral lesions. Additionally, damaged oral mucosa increases the risk of HPV infection.

Relevance: HPV DNA positive oral lesions need to be continuously followed-up and if necessary treated to avoid malignant outcome.

P104

Management of burning mouth syndrome with oral clonazepam – an open study

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The management of Burning Mouth Syndrome (BMS) is still controversial even if there have been evidence of the effectiveness of anticonvulsant drugs (Gremau, 2004). 52 consecutive patients: 46 female and 6 male have been diagnosed for BMS in our department during the last 45 months. The diagnosis of BMS was based on the following symptoms: introral burning sensation with no medical or odontological causes, grossly normal oral mucosa, absence of associated neurological disorder, inconstant association with subjective mouth dryness and/or altered taste. 14 patients refused the treatment or could not be included in the sample. All the included patients (33 female and 5 male) had to fill out an HAD scale at inclusion and at the end of the follow up. They fill out also a pain agenda for one month before to start and during all treatment noting VAS twice a day at 8 am and pm. Treatment started with 8 drops of 0.1mg of oral clonazepam (0.8 mg) once a day at bedtime for one month. 3 (0.3 mg) to 5 (0.5 mg) additional drops were added according to mean VAS at patient recall after one month, shared out during the day. Patients were followed every 2 months for 8 months. Mean daily dose was 1.1 mg clonazepam (mean: 11 drops, 8 to 16). Mean VAS decrease was -2.83 after 8 months. After 8 months, 16 patients on 38 had VAS < 3. Mean HAD scale values dropped from A/D: 10/13 to A/D: 8/7 (P < 0.001). The results allow confirming previous ones about the effectiveness of clonazepam in BMS even if a RCT versus placebo would be necessary to confirm it.

P105

Histological differentiation of lesions clinically diagnosed as oral lichen planus

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Oral lichen planus (OLP) is a frequent chronic mucocutaneous process that shows different clinical and histopathological aspects. Being its malignant transformation a controversial issue.

Purpose: To analyze the histopathological data in lesions clinically compatible with OLP and to differentiate its subtypes.

Methods: 60 consecutive biopsies of lesions clinically compatible with OLP (38 women and 22 men) have been studied. We have applied a previously designed protocol based on van der Meij et al (2003) and Thornhill et al (2006). Descriptive statistical analyses were carried out with the results.

Results: Thirty three (55%) showed only white lesions (Group C1) and 27 (45%) presented also erosive-ulcerative lesions (Group C2). The biopsies of C2 group had a deeper inflammatory infiltrate (P = 0.003), a greater percentage of lymphocytes (P = 0.036) and of plasma cells (P = 0.003). 32 (53.3%) of the lesions were histopathologically classified as 'typical' and 28 (46.7%) as 'compatible'. No significant clinicopathological differences were recognized between these groups.

Conclusion: It is difficult to make histological differentiation in subtypes in lesions clinically compatible with OLP.

Relevance: It is important to conduct in-depth studies of this pathology, due to the difficulty found when trying to differentiate OLP from other similar processes and considering the prognostic aspects that may be presented. *Grant supports: Carlos III Health Institute – FIS (PI051400) and Department of Education, Universities and Research, Government of the Basque Country (IT-192-07).

P106

Comparison of time staff required in problem-based learning (PBL) vs. master classes in one subject of a fifth year odontology course: PBL requires a reorganization of human resources that will result in better academic progress by the student

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Purpose: Our aim was to evaluate differences in the time staff dedicate in two different teaching-learning models: using PBL vs. master classes with students in the fifth year of their odontology course.

Methods: We have divided the course in two different groups; one of them followed a PBL system and the other a master class's method. We have analyzed the academic results of both groups and the time staff dedicate to preparing: classes, tutorials and cases for PBL.

Results: The time devoted by teaching staff was much higher in the PBL group (P < 0.05). Students participating in PBL obtained better results than those attending master classes (P < 0.05). The time devoted by the two groups of students was similar, but distribution among tasks was very different.

Conclusions: The increase in time spent with students by the teaching staff; together with the different distribution of time dedicated to each task by the student, requires a reorganization of human resources and materials within the university institutions; this reorganization will result, as we have demonstrated, in better academic progress by the student.

Relevance: It is the first time that, the time spent by staff in PBL has been compared with master classes system. We have demonstrated that implementing PBL required a new organization of human resources.

P107

Genital involvement with clinical and histological features of oral lichen planus: report of three cases

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Lichen planus is one of the most common idiopathic immune disorders, affecting several body sites (oral and genital mucosa, skin, scalp and nail), showing a wide range of clinical variants and symptoms, found in 0.5–2.3% of the general population. Herein we report three women with reticular and/or erosive lichen planus of the oral cavity associated with involvement of the genital mucosa. Women without a history of systemic disease visited our clinic with painful lesions on oral mucosa along with approximately 10 months' duration. Any member of patient's family did not show any evidence of a similar condition. When queried about genital symptoms, patients reported periodic genital itch and burning sensation for which they had never requested medical advice; as an approach. Patients' examination of the oral cavity revealed erosions and reticular lesions on the right and left buccal mucosa with plaque lesions on the dorsum of the tongue and a diffuse desquamative gingivitis. The clinical diagnosis which was oro-genital lichen planus was confirmed with incisional biopsy in both oral and genital mucosa under local anesthesia. Treatment with topical steroids was started and after 3 months lesions improved and produced re-epithelialization of erosions on the buccal mucosa and vulva lesion. Healing was satisfactory in both sites. We present these cases to highlight the need for careful examination of the genital mucosa of patients with oral lichen planus. Even in the absence of genital signs, long-term surveillance of the same patients should be planned in order to prevent multi-site involvement and possible malignant transformation.

P108

The effect of anticorrosive chemicals on oral health

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The purpose of this investigation was to examine the oral health status in workers of the Chemistry Department, Shipyard Rijeka. 60 workers participated, mean age 40 ± 9.9 years, working in direct contact with chemicals such as organic solvents and dyes, welding gases and silicon dioxide. Control group consisted of 90 persons, not working with anticorrosives. Data on general and oral health was obtained through clinical examination and questionnaire. Non-parametric Mann-Whitney U-test was performed for comparison of these independent groups. The results showed that 26.7 % of the participants work in an enclosed environment in the presence of chemicals. There were 58% smokers in the tested and 50% in the control group, which was not significant. In both groups similar frequencies of allergy, asthma, headaches or other chronic diseases were found. The shipyard group had significantly higher plaque index ($P < 0.05$), more gingivitis ($P > 0.02$), and more periodontitis ($P < 0.02$) when compared with the control group. Cheilitis and lips dryness were significantly more frequent in the shipyard group ($P < 0.002$). Petechial redness, covered tongue and pasty hard palate were frequently observed in the tested group, and in certain cases rash and redness of the skin were also observed. We can conclude that specific environment with anticorrosive chemicals has a negative influence on the oral health, and adequate protective measures and oral health control is needed.

P109

Audit on epidemiological, diagnostic and etiological data in 395 patients with xerostomia

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Purpose: The aim was to assess xerostomia and salivary hypofunction in the pool of our patients, to classify epidemiological data and etiological factors of dry mouth, to assess adherence to diagnostic protocols for Sjogren's syndrome (SS), with major purpose to establish possible need for diagnostic improvement.

Material and methods: A retrospective study was conducted regarding clinical and diagnostic parameters of patients seen for dry mouth during the period January 2000–December 2004 at our Department. Records of 6606 patients, of which 395 satisfied the inclusion criteria for further investigation, were searched. Database was formed comprising epidemiological, clinical, sialometric, immunological, scintigraphic, ultrasonographic, pathohistologic and drug intake data. Descriptive statistics were used.

Results: Real salivary hypofunction was seen in 88% of patients complaining of dry mouth. The most common identifiable cause of xerostomia was pharmacotherapy. SS, in accordance with diagnostic protocols, was diagnosed in only 6.7% patients with xerostomia. In another 8% of patients SS was strongly suspected, but strict adherence to diagnostic protocol was absent. Idiopathic xerostomia was encountered in 36% of cases.

Conclusions: Our data showed present trends and our diagnostic insufficiencies. As delaying the diagnosis of SS carries the risk for lymphoma, the most important local relevance is that additionally up to 8% of dry mouth could be, but is presently not, attributable to SS. Diagnosis can be improved in two major aspects: strict adherence to labial gland biopsy, and application of more sensitive and specific tests for dry eye assessment (other than Tear Break-up Time and Schirmer-I tests).

P110

Determination of genomic instability of patients with oral lichen planus

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Objective: The purpose of this study was to determine the frequency of micronuclei (MN) and sister chromatid exchange (SCE) in reticular and/or erosive oral lichen planus (OLP) patients. Oral lichen planus (OLP) is a chronic inflammatory disease which is one of the most common oral mucosal disease with different clinical presentations. Malignant transformation of OLP has been regularly reported in the literature. Many studies have suggested that OLP may be a premalignant condition. The association between OLP and oral squamous cell carcinoma (OSCC) is still unknown. Sister chromatid exchange (SCE) analysis is a sophisticated cytomolecular technique and has applications in studies in which genotoxicity and genetic instability are evaluated. High frequency of SCE is regarded as a biomarker of early mutagenic effect suggesting increased risk of cancer. Evaluation of micronucleus frequency was developed by Countryman and Heddle in 1976 especially to investigate X-ray induced genotoxicity. Micronuclei (MN) may arise from partially or totally mitotic loss of chromosomes.

Materials and methods: Twenty-two patients with reticular and/or erosive oral lichen planus (OLP) and twenty healthy individuals participated in this study. Age, sex,

smoking habits, type and localization of lichen planus lesion, periodontal status, salivary flow rate, buffering capacity, SCE and MN test in peripheral blood were recorded.

Results: The median of MN and SCE in OLP patients was found significantly elevated compared to that in normal individuals. ($P = 0.0001$, $z = 3.946$; $P = 0.019$, $z = 2.346$). There were no statistically significant differences in the MN frequency and SCE between the reticular and erosive types of OLP.

Conclusion: This study revealed an increase in micronuclei and sister chromatid exchange frequencies in OLP patients. The results indicate genomic instability in peripheral blood lymphocytes of oral lichen planus patients compared with the healthy individuals.

P111

Is Ankaferd Blood Stopper® an alternative coagulation method for hemophilic patients?

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Ankaferd blood stopper is a new, standard, sterile, stable and medical herbal extract product. It is produced for minor and major stoppage of bleeding. The product is a hemostasis regulator that is used for spontaneous or post-operative bleeding such as skin wound, tooth extraction and other oral surgical procedures. In this study, our goal is to determine the effectiveness of Ankaferd Blood Stopper after extraction in hemophilic patients. This study includes 30 patients divided in two groups each containing 15 patients. We performed replacement therapy pre- and post-operatively in the first group. For the second group, replacement therapy before extraction and Ankaferd Blood Stopper post extraction was applied. An Oral-health-related Quality of Life (OHQoL) questionnaire form carried out by each patient. Depending on the results of our study, we suggest that Ankaferd Blood Stopper is an alternative way to minimize bleeding after tooth extraction in hemophilic patients.

P112

Aggressive multifocal oral verrucous lesions progressing to oral cancer: PVL or lichen planus?

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Proliferative verrucous leukoplakia (PVL) is a form of oral leukoplakia characterized by progressive changes of the clinicopathological pattern and high potential to malignization. Lichen planus (LP) may present clinical aspects similar to leukoplakia. The diagnosis of these diseases is controversial by the lack of well-established criteria to diagnose. A 56 years old male was referred to the Oral Medicine Service – F.O Ar UNESP complaining of a white oral lesion, previously submitted to a biopsy and positive for LP. The patient was systemically healthy and denied tobacco or alcohol consumption. The clinical examination showed a verrucous white plaque on the right side of buccal mucosa, upper and lower gingiva. Another verrucous white plaque was seen on the soft palate. At the left side there was a red lesion with peripheral white stripes. Biopsies were taken bilaterally. The histological pattern suggested LP. The patient has been followed for the past 56 months. Eventually he complained of burning and itching. He lost some teeth as a consequence of the lesion spreading. Several biopsies were taken during the follow up with three distinct diagnoses as LP, oral lichenoid lesion (OLL) and verrucous hyperplasia (VH) with dysplasia. The last biopsy revealed a gingival squamous cell carcinoma infiltrating into the periodontal ligament around the tooth no. 14. The patient was referred to an Oncologist and undergoes a partial maxilectomy. The histopathological diagnosis was verrucous carcinoma. Concluding, the long period of follow up and the retrospective evaluation showed an aggressive, multifocal VH with lichenoid inflammatory infiltrate compatible with PVL.

P113

Systemic and oral health conditions in three elderly populations from Brazil

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Purpose: The number of Brazilian elderly may increase 15 times until 2025. Studies evaluating health are necessary to establish health programs to Brazilian elderly. Our

aim was to investigate the systemic and oral health status of three Brazilian elderly populations.

Methods: Files from 240 patients from Araraquara, SP, Brazil, were characterized as three elderly groups: (i) Institutionalized, (ii) Non-Institutionalized and (iii) Patient from the Oral Medicine Service. Data were processed and evaluated by an EPI-INFO software (<http://www.cdc.gov/epiinfo>).

Results: The white women were prevalent and average age was similar in all groups. The majority of the elderly presented one or more systemic diseases distributed as follow; group A 87.5%, B 98.8% and C 100%. Cardiovascular, neurological and urogenital diseases were the commonest. The prevalence of antihypertensive use in the three groups were identified besides analgesics/anti-inflammatory in groups A and C. Prosthesis wearers were identified in 69% from group A and 87.5% from groups B and C. Oral lesions in the groups A, B and C were 75%, 31% and 98%. The most common oral diseases were candidose, tongue diseases (varices and atrophic glossitis) in Groups A and C and xerostomia in Group C.

Conclusions: There was a high prevalence of systemic diseases and oral lesions in the three elderly population's. These were apparently related to age, systemic diseases, and use of medication as well as wearing unfitted dentures

Relevance: We believe that a team of health professional's is required to joint actions to supply the needs of the elderly.

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P114

Absence of *Helicobacter pylori* in oral candidiasis

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Purpose: Candidiasis is the most prevalent yeast infection in the oral cavity caused by fungus genus *Candida*. Since interactions between oral *Candida* species and bacterium *Helicobacter pylori* (H. pylori) on oral mucosa are not known, the aim of this study was to examine whether H. pylori could be found on oral mucosa infected with *Candida* species in patients suffering from H. pylori gastric infection and those without proven H. pylori gastric infection.

Methods: Of total 62 consented patients (mean age 53 years) 32 have microbiologically established diagnosis of oral candidiasis and 30 were controls. For detection of *Candida* spp. on oral mucosa, swabs were taken from all patients and cultivated on Sabouraud agar plates. For detection of H. pylori cytological specimens were taken from apparently healthy mucosa of 30 volunteers and 32 patients infected with *Candida* spp. and proceeded for PCR. Medical history and laboratory tests revealed gastric H. pylori infection in 8 out of 32 patients with oral candidiasis and in 4 out of 30 controls.

Results: PCR analysis showed that H. pylori were not detected on oral mucosa in neither of any patients infected with oral *Candida* infection nor in control subjects, despite of whether they were suffering or not from H. pylori gastric infection.

Conclusion: Absence of H. pylori on oral mucosa infected with *Candida* spp. suggests that oral candidiasis could inhibit colonization of this bacterium.

Relevance: Further studies are necessary to clarify the role of *Candida* on colonization of H. pylori on oral mucosa.

P115

IgA mediated pemphigus precipitated by glibenclamide – a case report

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Introduction: Pemphigus is autoimmune disease characterized by epithelial blistering affecting cutaneous and/or mucosal surfaces. Some cases of pemphigus can be drug induced. Drugs most commonly associated with pemphigus are: penicillamine, phenobarbital, ibuprofen, piroxicam, cilazapril and glibenclamide. We present a case of patient who developed oral lesions of IgA mediated pemphigus due to glibenclamide therapy. Chief complaint: 80-year-old patient came to our Department complaining of gingival soreness which lasted for 6 months.

Medical history: His medical history revealed hypertension and diabetes mellitus for which he was taking amlodipine and glibenclamide. The patient stopped smoking 30 years ago.

Oral disease history: Clinical examination revealed gingival erosions in his lower left molar area and intense redness in lower frontal gingival. Clinical presentation was consistent with desquamative gingivitis.

Diagnostic procedures: Gingival biopsy was performed for histology and direct immunofluorescence. Histology was not specific, revealing mixed inflammatory infiltrate without acantholysis. Direct immunofluorescence revealed intercellular deposits of IgA. The finding was consistent with the diagnosis of Ig A mediated pemphigus.

Treatment: Patient was prescribed betamethasone propionate in orabase and chlorhexidine solution three times daily for his lesions. New antidiabetic drug (metformin) was introduced. His lesions slowly healed within 2 months. Three months later at first recall, patient was asymptomatic.

P116

Langerhans cells and T cells in oral leukoplakias, squamous cell carcinomas and lichen planus – a retrospective study

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Purpose: Activation of the immune system is crucial in host response to tumour cells. The aim of this retrospective study was to investigate presence and distribution of Langerhans cells (LCs) and T cells in oral leukoplakias, squamous cell carcinoma (SCA) and oral lichen planus (OLP).

Methods: Tissue specimens from patients with histopathological diagnosis of benign hyperkeratosis (BHK; n = 8), hyperkeratosis with dysplasia (HD; n = 14), OLP (n = 9) or oral SCA (n = 13) were examined. Immunohistochemistry was performed using monoclonal antibodies against CD1a+ (LCs), CD3+ T cells and Ki67+ cells. Digitalized images of sections were obtained and quantitative analysis of number of positive cells per mm² were done. Statistical analysis: Kruskal-Wallis test.

Results: HD compared to BHK: Epithelium: LCs: median values: 377/164; P > 0.05. T cells: 222/32; P ≤ 0.05. Ki67+ cells: 1543/1664; P > 0.05. Connective tissue: LCs: 229/93; P ≤ 0.05. T cells: 1856/514; P ≤ 0.05. Ki67+ cells: 365/143; P > 0.05. SCA compared to epithelium of HD: LCs: 616/377; P > 0.05. T cells: 814/222; P ≤ 0.01. Ki67+ cells: 2684/1543; P ≤ 0.001. SCA compared to epithelium of OLP: LCs: 616/753; P > 0.05. T cells: 814/416; P ≤ 0.05. Ki67+ cells: 2684/1038; P ≤ 0.001.

Conclusions: LCs and T cells are recruited to oral tissue compartments most likely in response to cell dysplasia and inflammation. Further investigations are presently undertaken.

Relevance: Investigation of Langerhans cells and T cells in premalignant oral mucosal lesions can result in new knowledge about immune activation and malignant transformation.

P117

Periodontal medicine: rational role of the matrix metalloproteinases serum in the association between cardiovascular and periodontal diseases

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Periodontal and cardiovascular diseases (CVD) are, both, chronic and multifactor diseases characterized by connective tissue degradation, especially, the collagen breakdown, caused primarily by enzymes as the matrix metalloproteinase (MMPs). In periodontitis, these enzymes degrade the periodontal connective tissue leading to tooth loss, similarly, in atherosclerosis, these enzymes degrade the fibrous cap, that may lead to a myocardial infarction. The aim of the present study is (i) to investigate serum concentrations of tissue inhibitors of matrix metalloproteinases TIMP-1, TIMP-2, TIMP-4, and matrix of metalloproteinases MMP-3, MMP-8 in patients with history of CVD and (ii) to determine if serum concentrations of these enzymes were correlate with of TNF alpha, CRP serum levels and periodontal status. We studied 19 patients with history of cardiovascular event (group T) and 28 controls (group K). Periodontal examination, by means of Plaque Index (PI) Bleeding on Probing (BoP) and pocket depth (PD) in six sites for tooth, was performed by means periodontal Florida probe. PD is considered to be a potential systemic exposure when ≥15% of the sites examined had a PD ≥4 mm. Because PD represents a better marker of systemic inflammatory burden, cases status was assigned according to PD. The serum concentrations of TIMP-1, TIMP-2, TIMP-4, MMP-3, MMP-8, TNF and CRP were measured with commercially available enzyme-linked immunosorbent assay (ELISA) kits. In our study, the mean serum levels of TIMP-1, and MMP-8, resulted lower in K group than T group, as well as the CRP and TNF alpha values; while the mean serum levels of TIMP-2, TIMP-4 and MMP-3 were higher in K group. The mean level of PD resulted lower in T group. Statistical analysis reveal significant differences only in the T group, in the association between CRP and TIMP-2 (P-value 0.04). Not statistically significant differences in serum TIMP-1, TIMP-2, TIMP-4, MMP-3, MMP-8, TNF and CRP

Group	N°	CRP mg l ⁻¹	TNFα pg ml ⁻¹	MMP-3 ng ml ⁻¹	MMP-8 ng ml ⁻¹	TIMP-1 ng ml ⁻¹	TIMP-2 ng ml ⁻¹	TIMP-4 pg ml ⁻¹	PD
K	28	6.19 ± 8.56	3.37 ± 2.34	20.26 ± 25.06	24.08 ± 18.25	204.61 ± 55.01	85.18 ± 21.88	1971.14 ± 943.86	2.23 ± 0.64
T	19	8.80 ± 11.85	11.97 ± 32.65	16.34 ± 9.23	32.64 ± 25.13	232.16 ± 107.13	83.21 ± 26.64	1934.65 ± 1672.31	2.17 ± 0.48

Table 1 for P117: Means ± SD in control and test groups

concentrations between patients with history of CVD and the control group as well as with the periodontal status.

P118

HPV DNA and expression of cyclin-dependent kinase inhibitors p27^{Kip1} in epithelial oral carcinogenesis: a relationship?

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Purpose: High risk (HR) Human Papillomavirus (HPV) seems to be involved in the aetiopathogenesis of a subset of oral squamous cell carcinomas (OSCC), leading to consider HPV-positive OSCC as a distinct clinicopathological entity with different outcome. Inactivation or down-regulation of the cyclin-dependent kinase inhibitors p27^{Kip1}, frequently mediated by S-phase kinase-associated protein 2 (Skp2), has been intensely investigated in several human squamous cell carcinoma as novel marker of disease aggressiveness. In this context, the aim of the present study was to evaluate the expression of p27^{Kip1} and Spk 2 in HPV-positive and HPV-negative OSCC, conditionally to age, gender and other risk factors (smoke and alcohol consumption). **Methods:** Sixty-three samples of OSCC were tested for HPV infection by nested PCR (MY09/MY11 and GP5+/GP6+ primers), grouped in HPV-positive (n:24) and HPV-negative (n:39) cases and finally examined by immunohistochemistry for p27^{Kip1} and Spk2 expression. Data were analyzed by univariate statistics (χ^2) with P-value ≤0.05 considered statistically significant.

Results: We found a significant correlation between high-moderate p27^{Kip1} levels (17/24; 70.8%) and HPV infection (P:0.007), while low p27^{Kip1} expression was observed in 64.1% (25/39) of HPV-negative OSCC. Conversely, with respect to Spk2 expression and other variables considered, any significant statistically difference between two sub-groups has been detected (P > 0.2).

Conclusion: Although on a small sample size, our data suggest that p27^{Kip1} could be de-regulated in HPV-negative OSCC and allowed us to hypothesize a different cell cycle pattern with respect to HPV-positive tumours, indicating that they should be considered to be distinct cancers.

P119

Recurrent aphthous stomatitis: analysis of some predisposing factors in a case-control study

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Purpose: To evaluate the association among age, sex, smoking, family history and haematologic abnormalities with recurrent aphthous stomatitis (RAS) occurrence.

Methods: Twenty-two patients with diagnosis of RAS and 29 healthy subjects (matched for age and gender) without RAS history were included. All patients completed a questionnaire to assess age, sex, smoking and family history. Family history was considered positive when RAS was present in at least a first-degree relative. Haematological investigations were carried out consisting in a full blood count and determination of folate, vitamin B12 serum levels, sideremia and ferritinemia.

Results: No significant statistical association was found for age, sex and smoking between RAS patients and controls (P > 0.05). Positive family history was found to be the most significant variables associated to RAS: 53% vs. 9% (P < 0.01) in test and control group, respectively. Low levels of sideremia were observed in 34.4% of the RAS patients vs. 6.9% of the controls (P = 0.01); while, low levels of ferritinemia were found in 40.6% of the test group and in none of the control subjects (P < 0.01). Vitamin B12 and folate deficiencies were observed in 15.6% and 18.7% of the RAS patients and in none of the controls. The conditional logistic regression selected family history as the only significant variable associated to RAS (P = 0.0137).

Conclusions: RAS has been confirmed as a multi-factorial disease. Family history, iron, folate and vitamin B12 deficiencies are among the most important predisposing factors to be taken into account.

P120

Efficacy of 5-FU topically applied on a buccal mucosal model resembling human tissue. A new chance for OSCC chemotherapy

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Introduction: 5-Fluorouracil (5-FU), used alone or combined with other drugs in treatment of oral squamous cell carcinoma, induces the death of neoplastic cells through apoptosis. Buccal drug delivery has been grown as an alternative to the most common parenteral and gastrointestinal routes.

Purpose: Main endpoints of this study are: (i) to verify transmucosal permeability of 5-FU throughout a representative model resembling human buccal epithelium, (ii) to assess the histo-morphological features after permeation test and (iii) to verify cytotoxic effect of 5-FU by TUNEL method.

Methods: The aptitude of buccal mucosa to absorb 5-FU was evaluated in vitro, using RHO specimens mounted in a Transwell diffusion cell system. After permeation test, mucosal specimens were stained with hematoxylin-eosin for histological evaluation. TUNEL method was used in order to identify apoptotic cell in situ.

Results: It was confirmed that 5-FU is entrapped in the mucosal membrane. Histological analysis showed that the contact of 5-FU solution for 3 h with the mucosal tissue induces apoptotic death of superficial epithelial cell layer. TUNEL methods was useful in order to clarify cytotoxic effect of 5-FU by labelling 'preapoptotic' cells.

Conclusion: In our in vitro experiments, 5-FU showed good penetration into the superficial layers of buccal mucosa, thus forming in situ a sort of drug 'reservoir' which slowly and regularly releases the drug, performing the required cytotoxic effect, as demonstrated by TUNEL method. 5-FU seems to be a suitable drug for local buccal delivery, for example loaded in adhesive tablets applied directly on neoplastic lesions.

P121

BRONJ – a Sicilian multidisciplinary task force for prevention and management: 'P.R.O.Ma.B.'

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Purpose: Bisphosphonate-associated osteonecrosis of the jaw (BRONJ) represents one of the most important emerging complications of bisphosphonates (BP) treatment, mainly by i.v. regimen (e.g. pamidronate or zoledronate), at long or medium term, for malignancy-associated hypercalcemia and prevention of bone fractures in patients with metastatic bone disease (breast or bladder cancer) or multiple myeloma. Recently, literature has also focused on the onset, although lower, in patients taking oral BF (e.g. Alendronate). Hence, it has been arisen in the scientific and medical communities the need to create and disseminate information, know-how and protocols among the several specialists involved in BRONJ.

Methods: In the western Sicily, it has been recently built-up a multidisciplinary task-force named P.R.O.Ma.B. (Prevenzione e Ricerca su Osteonecrosi dei MAScellari da Bifosfonati) by a team dealing with these issues, assuming and fitting protocols in the field of BRONJ. The P.R.O.Ma.B., represented and managed by Campisi and Musciotto, from 2006 carries out activities of I and II prevention of BRONJ as well as its treatment.

Results: To date, P.R.O.Ma.B. counts 34 cases of ONJ (24 W; 10 M) and five of these are patient in therapy with BP for osteoporosis.

Conclusions: ONJ is a relatively emergent disease: in fact, the prevention is the key of the management and it is likely that with appropriate physicians' and patients' information the number of cases will dramatically decrease. Meanwhile, appropriate and prompt medical or surgical treatments should be provided to stop the BRONJ progression. The recommendations of this task force can be consulted on the web-site www.sipmo.it.

P122**The prevalence of oral mucosal lesions in children from 1 to 13 years old**

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The purpose of this study was to evaluate the prevalence and distribution of oral lesions in children from 1 to 13 years old. A cross-sectional survey was carried out on total of 1041 Turkish children in two age groups: preschool children (0–6 years old) and school children (7–13 years old). The patients were also economically and socially classified and their medical history is also recorded. Examinations were performed and 277 of whom had a total of more than 30 different type of lesions. The fissured tongue (3, 4%) was the most frequent lesion, followed by traumatic lesions (3, 2%) and the cheek biting (2, 5%). The lesions were more prevalent in males (27, 8%) than females (25, 3%). Fissured tongue was detected in 35 children (equally distributed between genders) and 17, 1% of them had allergy in their medical anamnesis. There was lack of association of patient's economic status and prevalence of oral lesions. This is the first study in Turkey on oral lesions in this age group. There is a need for more good-quality epidemiological studies in this area.

P123**Diagnostic validity and therapeutic effect in patients with sialoendoscopic treatment for obstructive pathologies of the major salivary glands**

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Introduction: The obstructive sialoadenitis constitute the prevailing inflammatory pathology of the major salivary glands. The demonstration that is possible a residual grape's regeneration and new grapes making after the experimental atrophy induced by ductal ligatures constitute the theoretic base for the miniminvasive technique's development. The target of this study is to show the diagnostic validity and the therapeutic effect in patient underwent a sialoendoscopic treatment for obstructive pathologies.

Methods: At the time between March 2005–April 2008 in Naples's University (Maxillo-Facial Surgery) – SUN and Palermo's University (Oral Medicine and ORL) we submit to sialoendoscopic diagnostic and therapeutic treatment 130 patients with gland obstructive pathology not in acute stage. In the pre-operative value all the patients was submit to echographic and radiographic exam.

Results: In almost all the patients that were submit to sialoendoscopy (90%) we wake sure the cause of the obstruction and we formulate related demission diagnosis. The diagnostic sialoendoscopy was implementing with positive results in 117 and negative result (impracticability exam) in 13. The operative sialoendoscopy was implement in 90 patients with positive results in 80 patients; 50 of this with improvement of the syndrome and 30 of this with complete symptomatology's remission; 13 patients are show recidive in about 1–3 months and was submit to a second sialoendoscopy with positive results in 10.

Discussion: The results of this study show the effectiveness of the methodology in the diagnosis and therapy of the major salivary gland's disease correlates to ductal obstructions with a minimum exam's invasivity and with the possibility to act in systemic pathology. The accurate selection of the case examinee to the sialoendoscopy is a fundamental condition for the positive results of the treatment.

P124**Diagnostic value for salivary gland disorders in comparison to conventional ultrasonography**

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The purpose of this study is to evaluate the usefulness of endoscopy as a procedure for the diagnosis of major gland duct disorders. Endoscopy of major gland was performed in 123 patients with symptoms of obstructive sialoadenitis to identify the cause of obstruction. The endoscopic findings were then compared to those of diagnostic procedures such as conventional ultrasonography. Endoscopy demonstrated salivary gland calculus in 29 of 123 patients, which was revealed as strongly echogenic structures on ultrasonograms in 31(n°totali di casi con ecografia positiva per calcolosi) of 123 patients (in 17 of 35 patients no calculus was see with endoscopy, but the cause of obstruction was shown to a small secretion plug or secretion plaques); in eight patients no calculus was revealed on ultrasonograms but was see with endoscopy.

P125**Oral leukoplakia in smokers vs. non-smokers: a multicentre study**

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Purpose: Oral Leucoplakia (OL) is a very frequent pre-malignant disorder occurring in different sites of oral cavity independently of age and/or gender. Several studies have suggested that both the risk of developing lesions and the rates of their malignant transformation are higher in smoking related OL than in non-smoking related OL. In order to examine this assessment, the present multi-centre study investigated socio-demographical and clinical-pathologic aspects between smokers and non-smokers patients with OL.

Methods: A retrospective investigation was performed in three different Units of Oral Medicine and Surgery (Palermo, Naples and Bucharest): a total of 346 patients with histological diagnosis of OL were recruited among those consecutively visited between 2000 and 2007. On the basis of socio-demographical and clinical-pathologic records, for each patients were recorded: smoking status (non-smoker vs. current smoker), age, gender, dysplasia (present vs. absent) and lesion sites (lingual dorsum, lingual margin, lingual ventral, hard palate, soft palate, gum, floor, lip, trigone, and cheek). Data were analyzed by univariate analysis (OR, χ^2) with p value ≤ 0.05 considered statistically significant.

Results: Any statistically significant differences were found between smoker (n = 252) and non-smokers (n = 94) patients in relation to age, gender and dysplasia. With regard to lesion sites, only one localization [cheek (n = 117)] showed statistically significant differences between smokers (n = 98) and non-smokers patients (n = 19) (OR = 2.51, 95% CI 1.39–4.67, $\chi^2 = 0.001$).

Conclusions: These results suggest that the smoking status should not be considered a necessary risk factor for developing and malignant transformation of OL.

P126**The role of salivary magnesium and total proteins in HIV infected patients**

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Purpose: It is well known that HIV positive patients might suffer from various and numerous oral diseases. Saliva has a crucial role in the maintenance of oral health. Reported literature data clearly showed disturbances in organic and anorganic salivary composition in HIV infected patients. Ionic concentrations are thought to assist to some salivary proteins which are oral defence mechanisms. However, there are only few sialochemistry studies in HIV infected patients. Therefore, our aim was to evaluate salivary concentrations of magnesium and total proteins in the whole unstimulated saliva.

Methods: In our investigation we included 30 HIV positive patients (age range 26–68 years, mean 44.8 years) and 30 healthy controls (age range 24–79 years, mean 40.4 years). Magnesium concentrations were determined by atomic absorption spectrophotometry. Total proteins were determined by use of pyrogallol/molybdate method.

Results: There was no significant differences between HIV infected patients and controls in salivary total protein values. Significantly elevated salivary magnesium levels were found in the patient group when compared to the control group ($P < 0.001$).

Conclusion: Increase in salivary magnesium might implicate its more important role in local immunoreactions in HIV patients than previously thought. Comprehensive salivary analysis revealed an overall altered salivary composition in HIV-patients, indicating a compromised oral environment in these patients and suggesting salivary analysis as a new diagnostic tool for oral pathological manifestation of HIV – disease. Presenter: Sikora M, Department of Maxillo Facial Surgery, University Hospital Osijek, Croatia

P127**The association of methylenetetrahydrofolate reductase (MTHFR) gene polymorphism and oral squamous cell carcinoma**

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Methylenetetrahydrofolate reductase (MTHFR) has a crucial role in metabolism of folate, which acts in DNA metabolism particularly in synthesis of purine and thymidine

nucleotids, DNA repair mechanisms, DNA methylation process and cell division. Several studies on the MTHFR C677T polymorphism and cancer risk indicate that the T allele protects against cancer in folate-replete subjects but increases the risk under conditions of impaired folate status. This study was designed to investigate, in the Turkish population, the association of MTHFR C677T polymorphism and risk of oral squamous cell carcinoma (OSCC). Our study included 113 patients with OSCC (72 men, 39 women) and 340 healthy volunteers as controls (196 men, 144 women). The OSCC patients and controls had similar distributions of sex and age. MTHFR C677T genotypes were determined by polymerase chain reaction, restriction fragment length polymorphism techniques. No differences were observed in the distribution of MTHFR genotypes or allele frequencies in cases versus controls. The homozygous mutation (T/T) in the MTHFR gene was identified in 7.1% of OSCC patients versus 9.4% of controls. Our results indicated that in later stages of OSCC T allele frequency was lower than early stage OSCC (43.6% vs. 51.1%). Family history of cancer, smoking and alcohol use was not correlated with C677T C allele in patient group ($P > 0.05$). However, combination of smoking habit plus presence of C677 C allele seems to be a risk factor for severity of the disease since its found mostly on later stage patients ($P = 0.05$) and all of them had lymph node metastasis. The protective role of C677T allele may not be significant with respect to control group but still may give us clues on prognosis of the disease. Additional studies with larger sample sizes are needed to define the influence of MTHFR C677T genotyping on clinical outcomes in OSCC patients.

P128

Correlation of hepatitis C virus infection and oral lichen planus in Western Saxonia, Germany

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Purpose: Oral lichen planus (OLP) presents a major health problem globally. The disease affects in average 0, 1–4% of the population and inherits a risk of malignant transformation of 1% within 5 years. Aetiology of this chronic inflammatory condition remains unclear. Recently viruses have been linked to OLP. A high association (27–62%) for hepatitis C infection has been suggested (Lodi et al 2004). With our study we aim to assess this association in western Saxonia.

Methods: We included 140 patients (100♀, 40♂) with OLP and 51 patients (31♀, 20♂) with hepatitis C infection. OLP diagnosis was confirmed by histological and clinical criteria. Hepatitis C infection was identified via serological tests and in case of positive findings with western-blot and PCR for identification of virus antigen. In patients with hepatitis C infection clinical criteria were used for OLP screening.

Results: In our study population all participants suffering of OLP are HCV negative. None of the patients infected with hepatitis C virus showed signs or symptoms of OLP.

Conclusions: An association between OLP and hepatitis C infection can not be found for western Saxonia. Aetiological relations remain unknown.

Relevance: We conclude that virus-screening for all patients suffering of OLP will not contribute to treatment but inherits risk of psychological distress. On account of the limited number of participants an association between hepatitis C infection and OLP could not be investigated exhaustively. Further studies in Germany should be initiated.

P129

Evaluation of mucosal lesions with direct intravital endocytological microscopy

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Purpose: Early identification of oral premalignant lesions has a great potential to reduce mortality of oral carcinomas. Cytological and histopathological methods are well established, but lack of interobserver reliability. Additionally both methods are dependent on subjective criteria concerning choice of biopsy site.

Methods: The EndoCytoscope (Olympus Medical Systems) allows direct microscopy of the mucosa. Our prospective study was designed to evaluate mucosal lesions with the EndoCytoscope after staining with toluidine or methylene blue. 27 patients (16♂, 11♀) with benign, premalignant and malignant lesions were included. 36 biopsies have been performed guided by endocytology and clinical aspects. Endocytological criterias included characteristics of keratinocyte nuclei, presence of pseudomycel and small nuclei. Histopathology served as control.

Results: Toluidine blue 1% was the superior staining method to visualize nuclei in oral mucosa. Type of keratinisation could reliably be identified. Correlation between histological and endocytological diagnosis was calculated. Candidiasis, a common

cause of inflammation, can be identified (correlation 100%, $n = 6$), lesion caused by oral lichen planus could not be detected (correlation $< 29\%$, $n = 14$). Premalignant lesions were seen with 75% correlation ($n = 8$) in case of leukoplakia without dysplasia, 100% correlation with high grade OIN ($n = 3$). Pigmentation, viral infection and oral malignoma can be detected, but insufficient data does not allow statistical evaluation.

Conclusions: The EndoCytoscope with toluidine staining allows non invasive evaluation of mucosal lesions. In preliminary results regions with inflammation and high grade OIN can reliably be identified.

Relevance: The simple and inexpensive direct endocytological microscopy appears as an appropriate instrument to choose a representative biopsy site.

P130

Treatment outcome of bisphosphonate-related osteonecrosis of the jaws: intravenous vs. oral administration

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Purpose: To compare treatment outcome (long-term antibiotics and superficial surgery in some cases) of patients following intravenous (IV) vs. oral bisphosphonate (BP)-related osteonecrosis of the jaw (ONJ).

Methods: All files of patients with ONJ followed at our oral medicine clinic between October 2003 and December 2007 were retrieved and divided into those who received IV BPs and those who received oral BPs. Only patients with a follow-up of ≥ 6 months were included for analysis. Patients with incomplete data on the duration and dosage of BP use were excluded. Response to treatment was classified as complete, partial and negligible/no healing.

Results: Of a total of 101 files, 87 patients met study entry criteria, of whom 72 received IV BPs and 15 received oral BPs. The IV group had taken zoledronate or pamidronate for a mean of 40.6 months. The oral group used mainly alendronate for 62.7 months. Complete healing of ONJ was documented in 12 (16.7%) of the IV group and in 4 (26.7%) of the oral group. Thirty seven (51.4%) IV patients had only partial response to treatment compared with 8 (53.3%) oral patients. Twenty three (32%) IV patients and 3 (20%) oral patients had negligible/no healing of their ONJ.

Conclusions: Overall prognosis of ONJ is relatively low; however, patients with oral BP-related ONJ seem to respond better to treatment.

Relevance: When informing their patients about the risks and prognosis of ONJ, physicians should note that patients with oral BP-related ONJ seem to respond better to treatment than IV BP-related ONJ.

P 131

Immunohistochemical detection of markers of flogosis and apoptosis in oral squamous cell carcinoma

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Background: A tumour arises when the normal cellular equilibrium between death and proliferation has been troubled; in recent years, a growing evidence seems to support the hypothesis that tumour progression and growth is enabled, balanced and/or modulated by an inflammatory immune response. For this reason, molecular mechanisms and cellular markers related to inflammation and apoptosis receive more and more attention as possible tools to clear up the carcinogenic process and characterize patients' prognosis. This is also the case of oral squamous cell carcinoma (OSCC), the most frequent oral malignant tumour, whose prognosis still relies on the classic prognostic factors (tumour size, site, stage and grade) but remains unsatisfactory and need to be urgently improved.

Materials and methods: We have studied the immunohistochemical expression of bcl-2 (an important apoptosis inhibiting gene), CD3, CD20, CD45 and CD68 (sensible inflammation markers), in 21 cases of OSCC in order to establish their possible correlation to the degree of tumoral differentiation.

Results: Bcl-2 was low or moderately expressed and immunostaining was more diffuse in moderately or poorly differentiated oral cancers. The most expressed inflammatory molecule was CD68, followed by CD45, CD20 and CD3. A trend, without statistically significance, has been observed in the way the inflammatory infiltrate is correlated to the degree of tumour differentiation: well and moderately differentiated tumours are associated to a dense inflammatory infiltrate (57.9% of cases), while poorly differentiated cancers are associated to a low inflammatory infiltrate in 85.7% of cases.

Conclusions: Bcl-2 and inflammation markers may have a prognostic value. In particular, our data seems to suggest that a major role in tumour associated inflammatory infiltrate is played by non-specific immunity with its most important cellular component: the macrophages.

PI32

Oral candida infection in patients with lower saliva flow rates after radiation therapy

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Purpose: Xerostomia is one of the late side effects of radiotherapy in patients with head and neck cancer. Radiotherapy can predispose to oral candidal colonisation of the oral mucosa in immunocompromised patients. This study was focused on correlation between the total unstimulated saliva flow rate (SFR) and the fungal colonisation of the oral cavity and their resistance.

Methods: In 54 patients who had radiotherapy the unstimulated SFR was analysed during 5 min. The results were divided into pronounced xerostomia (SFR = 0.0 ml min⁻¹), xerostomia (SFR ≤ 0.1 ml min⁻¹) and hyposalivation (SFR > 0.1 - < 0.25 ml min⁻¹). After determination of the SFR 2 ml sodium chloride were used to rinse out for 20 s. Candida colonisation was defined using sabouraud agar and identified using API 20 C AUX (biomerieux) in the rinsing water of patients. Resistance was tested with Etest (amphomoralon B:AB; ketokonazol:KE; voriconazol:VO; and fluconazol:FI).

Results: Pronounced xerostomia was detected in 30 patients (median = 106 cfu; range 0–107 cfu), xerostomia in 16 patients (median = 105 cfu; range 0–106cfu) and hyposalivation in seven patients (median = 0 cfu; range 0–106 cfu). Spearman's correlation coefficient was -0.245 (P = 0.077). None of the patients showed a normal SFR. Twenty candida albicans and 14 non-albicans species were identified. The prevalence of in vitro resistance was AB 0%, KE 41%, VO 57%, FI 61%.

Conclusions: Lower SFR correlates with a higher risk for candida infection in patients after radiotherapy. In addition to candida albicans a lot of non-albicans species could be isolated; this might be a problem in the therapy because non-albicans species are associated with increased resistance to the azole group of antifungal drugs.

PI33

Does staging of leukoplakias influence the means of treatment?

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Oral leukoplakia is a white patch or plaque that cannot be characterized clinically or histologically as any other condition, is not associated with any physical or chemical causative agent except tobacco abuse, and may occasionally develop into squamous cell carcinoma of the oral mucosa (WHO 1978, 1984, 1994). Staging, or more detailed assessment of the tendency towards malignant progress, is based on microscopic appearance (surface, circumference) and microscopic finding (level of dysplasia). Based on these characteristics, leukoplakias may be divided into three levels with various risk of malignant transformation. Taking into account results of recent retrospective studies assessing other parameters (localisation, borders, smoking, means of therapy) which proved that risk of malignant transformation is in direct relation to the circumference and surface of the lesion, it can be concluded that only homogenous leukoplakias with circumference smaller than 200 mm² (stage 1 leukoplakias, L1 C1 P1/P2) shall be observed, whereas other leukoplakias are indicated for excision. Prerequisite for this radical approach is distinguishing oral leukoplakias from other clinically similar lesions of the oral mucosa as not to damage the patient with inadequate surgical therapy.

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PI34

Serum and salivary levels of keratinocyte growth factor in recurrent aphthous stomatitis

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Purpose: Keratinocyte growth factor (KGF) is an epithelial-specific growth factor important in wound healing that has also been shown to act as a mucosal protector. Recombinant KGF is used as a treatment of choice for oral mucositis secondary to cancer treatment. The aim of this study was to measure the serum and salivary levels of KGF in patients with recurrent aphthous stomatitis compared with healthy volunteers.

Methods: Serum and whole saliva samples were obtained from 20 patients with minor recurrent aphthous stomatitis. Control samples were obtained from 20 age and sex-matched healthy volunteers. ELISA was the detection and quantification method of choice.

Results: The mean level of serum KGF in patients was 23.25 pg ml⁻¹, compared with 50.78 pg ml⁻¹ in the controls but the difference was not statistically significant. Mean salivary KGF was significantly higher in patients (19.7 pg ml⁻¹) than the control group (7.275 pg ml⁻¹) (P < 0.05).

Conclusions: To our knowledge, this is the first study to successfully detect and quantify KGF in whole saliva, suggesting the potential of using saliva rather than serum to study KGF. Further KGF research in a larger patient population during all three disease phases in RAS and in other oral conditions in which acute or chronic oral ulceration is a manifestation are going to be of value in furthering the understanding of the disease process.

Relevance: The results support a possible role for KGF in ulcerative mucosal disease and that it is detectable in saliva, opening up the prospect of using saliva in future studies of its role in the aetopathogenesis and treatment of oral mucosal conditions.

PI35

Saliva analysis by SELDI-TOF-MS in orthodontic treatment

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Introduction: SELDI-TOF-MS (Surface-Enhanced Laser Desorption/Ionization Time-Of-Flight Mass Spectrometry) allows the generation of an accurate protein profile from minimal amounts of biological samples and may executes proteomic profile of saliva.

Aim: The aim of this work is to compare the proteomic profile of saliva of patients in orthodontic treatment at the beginning of treatment and after 3 months by using the surface enhanced laser desorption/ionization time-of-flight mass spectrometry (SELDI-TOF-MS) technology.

Methods: Saliva was collected from 10 patients, between the 11 and 17 years, at the beginning of the ortodontic treatment and after 3 months. Specimens were centrifuged (10 min, 13 000g); the Q10 Protein Chips were prepared according to the manufacturer's instructions and were loaded with the supernatants. A saturated solution of sinapinic acid was used as energy-absorbing matrix. The analysis was performed in a m/z range from 2500 to 25000 Da, and the proteomic profiles were compared by a specific data analysis software.

Results: The average intensities of peaks at m/z 3372, 5232, 4045 and 10128 were significantly higher after 3 months then at beginning of treatment in the same patients and among these one.

Conclusion: Many differences were noted in salivary proteomic profile obtained using the SELDI-TOF-MS technology in patients in ortodontic treatment to beginning and after 3 months. These data suggest that the proteomic analysis of saliva is a promising new tool for a non-invasive study of oral mucosa and bone changes.

P 136

Altered expression of endothelial markers in bisphosphonate associated osteonecrosis of the jaws

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Purpose: Bisphosphonate (BPs) are potent inhibitors of bone resorption and are widely used drugs for the treatment of osteoporosis and bone metastasis. However, some side effects after a long therapy with BPs have been recently documented. The most important is the osteonecrosis of the jaws (ONJ). It has been suggested that one of the potential mechanisms include the possible antiangiogenic effects of nitrogen-containing BPs. Thus, the aim of this study was to investigate the expression of two well-known vascular markers in ONJ.

Methods: Sixteen samples from patients with BPs-associated ONJ and 10 specimens of healthy bone, as controls, were used for the study. Specimens were analysed for VEGF and CD34 expression by immunohistochemistry. To evaluate the markers expression, a mean percentage of positive cells was determined and a semi-quantitative assessment was performed assigning cases to one of three categories: score 0 (0–25%); score 1 (25–50%); score 2 (> 50%).

Results: There was a statistically significant difference in CD34 expression between cases and controls. Indeed, ONJ showed a reduced expression of CD34 compared to healthy subjects. On the contrary, VEGF expression was higher in ONJ than in controls, and this difference was statistically significant.

Conclusion: This preliminary observation supports the theory that antiangiogenic effects of BPs could account for one potential mechanisms of ONJ. However, further studies with wider cases are necessary to confirm this issue.

Relevance: If present results will be confirmed endothelial preservation strategies will be useful for treating or preventing BPs-associated Jaw osteonecrosis.

P137

Influence of detection and elimination of oral infections on development of leprosy reactions. A preliminary trial

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Purpose: The aim of this study is to clarify whether the oral infection could be recognized as one of the exacerbating factor in leprosy reaction.

Methods: Leprosy patients before, during and after treatment for leprosy based on presence of oral infections were selected. There were two groups: test group – leprosy patients with oral infections, and control group – leprosy patients without oral infections. Criteria of analysis were based on clinical features by presence of leprosy reaction; laboratorial features by hematological counts, acute-phase proteins level, urinary assay; and immunological features by serum cytokines (IL1 β , IL-10 and IFN- γ), anti-PGL1 antibody. These analysis were realized immediately before and after 7 days the elimination of oral infection.

Results: Twelve patients were analyzed, seven of the test group and five of the control group. All patients of the test group presented leprosy reactions, and they showed clinical improve of their reactions after dental treatment. However there were not statistical differences (Wilcoxon test; $P > 0.05$) in laboratorial features and serum levels of cytokines before and after dental treatment.

Conclusion: Although the number of our patients was small, these results suggest that oral infection could be involved in the pathogenesis of leprosy reactions as exacerbating factor.

Relevance: Dental treatment may improve the care of leprosy patients in order to prevent disability caused by leprosy reactions.

P138

Salivary anti-PGL-I in leprosy patients

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Purpose: To analyze anti-PGL-1 salivary and serum titers as parameters for correlation with infection and antigen exposure.

Material and Methods: Leprosy patients before, during and after specific treatment for leprosy were selected. Salivary and serum anti-PGL-1 levels by use of ELISA were determined in 30 leprosy patients, age range 17–71, mean 48.45 ± 20.92 years, and in 10 healthy controls, age range 22–45, mean 30 years. Statistical analysis was performed by use of an unpaired t-test with Welch's correction.

Results: There were significant differences in serum titers of anti-PGL-1 between health controls and leprosy patients ($P < 0.05$), however significant differences in salivary anti-PGL1 were not found between both groups. Correlation was not found between salivary antibody levels and serum titers in leprosy patients, suggesting the presence of some protection factor in oral mucosa in these patients.

Conclusion: Anti-PGL-1 response is not the main factor of the mucosal immune response to *Mycobacterium leprae*. We might concluded that due the special characteristics of the oral mucosa is very difficult the development of specific leprosy lesions in this region.

Relevance: The oral mucosa is not related with leprosy transmission.

P139

Oral complications in pediatric oncological patients

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The treatment of patient with cancer has changed in the last years. New drugs and new technologies like devices of Radiation Therapy. However oral complication is still present in cancer patients. This study describes the early and late deleterious effect in oral cavity of cancer patient in treatment and demonstrate the prevalence of these complications in 39 children with cancer that had been treated between August/2004 and December/2004, in the Santa Casa Hospital of Belo Horizonte, Minas Gerais, Brazil. It was a retrospective chart review based study. Oral mucositis was present in 69.2%, oral candidiasis in 17.9% and oral viral infection in 15.3%. trismus, xerostomia and radiodermatitis were present in one patient with lip cancer submitted to surgery and

radiation therapy associated chemotherapy. We observed that aggressive treatment is associated with more oral complications. These patients present with serious oral symptoms and they can develop systemic infections, some of these can lead to death.

P140

Treatment of oral leukoplakia with CO₂ and diode laser: an analysis of 25 cases

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Purpose: To monitor patients with oral leukoplakia (OL) treated with laser surgery by mean of clinical and histopathologic analysis.

Methods: The diagnosis of OL was based on the Uppsala Symposium criteria (1996). Possible etiologic factors such as friction, lichen planus and Candida infection were ruled out. Smoking and alcohol habits, as well as the clinical appearance (homogenous/non-homogenous, size, localization) and histological degree of dysplasia of lesions were recorded. Laser excision of lesions was performed under local anesthesia with CO₂ laser ($\lambda = 10\,600\text{ nm}$, 5–15W) or diode laser (808 nm, 2–3 W). Patients were evaluated every 3 months after surgery during the first year, and then every 6 months.

Results: Twenty-five patients (mean age, 59.9) with OL were treated with laser and followed up for period ranging from 3 to 55 months (mean 23.6 months). Three patients developed superficial carcinoma, 14 experienced recurrences. There was no significant association between clinical features or degree of dysplasia with the rate of recurrence and malignant transformation by Chi-squared and odds ratios tests ($P > 0.05$).

Conclusions: Treatment of OL with laser surgery, regardless of the clinical aspect or the degree of lesion dysplasia, resulted in a high rate of recurrence (36%) and did not preclude patients from developing malignant transformation.

Relevance: Laser surgery is very useful for managing OL, but the patients must be monitored during treatment and thereafter.

P141

Establishment of an odontological department and an odontological Care Protocol at a public cancer hospital in Brazil. Report of experience

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Introduction: In Brazil access to odontological care is limited, also in Cancer Centers, and most patients present for treatment with bad dental health status. This abstract describes the implementation of an Odontology Department and Care Protocol of treatment at the Hospital of the Cancer (HC) HSDJ/ACCCOM, a public hospital associated to a non governmental institution. HC is located in Divinópolis (Brazil) and covers cancer treatment for 1.5 million people.

Methods: In February 2005 Odontology Care Department was created at HC and a protocol was implemented. Patients were analyzed for age, sex, diagnosis, staging, radiotherapy protocol, chemotherapy protocol, history of smoking, history of alcohol intake and tooth decay risk score.

Results: From 02/2005 to 02/2007 2278 patient evaluations were done. Most patients presented for treatment with precarious dental status. It was observed that severe complications were more frequently seen in patients who were young, presented bad dental health status prior to treatment, patients with leukaemia and had and neck cancer, submitted to multi-modal treatment (specially including fluoropirimidines and metotrexate) and those who did not comply with the proposed protocol.

Conclusions: A comprehensive dentistry care support is essential for the treatment and improvement of life quality for cancer patients. Establishment of a protocol organizes patient flow and improves the quality of care.

P142

A comparison of serum and saliva levels of IL-2 and IL-6 in patients with burning mouth syndrome

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Purpose: Burning Mouth Syndrome (BMS) is an idiopathic pain condition characterized by constant burning sensation involving intra-oral soft tissues with no mucosal lesions or any other clinical and laboratory abnormalities. Despite the existence of numerous studies, clear causative factor or mechanism of this painful condition has not yet been defined. To date, neural factors and cytokines may be implicated in the pathogenesis of BMS. The aim of the present study was to compare the serum and saliva levels of IL-2 and IL-6 as possible aetiological factors in BMS and to investigate a correlation between these parameters.

Methods: Thirty patients with BMS and 30 matched controls participated in the study. Serum cytokine levels were measured with cytometric bead array. In addition,

unstimulated saliva was collected from participants and salivary flow rates were determined. Cytokine immunoassay kits were used to determine the concentration of IL-2 and IL-6 in the whole saliva samples. In addition, the level of anxiety and depression were analysed by means of the Spielberger State-Trait Anxiety Inventory and Zung Self-Rating Depression Scale in both groups.

Results: Although no statistically significant differences were observed in relation to salivary IL-2 and IL-6, and serum IL-6 levels between BMS and control groups, serum IL-2 levels were significantly lower in BMS group ($P < 0.05$). There were no statistically significant correlations between serum and saliva levels of IL-2 and IL-6. Subjects in BMS group had significantly higher mean values for TAI compared with controls ($P < 0.05$).

Conclusions and relevance: Decreased IL-2 levels in serum may lead us to think that BMS may occur as a sign of predisposition to autoimmunity or may be an autoimmune disease itself.

PI43

Abstract withdrawn

PI44

Does non-malignant mucosal disease confer an oral health disadvantage?

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Purpose: We have previously detailed the impact of oral lichen planus on quality of life. We aim to elicit the impact of non malignant mucosal disease (NMOMD) severity on tooth loss, quality of life and the provision of tooth replacement.

Method: All individuals with biopsy proven NMOMD were eligible to join the study and prospectively recruited. Oral mucosal disease severity classified by treatment need, the Oral Health Impact Profile (OHIP-14) and 16-item UK oral health-related quality-of-life measure (OHQoL-UK), decayed, filled, missing teeth (DMFT) and method of tooth replacement were documented.

Results: The initial data on 37 subjects (age mean 61, range 30–85, 15:22 male: female) with NMOMD recruited to this ongoing study is reported. The mean OHIP-14 and OHQoL-UK were 17.4 (range 0–41) and -5.4 (range -26–27) respectively. Spearman's coefficient suggests correlation between disease severity and quality of life, which as yet has not attained statistical significance and is greater for OHIP-14 (0.27) than OHQoL-UK (0.48). The mean number of missing teeth was 4.6 (range 0–24), significantly less than age matched data from the 1998 Adult Health Survey.

Conclusion: NMOMD impacts on quality of life and confers an oral health disadvantage, but initial results suggest no predisposition to accelerated tooth loss in affected individuals.

Relevance: Whilst mucosal borne replacement of missing teeth in individuals with NMOMD is unsatisfactory tooth loss may be adequately undertaken by tooth born and implant retained prostheses.

PI45

Cyanocobalamin may be beneficial in the treatment of recurrent aphthous ulcers even when vitamin B12 levels are normal

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Objective: To evaluate the efficacy of cyanocobalamin treatment in patients having recurrent aphthous ulcers (RAU) with normal or decreased serum vitamin B12 (cobalamin) levels.

Methods: Seventy-two patients with RAU were included in the study. In addition to serum cobalamin levels, hemanitic and biochemical parameters were measured. Patients with serum cobalamin levels $< 140 \text{ pg ml}^{-1}$ were defined as the cobalamin deficient group (CDG) while patients with cobalamin levels $\geq 140 \text{ pg ml}^{-1}$ were defined as the cobalamin normal group (CNG). The degree of aphthous ulcer healing was determined according to serum cobalamin levels at the 1st and 6th month following cyanocobalamin treatment protocol.

Results: Of the 72 participants, 37 were in the CDG while 35 were considered to have normal cobalamin levels. In the first admission the cobalamin levels were $215.8 \pm 116.90 \text{ pg ml}^{-1}$ in CNG and $107.43 \pm 29.35 \text{ pg ml}^{-1}$ in the CDG. The frequency of aphthous ulcers was defined numerically according to monthly occurrence of the lesions. The mean aphthous ulcer frequency in CNG group was 1.9 ± 0.7 , while it was 2.4 ± 0.9 in the CDG. A significant increase in cobalamin levels was observed after cyanocobalamin treatment in both groups. A significant decrease in aphthous ulcer frequency was also concurrently observed. Ninety-six percentage of the patients

showed good response to replacement treatment, 4% of the study population did not respond to the treatment.

Conclusion: Cyanocobalamin treatment may be beneficial for patients with RAU even when serum cobalamin levels are normal. We suggest that higher serum cobalamin levels should be attained in patients with RAU for mucosal protection.

PI46

Dapsone efficacy and adverse events in the management of mucous membrane pemphigoid

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Purpose: Dapsone is advocated in consensus guidelines as therapy for 'mild' mucous membrane pemphigoid (MMP), despite potentially fatal adverse effects and little supporting evidence. We aim to detail dose and duration of therapy, efficacy and adverse effect profile.

Method: A 5 year (2003–2008) database review identified individuals with dapsone-treated MMP and data extraction from the patient record to a proforma completed.

Results: Twenty patients met inclusion criteria – male:female 1:1.5, mean age 63 years (range 42–83). Forty-percentage had oral lesions alone, 20% oral/ocular, 20% oral/ocular plus either oesophageal, nasopharyngeal, laryngeal or genital involvement, 10% oral/oesophageal, 5% oral/laryngeal and 5% oral/cutaneous respectively. Eighty percentage cases had gingival, 45% palatal and 35% buccal mucosal disease. All individuals received topical corticosteroid therapy prior to dapsone, 50% systemic corticosteroids and were negative for G6PD deficiency. 19 patients received 50 mgs daily titrated until positive clinical response achieved. The mean therapy duration was 12 months (range 1–46). Seven were successfully maintained with minimal symptoms and no adverse effects. Of the remaining 13 ceasing therapy, disease control led to cessation of therapy in one subject, one reported no clinical response and 11 had adverse effects. Adverse events included rash (45%), gastrointestinal symptoms (27%), headache (9%) and fever (9%). The remaining reported flu-like symptoms. One case of dapsone syndrome, but no dapsone-mediated methaemoglobinemia were reported.

Conclusion: Dapsone may achieve satisfactory disease control in MMP but prescription is limited by the adverse effect profile.

Relevance: Patients and clinicians should be aware of the risk-benefit profile of dapsone. Information, monitoring, and easy patient access to service minimise risk.

PI47

Electronic intra-oral device to treat xerostomia

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Objectives: A European Commission funded project ('Saliwell') has developed an intra-oral electro-stimulator of salivary glands to treat dry mouth. The device, named 'GenNarino', is a removable appliance, combining micro-electronics, software and wireless communication, and applies stimulating signals on the lingual nerve, leading to enhanced salivary secretion. A short-term clinical trial has shown statistically significant improvement in patients' oral wetness and symptoms, and no side-effects (Strietzel FP et al., 2007). The objective of the present study is to test the efficacy of the device over a period of several months.

Methods: In this randomized multi-national clinical trial, the use of the device is compared between active vs sham mode for 1 month each in a double-blind design. Thereafter, the xerostomia relieving effect is compared between different lengths of usage (1, 5 or 10 min) of the active device, for additional 9 months. VAS-based questionnaires and whole saliva collections are performed. At least 100 xerostomia patients will be evaluated.

Results: Data of the first 52 patients (39 of them with Sjögren's syndrome) show improvement in a variety of parameters, such as quality of life and sleeping, oral dryness and comfort, speech, swallowing and salivary flow-rate. On patients with very low or absent flow-rate at baseline, the superiority of active over sham is the greatest.

Conclusions: These results are confirming the efficacy of GenNarino in the relief of xerostomia.

Acknowledgements: The study has started at the Universities of El Bosque (Bogotá), Hadassah (Jerusalem), Istanbul, Kentucky, Malmö, Mc Gill (Montreal), Palermo, UNAM (Mexico), Zagreb, Brasília, Helsinki and Texas, and the Hospitals Charité (Berlin) and Clínico San Carlos (Madrid).

PI48

Evaluation of pentoxifylline in the treatment of recurrent aphthous stomatitis unresponsive to colchicine

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Purpose: For the treatment of severe recurrent aphthous stomatitis (RAS), systemic corticosteroids and thalidomide, have been used with success but they can induce many

adverse effects. Indeed first line systemic therapy usually begin with colchicine. The objective of this study was to evaluate the influence of pentoxifylline treatment on RAS remission unresponsive to colchicine.

Methods: Ten patients with more than two oral ulcers per month unresponsive to colchicine treatment (1 mg day⁻¹) begin for more than 3 months were observed. Conditions that could influence their oral ulcer were searched ie behcet and chronic inflammatory intestine disease, serum level of ferritin, vitamin B12, folic acid, and full blood cell count. Pentoxifylline was given at 1200 mg daily for 12 months. Patients were evaluated at 3, 6 and 12 months. The effect of the treatment was noted as full remission, partial remission (reduction of the episode) or no effect.

Results: At 3, 6 and 12 months, five patients were in full remission, three in partial remission and two had stop the treatment at 3 months because of side effect, diarrhoea for one and persistence of aphthous for the second. For the five patients with full remission a lack of relapse was observed 6 months after they stop the treatment.

Relevance: This results seems to indicate that pentoxifylline could be a good alternative of RAS treatment for patients unresponsive to colchicine. Indeed second line systemic therapy should begun with pentoxifylline, more easily used than Corticosteroïd and Thalidomide due to lower side effects.

P149

Diagnosing oral lichenoid contact reaction (OLCR): clinical judgement versus skin-patch test

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Purpose: To compare skin-patch test with the clinical diagnosis of oral lichenoid contact reaction (OLCR) as indicators for amalgam replacement.

Methods: Of 46 patients (37 female and nine male; mean age 48.7) with oral lichen planus (OLP), 19 were identified as having OLCR, and clinically graded according to the proximity of their lesions with amalgam fillings: class I (weak association), class II (moderate association), and class III (strong association). All OLCR patients were skin-patch tested for both standard (Brazilian) and specific allergens (TROLAB, Germany). Patients were considered skin-patch positive only if they developed positive skin reactions for thimerosal and/or amalgam components. Amalgam replacement was indicated in all class II and III patients. For class-I patients, amalgam replacement was indicated only if they were skin-patch test positive. Readings for the skin-patch test were made at 48 h and 96 h.

Results: Of the 19 patients with OLCR, two missed follow up and were excluded, leaving 17 cases. Three patients were class-I, and all were negative for skin-patch test. Nine were class-II, of whom five were skin-patch positive. Five were class-III, of whom four were skin-patch positive. Following amalgam replacement in the nine class-II patients, six showed improvement and three had complete resolution, while in the five class-III patients, one showed improvement and four complete resolutions.

Conclusion: Clinical characterization of OLCR lesions is relevant to the question of amalgam replacement and, in some cases, outperforms skin-patch test results.

Relevance: Accurate identification of OLCR lesions helps in the decision to replace amalgam fillings.

P 150

Comparison of oral mucosal and periodontal status in smokers and non-smokers in a sample of the Czech population

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Aim: The aim of the project was to determine the influence of smoking habits on oral health in a cross-sectional study targeted on adults at the age 30–69 years.

Methods: The study consisted of two parts – self-reported questionnaire and clinical examination of oral health status including teeth (DMF), periodontal (CPITN) and mucosal findings. Statistical analysis was performed by NCSS 2004 programme using descriptive statistics, Fisher's t-test, ANOVA, and chi-squared test.

Results: From a total number of 1473 participated individuals, 641 revealed positive smoking history of current or occasional or former smokers (364 males and 277 females, mean age 44.4 year), 832 were non-smokers. Non-smokers revealed better oral hygiene level, higher percentage of respondents participated on regular dental care and higher percentage of university-graduated individuals in comparizon with smokers ($P < 0.001$). There was significant difference in occurrence of oral mucosal lesions score between smokers and non-smokers ($P < 0.033$) without influence of the age and smoking habits. In smokers, there was higher occurrence of various mucosal lesions than in non-smokers. Chi-squared test revealed a significant difference ($P < 0.007$) in maximal CPI values between smokers and non-smokers. In smokers, there was higher occurrence of sextants with CPI 4 values than in non-smokers (20.1 vs 14.1) whose revealed a higher frequency of sextants with CPI 0 (1.3 vs 1.7) and CPI 1 (11.1 vs 18.6). The difference was statistically significant ($P < 0.001$). The odds ratio in smokers with periodontitis presence was related to the age (2.495) and frequency of preventive check-ups (1.756 in once a ydar, 1.807 in less frequent check-ups), and poor oral hygiene habits (1.521).

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P151

Ocular involvement in dry mouth patients: value of six ophthalmologic parameters

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Purpose: To assess lachrymal and salivary function in patients with Sjogren's syndrome (SS) and non-SS dry mouth patients; to assess the reliability of six different surveys related to dry eye in SS diagnosis.

Material and methods: Study included 66 dry mouth patients (48 patients with SS, and 18 age and sex matched non-SS sicca controls). All participants were examined: unstimulated whole saliva (UWS), stimulated whole saliva (SWS), serology testing, labial gland biopsy (LGB). Six ophthalmologic parameters were measured: subjective questionnaire Ocular Surface Disease Index (OSDI), and objective tests: Schirmer-I and Schirmer -II tests, Tear Break-up Time (TBUT) test, Rose-Bengal (RB) and Lissamine-green (LG) scores. Differences between groups were analyzed using Mann-Whitney U-test; ROC curves were calculated for each ophthalmologic parameter's sensitivity and specificity; Spearman's coefficient assessed correlations between OSDI and objective ocular tests.

Results: Statistical differences between groups were found in UWS, SWS, OSDI and ophthalmologic tests. Most significant differences between groups were observed in RB and LG scores. Within SS group, between subjects with positive and negative LGB findings, statistically significant differences were found for ophthalmologic tests, UWS and SWS. ROC curves showed sensitivity and specificity of ocular parameters in ascending order: TBUT (0.714) OSDI (0.740), Schirmer-I (0.780), Schirmer-II (0.802), LG (0.990) and RB (1.000). Highest correlations with OSDI were observed for RB and LG cores, whereas for Schirmer-I was the lowest.

Relevance: Study reveals the limited reliability of TBUT and Schirmer-I, and emphasizes vital dye staining as the test of choice in the Sjogren's syndrome differential diagnosis.

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