

## CBD TOXICOLOGICAL ASPECTS ON HEALTHY AND CANCER HUMAN ORAL CELLS: *IN VITRO* STUDY

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**Aim:** the aim of the study was to investigate the biological effects and cytotoxicity of CannaBiDiol (CBD) on human oral gingival fibroblasts (BSC1 138), oral keratinocytes (PCS-200-014), and tongue squamous carcinoma (HSC-3) cells.

**Methods:** CBD concentrations from 1 to 100  $\mu\text{M}$  were used for 24h and 72h, administered continuously (acute treatment) or for 30 minutes every 8h (chronic treatment). Viability, morphology, cell migration, apoptosis and cell cycle, expression of related genes (p53, BCL2, p21, and BAX) and of endocannabinoid system receptors (CB1, CB2 and GPR55), and DNA damage detection were analyzed. ANOVA was performed with GraphPad Prism 5.01, considering  $p < 0.05$ .

**Results:** acute treatment reveals significant effects in fibroblasts; concentrations  $\geq 50 \mu\text{M}$  show great cytotoxicity, re-

duced migration and higher apoptosis: p53, BAX, and p21 levels increase with arrest in G0/G1 phase. H2AX phosphorylation has risen with 25  $\mu\text{M}$  and 50  $\mu\text{M}$ , while 1  $\mu\text{M}$  was biocompatible. While after acute treatment on HSC-3 cells, 25  $\mu\text{M}$  resulted in a significant decrease in viability at both time points, with increment in apoptosis, increase in G0/G1 phase particularly evident at 72h, and increase in DNA damage at 24h.

**Conclusions:** CBD suppressive effect was dose- and time-dependent both on normal and pathological cells, supported by the induction of apoptosis or the activation of DNA damage, with less damage after chronic treatment for healthy cells, of which keratinocytes showed less cytotoxic effect than fibroblasts. Further investigations are needed to identify an effective therapeutic dose of CBD.

## MUCOADHESIVE PATCHES FOR TOPICAL APPLICATION OF STEROIDS: A PRECLINICAL STUDY

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Clobetasol-17-Propionate (CP) is a potent corticosteroid, highly effective in managing oral immune-mediated conditions despite the lack of a dedicated oral formulation. Here, we developed an innovative bilayer chitosan (CS)-based mucoadhesive patch via ElectroPhoretic Deposition (EPD), loaded with CP. This study assessed the patch's properties, mucoadhesion, cytocompatibility, CP release, and bioactivity.

In the EPD process, CP and CS (dissolved in 30% water + 70% ethanol solution) were deposited in a two-step deposition sequence to obtain bilayer patches. Patch morphology was examined using SEM and optical microscopy. CP release was quantified by Liquid Chromatography Mass Spectrometry, using both *in vitro* and *ex vivo* mucosal models. A tack-test assessed mucoadhesion; cytotoxicity and bioactivity were ana-

lyzed using an oral mucosa 3D human model with Alamar Blue and proteomics, respectively. ANOVA test was applied.

Patches showed a bilayer porous structure, with an excellent swelling rate after re-hydration. CP was efficiently loaded (at  $0.9 \pm 0.2 \mu\text{g}/\text{mg}$ ) and a sustained CP release profile was observed over the time. Patch's mucoadhesion was confirmed, and it was not affected by the presence of the drug. The 3D mucosal model confirmed the cytocompatibility of the delivery system, and, at proteomic analysis, the bioactivity of CP released from patches was observed, identifying 7 down-regulated and 10 up-regulated peptides related to CP's anti-inflammatory effects.

CS-based mucoadhesive patches are an effective and promising CP delivery system for the oral mucosa.

## COLD ATMOSPHERIC PLASMA IMPACT ON CANCER CELLS PROLIFERATION AND MORPHOLOGY

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**Aim:** due to the drawbacks of RadioTherapy (RT) on Head-Neck Cancer (HNC) cells and oral health, alternative anti-cancer possibilities (such as Cold Atmospheric Plasma, CAP) are explored. This study investigated the impact of CAP on cancer cells proliferation and morphology.

**Methods:** a Jet CAP with air gas was employed at room temperature, high voltage electrode, a ground electrode, a high-voltage power source, and dielectrics. MTS assays were conducted on three HNC cell lines (HSC2, HSC3, and FaDu), as well as on normal hGF cells directly treated with CAP for 30 and 60s, and Doxo (positive control) to measure cell proliferation inhibition at different time points (24, 48, and 72h). Cells were fixed, dehydrated and gold-coated to evaluate morphol-

ogies using a Scanning Electron Microscope (SEM). Data were statistically analyzed ( $p < 0.001$ ).

**Results:** CAP 60s demonstrated the highest inhibitory effects, irrespective of the cell line ( $p < 0.001$ ). While HSC2 cell line sensibility was highest at 24h, the others exhibited a positive time-dependent inhibitory effect. Interestingly, effects of CAP in the hGF were minimal, supporting CAP selectivity. SEM observations revealed morphology changes in HNC cells treated with CAP at 30-60s.

**Conclusions:** CAP selectively influences cancer cells proliferation and morphology in a time dependent manner. These results were effective in establishing the reliable application time for effective CAP therapy, necessary for future studies.

## PDT AGAINST *C. GLABRATA* MDR IN A SIMULATE SUB PROSTHETIC INFECTION: *IN VITRO* STUDY

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**Aim:** to evaluate the effectiveness of curcumin based Photo-Dynamic Therapy (PDT) against a biofilm of a clinical isolate of *Candida glabrata* Multi-Drug Resistant (MDR), grown on an oral denture surface.

**Introduction:** During PDT we have interaction between a photosensitizer, light with a specific wavelength and the presence of oxygen. Some natural compounds are proposed as photosensitizers in PDT to treat oral infections, such as sub prosthetic candidiasis sustained by *Candida* spp MDR, sometimes responsible of systemic infections.

**Methods:** an *in vitro* infection of a denture with a concentration of  $10^7$  colonies of *C. glabrata* MDR was performed to simulate a subprosthetic infection, using a homemade bioreactor with a liquid culture medium containing human saliva. After evalua-

tion of Colony-Forming Unit (CFU), on the surface of the denture through a brush used to contaminate a Petri dish with Sabouraud gel medium, a 5-minute session of PDT with curcumin-based photosensitizer and a blue light at 460 nm, was performed. After the experiment another CFU evaluation was performed with the same method and after 48h of Petri dishes incubation, a comparison was made.

**Results:** the CFUs decreased after PDT with curcumin and hydrogen peroxide, from 1500 to  $<20$  CFU/cm<sup>2</sup>.

**Conclusions:** PDT represents an excellent method to reduce the incidence of oral mycotic infections sustained by *Candida* spp MDR. Curcumin-based photosensitizers, never tested in scientific literature to decontaminate prosthetic devices in patients with subprosthetic candidiasis, can be considered effective.

## MIRNAS EXPRESSION IN INFECTED CELLS WITH *C. ALBICANS* MDR AFTER PDT. *IN VITRO* STUDY

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**Aim:** *C. albicans* oral infection is a huge issue due to its growing resistance against conventional antifungal drugs. Photo-Dynamic Therapy (PDT) consists of a light at a specific wavelength activating a PhotoSensitizer (PS). The PS binds selectively only to affected cells causing their apoptosis thanks to the formation of ROS. Biomolecular studies on *C. albicans* reveal that its infection produces typical signals that can be used as markers of inflammation. 2 *microRNAs* molecules - *miRNA146a* and *miRNA 155* - were detected and studied as markers of inflammation in *C. albicans* infected cells. Aim of this *in vitro* study is to assess the impact of PDT on their expression.

**Methods:** Human Embryonic Kidney (HEK)-293 cells were grown in culture, incubated for 48 hours and infected with *C. albicans* CA97. Expression of the 2 *miRNAs* in cell cultures

was measured before and after the treatment with A) PDT with light alone; B) PDT with PS alone; C) complete PDT (light + PS). The PS used was a mixture of curcumin/H<sub>2</sub>O<sub>3</sub> activated by a blue light (470 nm, 200 mW). After 2 hours of incubation, evaluation of *miRNAs* expression on treated cells of each experimental group were tested.

**Results:** *Pri-miRNA 146a* and *Pri-miRNA 155* expression in HEK cells is lower in group C) than in group A) and B). After 2 minutes of PDT, the expression levels of *miRNA 146a* and 155 decreased by about 50% going from 2 to 0,9 for *miRNA 146a* and from 3,4 to 1,5 for *miRNA 155*.

**Conclusions:** *miRNAs* evaluation can be considered a safe and effective tool to monitor inflammation in candidiasis before and after PDT session.

## TOCOPHEROLS VS CHLORHEXIDINE IN MANAGING VAS-D ON BIOPSY SITE: A RANDOMIZED CLINICAL TRIAL

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**Aim:** this randomized clinical trial assessed the efficacy of topical tocopherol acetate compared with chlorhexidine 0.2% in easing oral discomfort in patients who underwent an oral biopsy.

**Methods:** thirty patients who were candidate for an oral biopsy were randomly assigned to two groups, which received first one a treatment which contained tocopherol acetate (12 women 3 men, mean age 69 sd 9.49) and the other chlorhexidine 0.2% (9 women, 6 men, mean age 63 sd 14.13). The primary outcome was less discomfort, measured on a Visual Analog Scale (VAS) on first and sixth post-operative day. The secondary outcome was height and width of post-operative site measured (analyzed and standardized with ImageJ) and photographed at each follow-up. Intake of painkillers was also recorded.

**Results:** no statistically significant differences emerged between the two treatments (1 vs 2) in terms of VAS scores ( $P > 0.05$ ; 0.7837), or height and width of post-operative site ( $P = 0.1056$ ;  $P = 0.9547$ ) nor between patients who took painkillers and those who did not ( $P = 0.218$ ). Significant differences were seen for VAS scores in each group ( $P_{(1)} = 0.005069$ ;  $P_{(2)} = 0.001797$ ).

**Conclusions:** the two treatments did not differ in terms of VAS scores for discomfort or height and width of post-operative site. Both treatments proved effective in decreasing VAS-D on biopsy site. The use of tocopherols on post-operative biopsic sample site should be considered instead of chlorhexidine which is demonstrated in the literature to alter the composition of the oral microbiome.

## PHOTOBIO-MODULATION IN BURNING MOUTH SYNDROME: A TRIPLE-BLIND RANDOMIZED CLINICAL TRIAL

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**Aim:** Burning Mouth Syndrome (BMS) is a chronic condition characterized by intraoral burning or dysaesthetic sensations, affecting up to 3.9% of the population, predominantly middle-aged females. This triple-blind randomized controlled clinical trial aimed to assess the efficacy of PhotoBioModulation Therapy (PBMT) in reducing pain/burning intensity in BMS patients, using the Visual Analog Scale (VAS), Numerical Rating Scale (NRS), and Short-Form McGill Pain Questionnaire (SF-MPQ), while evaluating improvements in Oral Health-Related Quality of Life (OHRQoL) and pain relief post-treatment.

**Methods:** patients diagnosed with BMS were recruited from Oral Pathology Unit, Fondazione IRCCS Ca' Granda, Milano. Baseline assessments included Numerical Rating Scale (NRS), Visual Analog Scale (VAS), Short-Form McGill Pain Question-

naire (SF-MPQ), and Oral Health Impact Profile (OHIP-14). PBMT involved three weekly sessions for four weeks using a diode laser. Assessments were conducted weekly during treatment and at 1-, 4-, 7- and 10-months post-treatment.

**Results:** significant reductions in perceived pain were observed in the Trial group compared to Controls, as assessed by NRS, VAS, and SF-MPQ ( $p < 0.05$ ). Both Trial and Control groups experienced improved OHRQoL at week 4, although Control group OHRQoL declined over the 10-month follow-up. Relief of perceived pain was consistently superior in the Trial group at 1-, 4-, 7-, and 10-months post-treatment ( $p < 0.05$ ).

**Conclusions:** PBMT effectively reduces BMS pain intensity and improves OHRQoL over 10 months, supporting it as a promising therapeutic option for BMS patients.

## OZONIZED ORAL HYDROGEL VS CLOBETASOL PROPIONATE GEL IN EROSIVE ORAL LICHEN PLANUS

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**Aim:** this double-blind Randomized controlled Clinical Trial (RCT) aimed to compare the efficacy of Ozoral gel<sup>®</sup> (trial group) versus Clobetasol propionate gel 0.05% (control group) in treating erosive Oral Lichen Planus (LPOe). The objectives included reduction in lesion size and severity, pain assessment, relief, satisfaction, and impact on Oral Health-Related Quality of Life (OHRQoL) through various scales.

**Methods:** twenty-four patients with LPOe were recruited, with 12 in each group, from the outpatient clinic of Oral Pathology and Medicine IRCCS Ca' Granda Ospedale Maggiore Policlinico. Patients were randomized into test and control groups and double-blind evaluation was performed over three months using assessment tools including Thongprasom and Elsabagh scoring systems, VAS, VRS, SF-MPQ, and OHIP-14.

**Results:** significant increases in Thongprasom scores were observed in the control group between  $T_0$  and  $T_2$ , and  $T_0$  and  $T_3$ , with differences between the control and trial groups at various time points. Elsabagh scores also showed significant increases in the control group between  $T_0$  and  $T_1$ ,  $T_2$ , and  $T_3$ , with a significant difference between control and trial groups at  $T_3$ . No significant differences were found in VAS, VRS, and SF-MPQ scales, nor for relief or satisfaction levels measured by OHIP-14.

**Conclusions:** while both treatments improved OHRQoL for LPOe patients, the control group showed slightly better outcomes. This suggests that while Ozoral gel<sup>®</sup> is effective, Clobetasol propionate gel 0.05% may offer slightly superior benefits, especially for patients with more severe LPOe (Thongprasom and Elsabagh scores  $\geq 4$ ).

## VORTIOXETINE VERSUS SSRI/SNRI WITH PREGABALIN AUGMENTATION IN BMS CLINICAL TRIAL

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**Aim:** Burning Mouth Syndrome (BMS) treatment represents a challenge. The augmentation with pregabalin to conventional treatment has shown promising outcomes in relieving pain and improving the quality of life in chronic pain. This study compared the efficacy of vortioxetine with other antidepressants (SSRIs/SNRIs) in combination with pregabalin in a cohort of unresponsive BMS patients and to predict treatment response by using clinical data.

**Methods:** a 52-week randomized, open-label, active-controlled study was conducted, enrolling 203 BMS patients previously treated with one antidepressant for 12 weeks and non-responders to the treatment (clinical trial registration:NCT06025474). The study sample included two groups: Group A (136) received vortioxetine, while Group B (67) received SSRIs/SNRIs. Pregabalin (75 mg/day) was added to

both groups, with a potential dosage increase to 150mg/day for inadequate responders after 12 weeks. Treatment response was assessed with VAS, SF-MPQ, HAM-A and HAM-D scores at 12, 24, 36 and 52 weeks. Stepwise logistic regression analysis was used to predict treatment response.

**Results:** 84 (61.8%) BMS patients in Group A and 39 (58.2%) in Group B showed treatment response. Group A reported a faster onset of action compared to Group B (44.8% *versus* 22.4% at time 1; p: 0.002\*\*) and lower adverse event rates (8.8% *versus* 20.8%; p: 0.001).

**Conclusions:** the addition of pregabalin to vortioxetine may be considered a potential treatment option for BMS. Further research is needed to optimize personalized treatment approaches for BMS patients.

## DIAGNOSTIC AGREEMENT IN SBD: IS ELISA TRUSTY AS DIF? A SYSTEMATIC REVIEW AND META-ANALYSIS

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**Aim:** this systematic review aims to assess the efficacy of Enzyme Linked ImmunoSorbent Assay (ELISA) as an alternative to Direct ImmunoFluorescence (DIF) in the diagnosis of Sub-epidermal Blistering Diseases (SBD).

**Methods:** a systematic literature search was conducted in accordance with PRISMA criteria. The PROSPERO registration code was CRD42022341891. PubMed, Scopus and Cochrane were used as search engines. Case-controls or cohort studies performing both DIF and ELISA tests on SBD patients were included. The Risk of Bias (RoB) was assessed using the Newcastle-Ottawa Scale (NOS) and evidence quality was evaluated using the GRADE system. Meta-analyses and Trial Sequential Analyses (TSA) were performed.

**Results:** qualitative synthesis accounted for 38 studies, while

the quantitative one for 37. Data from 35 studies for BP180 (2776 patients), 27 for BP230 (2097 patients), and 4 for Lam332 (365 patients) were analyzed. Meta-analyses revealed the superiority of DIF compared to ELISA test, with the following Risk Differences: BP180: 0.26 (95% CI 0.19-0.33, p <0.00001, I<sup>2</sup> 96%), BP230: 0.59 (95% CI 0.47-0.71, p <0.00001, I<sup>2</sup> 98%), Lam332: 0.82 (95% CI 0.70-0.94, p <0.00001, I<sup>2</sup> 89%). TSA supported the reliability of these findings. NOS rated 21 studies with high RoB and 17 with medium RoB.

**Conclusions:** diagnostic value of ELISA test in SBD is still questionable, whereas DIF remains the gold standard. ELISA may represent an adjuvant in the diagnostic process, especially as a tool for the follow-up of these patients, considering its lower invasivity.

## CURRENT KNOWLEDGE OF MRONJ SURGICAL MANAGEMENT: NARRATIVE REVIEW

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**Aim:** the study aims to provide an overview of current knowledge on the surgical management of Medication-Related Osteonecrosis of the Jaw (MRONJ).

**Methods:** the management of MRONJ is still highly debated. There are two distinguished methods for the management of MRONJ: conservative and surgical. The Italian Societies of Oral Pathology and Medicine (SIPMO) and of Maxillofacial Surgery (SICMF) expert panel have recently considered surgical management as a backbone of MRONJ treatment. The surgical approach decision remains patient-specific and ranges from superficial bone debridement to radical interventions based on careful clinical judgment. Due to the difficulty in achieving complete resolution with surgical approach alone, several adjunctive modalities are proposed.

**Results:** these modalities can be divided into two categories.

1) Adjuncts improve wound healing such as HyperBaric Oxygen (HBO), PhotoBioModulation (PBM), Ozone therapy, and Autologous Platelet Concentrates (APCs).

2) Adjuncts provide better visualization of limits between necrotic and vital bone, including fluorescence-guided surgery. L-PRF alone or in combination with other therapies is the most studied adjunct and shows promising results. Most studies report positive outcomes based on stage improvement and/or wound healing of MRONJ with displaying limited follow-up.

Further studies on these adjuncts, in particular L-PRF, are still needed to show long-term efficiency and consider MRONJ risk assessment in order to set these highly costly and strictly available adjuncts as routine clinical practice.

## ORAL MANIFESTATIONS OF PAPILLOMA VIRUS: REVIEW OF THE LITERATURE

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**Aim:** the human papilloma virus is part of a group of heterogeneous DNA viruses called papillomaviridae. The goal of the work is analyze the implications of the Papilloma Virus in oral lesions.

**Methods:** a bibliographic review has been carried out in the PubMed /MEDLINE, Dentistry & Oral Sciences Source and Dialnet databases with studies published in the last five years in which the relationship between Papilloma Virus and oral lesions is investigated.

**Results:** many works have demonstrated the relationship of

HPV 6 and 11 with benign oral lesions and high-risk HPV, particularly HPV 16, with carcinomas of the head and neck. Of all the articles found on the subject, a total of 60 articles were selected.

**Conclusions:** many works have demonstrated the relationship of HPV 6 and 11 with benign oral lesions and high-risk HPV, particularly HPV 16, with carcinomas of the head and neck. Although infections with this virus are frequent in the oral cavity, this field of medicine is still under study.

## ODONTOGENIC MYXOMA IN PAEDIATRIC PATIENT: A CASE REPORT WITH LITERATURE ANALYSIS

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**Aim:** according to the WHO, odontogenic myxomas are benign but infiltrative odontogenic lesions. Literature lacks consensus regarding their treatment in paediatric patients as it is still difficult to determine whether a radical approach is necessary to avoid recurrences. This study aims to report a case of odontogenic myxoma in a 12-year-old patient and to discuss diagnosis and treatment options with a review of the literature.

**Methods:** authors collected clinical data of a 12-year-old patient treated at the Complex Unit of Odontostomatology of the University of Bari 'Aldo Moro' with surgical enucleation and curettage in general anesthesia and performed a review of the literature of odontogenic myxomas in paediatric patients from 1987 to 2024, including age, localization, therapy, follow-up and recurrences.

**Results:** 33 cases were included, 6 in the mandible and 27 in maxilla. Age ranged from 11-months-old to 17-year-old. In 30 cases authors adopted a radical surgery (enucleation/resection with curettage), in only 3 cases a conservative surgery. 3 patients radically treated showed recurrences at the follow-ups, 3 were not specified and 27 no recurrences. In our case odontogenic myxoma diagnosis was histologically confirmed and no complications or recurrences were detected at the follow-up.

**Conclusions:** this report of a paediatric patient surgically managed without complications or recurrences and the literature review we performed should alarm clinicians about the importance to adopt a correct treatment decision to minimize the risk of recurrences in children.

## COVID-19 DISEASE AND NECROTIZING OSTEOMYELITIS OF JAWS: A SYSTEMATIC REVIEW

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**Aim:** osteomyelitis is a condition marked by an inflammatory process that impacts both bone and bone marrow leading to cell death and to the creation of bone sequestrum. Literature over the past five years has documented instances of osteomyelitis following infections of SARS-CoV-2. This systematic review aims to explore the link between osteomyelitis of the jaw and COVID-19 infections.

**Methods:** this review is published in PROSPERO (registration: CRD42024526257) and carried out adhering to the PRISMA guidelines, systematically analyzing literature from 2020 to 2024 sourced from databases including Medline, Embase, Scopus, and Web of Science.

**Results:** 42 articles were selected, detailing 201 Cases of Necrotizing Osteomyelitis of the Jaw related to COVID-19 (CNOJ).

The demographic breakdown included 195 males (74.4%) and 67 females (25.6%), with a median age of 52.7 years. The interval between the diagnosis of COVID-19 and the onset of CNOJ symptoms varied from 1 day to 12 months. 182 cases (90.5%) involved maxillary necrotizing osteomyelitis, with nearly half showing sinus involvement (49.4%). The mandible was affected in 19 cases (9.5%). Mucormycosis and aspergillosis emerged as the predominant fungal infections, identified in 103 (51.2%) and 50 (24.9%) cases, respectively.

**Conclusions:** individuals with pre-existing health conditions who have been treated for COVID-19 are at an increased risk of developing necrotizing jaws osteomyelitis. This condition presents a diagnostic and therapeutic challenge for dental professionals, who may often be the first to diagnose these cases.

## SALIVARY BIOMARKERS AS DIAGNOSTIC TOOLS FOR NEUROLOGICAL DISEASES: A SYSTEMATIC REVIEW

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**Aim:** the present systematic review aims to answer to the question: “Is there evidence that support the use of salivary biomarkers for diagnosis of neurological disease?”.

**Methods:** a multiple database research (Medline, Scopus, WOS) of the scientific English literature published after 2000 was set. The entry terms “saliva” was combined through the Boolean indicator “AND” with “Neurological disease”, “Parkinson”, “Alzheimer” and “ALS”. Final eligibility was assessed through full-text evaluation, according to the exclusion and inclusion criteria. Data from each study were summarized in three Excel tables. The quality of the studies was assessed by a checklist proposed by the NIH. Studies having 80-100% of “yes” answers were labeled as “good”, those having 50-70% were classified as “fair” and studies with less than 50% were

defined as “poor”. Level of evidence was assessed using the classification of the Oxford Center for Evidence-Based Medicine levels for diagnosis.

**Results:** studies were included in the review. Twenty (83%) out of 24 are case-control studies, the remaining 4 (17%) are case control studies. Selected papers showed 21 salivary biomarkers with a statistically different concentration between patients with neurological diseases and control groups. Four “poor” quality papers (17%) were identified, and the remaining (83%) had a “fair” quality.

**Conclusions:** according to this systematic review, other studies are needed to improve the quality of scientific evidence and to correlate salivary biomarkers with the presence of neurological diseases.

## GINGIVAL DISEASES NON-PLAQUE INDUCED: MINI-REVIEW

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**Aim:** this abstract aims to review various articles on non-plaque-induced gingivitis and expose our clinical experience at University of Cagliari’s dental clinic and at Meyer University Hospital. The non-plaque-induced gingival lesions are often manifestations of systemic conditions, but they may also represent pathologic changes limited to gingival tissues. Subsequent plaque accumulation can make these situations worse.

**Methods:** a total of 10 literatures were collected from several electronic data sources using the combination search keywords “gingival diseases”, “non-plaque induced”, “inflammation”, “oral medicine”. Subsequently we report a clinical case of a patient admitted to the Medical Pediatrics A department of the Meyer University Hospital, the 14 yo patient undergo a renal transplant due to drug-resistant renal syndrome, also require a pharmacological immunosuppressor therapy, anti-hy-

pertensive calcium channel-blockers. The use of both these drugs particularly if used in association leads to the onset of a clinical picture of variable entity, characterized mainly by a desquamative gingival lesions.

**Results:** according to what emerges from the literature, a classification is based on the etiology of the lesions and includes Genetic and Developmental disorders; Specific infections; Inflammatory and immune conditions and lesions; Reactive processes; Neoplasms; Endocrine, Nutritional, and metabolic diseases; Traumatic lesions; and Gingival pigmentation.

**Conclusions:** in gingivitis non-plaque-induced by local predisposition factors and systemic modification factors for this reason they don’t heal with the smoke removal plaque, but still the therapy is preventive with an appropriate oral hygiene program both professionally ad quell ad at home.

## PREDICTORS OF MALIGNANT TRANSFORMATION IN PROLIFERATIVE VERRUCOUS LEUKOPLAKIA

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**Aim:** Proliferative Verrucous Leukoplakia (PVL) is a potentially malignant disorder with a high rate of malignant transformation. There is no evidence in the literature regarding the predictors of malignant transformation. The aim of the present study was to analyze the role of clinical, histological, and molecular predictive factors involved in oral cancer transformation of PVL.

**Methods:** the study population consisted of 44 consecutive patients with PVL selected based on recent clinical and histological criteria. We included only patients with a minimum follow-up of 12 months, and all patients performed one or more biopsies during the follow-up. Statistical analysis was used to evaluate the role of the following variables related to the risk of malignant transformation: age, sex, smoking, coexistence of

erythematous areas, identification of band-like inflammatory lymphocytic infiltrate in the early phases of PVL, dysplasia, Candida superinfection, ki67 and p53 expression, burning symptoms, and concomitant local or systemic immunosuppressive therapy.

**Results:** the patients were followed up for  $84 \pm 58.46$  months. Malignant transformation occurred in 20 patients (45.5%), 11 of whom developed secondary tumors (55%). Multivariate analysis showed that a band-like inflammatory lymphocytic infiltrate was an independent variable significantly related to the risk of malignant transformation (HR 3.08;  $p < .02$ ).

**Conclusions:** the presence of a band-like inflammatory lymphocytic infiltrate in the early stages of PVL may play a role in the pathogenesis of the malignant transformation of PVL.

## ANALYSIS OF ORAL CANDIDIASIS RISK PROFILE: RETROSPECTIVE STUDY

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**Aim:** to observe the risk profile of patients with a diagnosis of oral candidiasis.

**Methods:** the department database was searched retrospectively between 2022 and 2023 for patients with a diagnosis of oral candidiasis. The collected data were age, gender, smoking habit, drinking habit, presence of removable prostheses, location and type of the lesions, type of infection, and presence of Oral Potentially Malignant Diseases (OPMDs).

**Results:** the database search revealed a total of 30 oral candidiasis patients (20 females and 10 males) with an average age of 63.83. A total of 18 patients (60%) were with a smoking habit (8 ex-smokers and 10 smokers). The average smoking amount was 20 packyears in ex-smokers and 23 packyears in smokers. Only 16.7% ( $n = 5$ ) were drinkers. A total of 10 pa-

tients (33.3%) were cancer patients with history of radiotherapy ( $n = 2$ ), chemotherapy ( $n = 3$ ), or corticosteroids ( $n = 3$ ). OPMDs were present in 7 patients (23.3%). A total of 10 patients (33.3%) were using removable prostheses. Candida albicans was detected in 90% of patients ( $n = 27$ ). The burning sensation was the most clinical presentation in 60% of the patients ( $n = 18$ ). The tongue was the most affected site ( $n = 19$ ; 63.3%), then buccal mucosa, and hard palate. Topical treatments were effective for complete resolution in 96.7% of patients ( $n = 29$ ).

**Conclusions:** several risk factors seem to be associated with oral candidal infection that need to be further studied including smoking habit and amount, history of cancer treatments, OPMDs history, and presence of removable prostheses.

## EXPRESSION OF TISSUE MARKERS IN ODONTOGENIC KERATOCYSTS ASSOCIATED WITH RECURRENCE RISK

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**Aim:** Odontogenic KeratoCysts (OKCs) linked to Nevoid basal cell carcinoma syndrome (NBCCS) exhibit a more aggressive nature and a higher risk for recurrence compared to non-syndromic OKCs. Stromal MyoFibroblasts (MFs), identified by their expression of  $\alpha$ -Smooth Muscle Actin ( $\alpha$ SMA), desmin, and caldesmon, along with MetalloProteinases (MMPs), play a crucial role in ExtraCellular Matrix (ECM) remodeling. This retrospective study analyzed the immunohistochemical expression of MMP-7, MMP-9,  $\alpha$ SMA, caldesmon, and desmin in NBCCS-OKCs compared to recurrent and sporadic OKCs.

**Methods:** histological tissues obtained from surgical enucleation of OKCs from 36 patients were analyzed. The paraffin-embedded histological sections underwent incubation with

marker antibodies, and an assessment of immunoreactivity was conducted using a semi-quantitative scoring system.

**Results:** densitometric analysis revealed a markedly elevated expression of  $\alpha$ SMA, caldesmon, MMP-7, and MMP-9 in NBCCS-associated OKCs compared to non-syndromic counterparts ( $p < 0.001$ ). Conversely, desmin exhibited a non-significant increase in expression in non-syndromic OKCs compared to NBCCS-associated specimens, where desmin expression was either minimal or absent.

**Conclusions:** NBCCS-OKCs exhibited a broader presence of MFs compared to other subtypes of OKCs. Additional research is warranted to investigate whether variations in marker expression correlate with distinct clinical behavior.

## CLINICAL AND RADIOLOGICAL FINDINGS IN MRONJ: ANALYSIS OF STAGING SYSTEM

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**Aim:** this study aimed to compare classifications provided by the Italian Society of Maxillofacial Surgery (SICMF)/Italian Society of Oral Pathology and Medicine (SIPMO) and the American Association of Oral and Maxillofacial Surgeons (AAOMS) in the MRONJ pathology.

**Methods:** a single-center retrospective study was designed enrolling patients with a diagnosis of MRONJ. Anamnestic, clinical and radiological data were recorded. Two investigators analyzed the databases separately to stage each patient's MRONJ according to the AAOMS or SIPMO/SICMF classification, respectively.

**Results:** the study included 74 patients (51 F, mean age 70 SD 11). Bisphosphonates were used by 38 patients (40% oncological) and monoclonal antibody drugs were used by 36 pa-

tients (88% oncological). The predominant clinical signs were mucosal fistulae (93%) and bone exposure (73%), while focal osteosclerosis (95%) was the primary radiological indicator. Our results showed a discordance in the 38% of cases between the two classifications; in particular, 71% of these cases were downstaged in the SICMF/SIPMO classification compared to the AAOMS one.

**Conclusions:** the results of this study emphasize the importance of analysing the clinical and radiological features of MRONJs by means of CBCT examination and, given the possible discordance between the two staging systems, suggest the analysis of both methods for a personalized diagnostic-therapeutic approach.

## BLUEPRINT PERSONA AND ICT INTERVENTIONS FOR UNMET NEEDS IN BURNING MOUTH SYNDROME CARE

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**Aim:** this study aimed to create a Blueprint Persona for Burning Mouth Syndrome (BMS) patients, focusing on unmet needs that digital solutions can address.

**Methods:** an interdisciplinary focus group formulated the BMS Blueprint Persona by discussing clinical data and survey results regarding education, informatics skills, and perceived unmet needs, collected from 500 BMS patients between 2022 and 2023.

**Results:** the BMS Blueprint Persona, named Anna, represents a typical BMS patient profile: a young-old woman with limited computer skills who experiences anxiety, depression, and insomnia, has memory issues leading to medication adherence challenges, is obese due to overeating, and spends much time

watching TV at home. Anna's primary concern is receiving inadequate treatment and not achieving disease remission. She also feels misunderstood and lacks family support. This persona reveals several areas where Information and Communication Technology (ICT) interventions, like telemedicine, anxiety and insomnia treatment, drug adherence improvement, and nutritional and lifestyle guidance, could be beneficial. The focus group also outlined the essential features for a prospective mHealth app to meet BMS patients' diverse needs.

**Conclusions:** the development of the BMS Blueprint Persona successfully identified patient characteristics and unmet needs, offering valuable insights for creating personalized diagnostic-therapeutic pathways and digital health solutions for BMS.

## UNSUPERVISED CO-CLUSTERING REVEALS METABOLIC PATHWAY ABERRATIONS IN RECURRING OSCC

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**Aim:** recent advancements in high throughput technologies have improved our understanding of Head and Neck Squamous Cell Carcinoma (HNSCC) Heterogeneity. Reprogramming cellular metabolism is a core hallmark of cancer. Hence, targeting cellular metabolism can have therapeutic potential, and identifying clinically significant subgroups based on metabolic profiles remains crucial. Biclustering was recently applied to discover homogeneous subgroups based on gene expression. This study aims to apply biclustering algorithms to identify different subgroups in HNSCC based on metabolic pathways, potentially influencing targeted therapy.

**Methods:** metabolic pathways were obtained from the KEGG pathway database. Clinic-pathological data along with matching gene expressions were downloaded from the TCGA database. Spectral biclustering has been applied to group data into clusters based on both its row (patients) and column (gene

expression) patterns simultaneously. Disease-Free Survival (DFS) was investigated as outcome. DEseq2 was performed to highlight differently expressed genes between the two clusters.

**Results:** our analysis included 150 patients and 195 genes. Biclustering resulted in 2 clusters (C0 = 94 and C1 = 56). Patients in C0 experienced a worse DFS, HR = 1.989, p-value = 0.031. Sixteen genes showed statistically significant differences in DEseq2 analysis (adjp-value <0.05). HSD11B1 was upregulated in C1 (log2FC = 1.2), while CEL was downregulated in C0 (log2FC = -1.1).

**Conclusions:** unsupervised biclustering successfully revealed the existence of a group of patients at increased risk of relapse. Sixteen genes differed significantly between the identified clusters and could potentially serve as biomarkers or targets for future monitoring or therapies in relapsed HNSCC.

## EFFECTIVENESS OF HEPILOR MOUTHWASH IN SYMPTOMATIC OLP: A RANDOMIZED VS PLACEBO TRIAL

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**Aim:** the aim of the study is to evaluate the efficacy and safety of Hepilor mouthwash in treating the painful symptoms of OLP (Oral Lichen Planus). Hepilor Mouthwash is a medical device that protects and repairs the buccal mucosa thanks to Zinc-L-Carnosine and Sodium Alginate.

**Methods:** the inclusion criteria are symptomatic patients with a clinical and histological diagnosis of OLP. The exclusion criteria are asymptomatic patients, patients who received any other treatments like corticosteroid, antifungal or laser photobiomodulation in the last 3 months and patients who have clinical signs of oral candidiasis.

This study evaluates a single group of 10 patients who are exposed in a crossover design to two distinct treatments (A and B), which may include Hepilor mouthwash or placebo. Patients

are instructed to use 10 ml of product three times a day after meals for 4 weeks. After an appropriate 4-week wash-out period, patients are prescribed treatment A/B for another 4 weeks. Patient discomfort is assessed using the VAS scale.

**Results:** the average VAS score of group A treated with placebo increased from 2.5 to 3, and that of group B increased from 2.7 to 3. In contrast, the average VAS score of group A treated with Hepilor decreased significantly from 4.2 to 2.2; in group B decreased slightly from 2.5 to 2.2.

**Conclusions:** the administration of Hepilor mouthwash resulted in a reduction of the average VAS in the treated groups. However, the reduction was statistically significant (with a difference of 2 being observed) only in the group that was treated with Hepilor first.

## MARSUPIALIZATION AS A CONSERVATIVE TREATMENT FOR A LARGE CYST OF THE RAMUS: A CASE REPORT

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**Aim:** the aim of this study is to describe the most appropriate diagnostic and treatment approach for recurrent cystic lesion of significant size.

**Methods:** G.F., age 40, presented a persistent pain and swelling due to a recurrent large lesion in the mandibular branch, occurring after 14 years. The lesion, exhibiting multilocular hypodensity on radiographic examination, involved both the body and mandibular ramus till condylar process. Firstly, an incisional biopsy has been performed. Secondly, marsupialization and drainage canula have been inserted. Subsequently, after a year, a third sur-

gery for enucleation has been performed after clinical stabilization and radiological evidence of lesion regression. The patient has been followed up post-surgery at 2 weeks, 6 months, and 1 year.

**Results:** after treatment over a clinical course lasting 3 years, the patient exhibited complete healing and radiographic resolution of the lesion.

**Conclusions:** the proposed treatment approach allows for a less invasive treatment of the lesion. It consists as an alternative to mandibular resection and reconstruction, enabling both the reduction and resolution of the condition.

## DIAGNOSTIC AND SURGICAL MANAGEMENT OF MANDIBULAR PGCG: A CASE REPORT

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**Background:** Peripheral Giant Cell Granuloma (PGCG) is a benign proliferative lesion that emerges in response to chronic tissue insult attributable to irritants and mechanical trauma. Characterized as an exophytic growth exhibiting nodular enlargement, with dimensions ranging from a few millimeters to several centimeters. It manifests with greater frequency in the mandibular region compared to the maxillary, predominantly observed between the fourth and sixth decades of life. Clinically, PGCG presents with a red to bluish hue, and management typically involves surgical resection.

**Case presentation:** in December 2023, a 44-year-old man presented to the Department of Oral Pathology at IRCCS HSR-UNISR with a lesion located on the right posterior gingival mucosa. An initial incisional biopsy was undertaken during this

visit. Histopathological analysis confirmed the diagnosis of Peripheral Giant Cell Granuloma (PGCG). The definitive excision was performed in March 2024 with a cold blade technique, followed by osteotomy of the adjacent alveolar crest and extraction of tooth 4.6. Postoperative care included a 15-day course of antibiotic therapy and antiseptic regimen. Histological examination post-surgery reaffirmed the diagnosis of PGCG.

**Conclusions:** this case underscores the critical role of incisional biopsy in the diagnostic process of oral lesions, offering predictive insight into the definitive histopathological outcome. Incisional biopsy represents a reliable method for evaluating the nature of oral lesions and is instrumental in achieving a definitive diagnosis.

## EROSIVE LICHEN PLANUS AND REMOVABLE DENTAL PROTHESIS: A CASE REPORT

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**Aim:** this case report investigates a possible correlation between erosive lichen and removable dental prosthesis.

**Methods:** a 77-years-old-female patient was visited for erythematous lesion on anterior maxillary vestibular mucosa, with a bullous and papillomatous appearance, which occasionally hurt, and bled in some points. She did not show any systemic symptoms, and the anamnesis was positive to psoriasis. The application of antimycotic did not improve the situation of the lesion, thus the previous suspect of candidosis due to the prosthesis was discarded and the patient was suggested not to wear the prosthesis. Since the gained enhancement, the prosthesis was modified in the correspondent areas, and the lesion remains stable. After 2 months, the lesion was again edematous with bleeding ulcers, hence we recommend not to wear

the prosthesis. Because of the absence of improvement's signs, a biopsy was planned.

**Results:** the incisional biopsy was performed on a more representative area of the lesion, and the histopathological examination diagnosed erosive oral lichen planus.

**Conclusions:** lichen planus is a chronic mucocutaneous pathology, with unknown etiology, usually mediated by an autoimmune process. Since there may be a correlation with the employed materials of the prosthesis, a possible association was supposed. Considering that the patient is positive to psoriasis, there might be a correlation, because both are autoimmune diseases. For the lesion's treatment, a corticosteroids therapy has been administered, and allergologic tests for dental materials have been required.

## ORAL GRAFT-VERSUS-HOST DISEASE AND SECONDARY ORAL CANCER: A CASE REPORT

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**Aim:** oral Graft-Versus-Host Disease (GVHD) is a major complication of allogeneic Hematopoietic-Cell Transplant (alloHCT). The clinical manifestations of chronic oral GVHD comprise lichenoid lesions, hyperkeratotic plaque, pain, dry mouth, oral ulcerations, and oral mucositis. Additionally, one of the significant potential long-term risks following alloHCT is the substantially increased likelihood of developing secondary cancers, including Oral Squamous Cell Carcinoma (OSCC).

**Methods:** we report a case of a man affected by GVHD who attended the Oral Medicine Unit (AOUP P. Giaccone Palermo, Italy).

**Results:** a 55-year-old male patient was referred in 2021 to our unit for GVHD oral lesions secondary to alloHCT for chronic lymphocytic leukemia diagnosed in 1999. An incisional biopsy

was performed of one of the palatal erosive lesions, and microscopic analysis revealed a lymphoplasmacytic inflammatory infiltrate in the chorion without dysplasia, confirming a suspected diagnosis of oral GVDH. A strict clinical follow-up was considered necessary, but the patient failed to attend follow-up appointments, and during a clinical examination in 2022, an ulcerated lesion was found on the palate. An incisional biopsy was performed, and microscopic analysis revealed features of OSCC. The patient underwent surgical treatment and oncological management, and he is currently in follow-up.

**Conclusions:** effective management of patients with oral GVHD necessitates close monitoring for OSCC screening. Histopathological confirmation of any suspicious oral lesions is crucial to improve patient outcomes.

## SEQUESTRATION PROMOTED BY OZONE TOPICAL APPLICATION IN BRONJ: A CASE REPORT

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**Aim:** this case report describes a case where stabilized ozone gel topical application promotes the formation of a sequestrum and facilitates clinical healing.

**Methods:** an 85-year-old female patient, diagnosed with osteoporosis, had been undergoing antiresorptive therapy with alendronate for 7 years when she developed Bisphosphonate-Related Osteonecrosis of the Jaw (BRONJ) in September 2021 following a dental extraction (4.6). The patient remained asymptomatic but presented a 1 cm bone exposure at the alveolar process in the right hemimandible (stage 1a SIP-MO/SICMF stage 1 AAOMS). Initially, right marginal mandibular resection was proposed as the first therapeutic solution; however, it was discouraged by the general practitioner. Consequently, the patient was enrolled in a follow-up program to

monitor the progression of osteonecrosis. After a dental CT scan, the patient underwent weekly topical ozone therapy, with perceived pain assessed using a Visual Analog Scale (VAS) and documented by clinical photos.

**Results:** after 16 applications, spontaneous and painless sequestration of necrotic bone occurred, which was subsequently removed. In this patient, the therapeutic approach with ozone gel proved to be more effective than the wait-and-see approach employed during the initial two years, resulting in rapid and resolution of the condition with painless.

**Conclusions:** future research could investigate whether this treatment could accelerate the self-sequestration process, evaluating the efficacy of this non-invasive therapy in patients ineligible for surgical intervention.

## PERSISTENT PALATAL LESION IN A CHRONIC MYELOID LEUKEMIA PATIENT ON IMATINIB: A CASE REPORT

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**Aim:** Chronic Myeloid Leukemia (CML) is a hematological malignancy characterized by the abnormal proliferation of myeloid cells. Imatinib, a tyrosine kinase inhibitor, has revolutionized the treatment of CML since its introduction. Despite its efficacy, there is emerging evidence suggesting various Adverse Drug Reactions (ADR) associated with long-term imatinib therapy, including oral manifestations. Here, a case is described of a patient with CML undergoing imatinib therapy who presented with a persistent oral lesion.

**Methods:** a 48-year-old female patient with CML, receiving imatinib 400 mg per day since 2009, was referred to the Oral Medicine Unit of the Hospital P. Giaccone in Palermo in February 2024 for the presence of an oral lesion. Clinical history and features were recorded.

**Results:** the patient reported lesion onset over a year ago, remaining asymptomatic and stable during routine dental exams. Examination revealed a diffuse and symmetrical blue-grey pigmentation on the palatal mucosa. Subsequently, additional worsening ADRs including severe asthenia, ocular hemorrhages, and altered hematological levels were referred to the oncologist. Consequently, Imatinib was discontinued as a dechallenge measure. Upon bimonthly clinical oral reevaluation, the lesion persisted.

**Conclusions:** based on medical history and findings, a clinical diagnosis of Imatinib-related oral pigmentation was posed. Given the drug dechallenge and persistent lesion, ongoing follow-up is decisive to assess resolution. Further investigation is needed to understand oral imatinib manifestations.

## ORAL MANIFESTATIONS AS A DIAGNOSTIC SIGNS OF CROHN'S DISEASE: CASE REPORT

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**Aim:** approximately 47% of patients with Inflammatory Bowel Diseases (IBD) exhibit extra-intestinal manifestations and the involvement of oral mucosa may precede, occur concurrently, or follow the onset of abdominal symptoms. It is more common in young-aged males.

**Methods:** in this study, a case of 18-year-old caucasian male who referred to our department with oral lesions as initial manifestations of Crohn's disease.

**Results:** the patient's medical history was negative for other diseases. Intraoral examination revealed painful ulcerative lesions with hyperplastic margins involving oral vestibule and alveolar mucosa of the lower jaw at left side and the lateral border of the tongue at the same side. A cold blade incisional biopsy was performed, and histopathologic analysis showed

"ulcerative mucosa with intense chronic granulomatous inflammatory reaction with a suggestion of considering the oral localization of IBD". A detailed blood analysis was requested, and the patient was referred to the gastroenterology department for further assessment. After performing esophagogastroduodenoscopy, ileocolonoscopy with multiple biopsies, Contrast-Enhanced UltraSound (CEUS), and Magnetic Resonance (MR) with and without contrast, a final diagnosis of early Crohn's disease was achieved.

**Conclusions:** the dental practitioner may present a unique role for diagnosing Crohn's disease, where the oral lesions may be the only clinical manifestations of disease in early stage. This may consequently lead to achieve early diagnosis, timely treatment, and ultimately a better outcome in affected patients.

## UNCOMMON EPIDERMOID CYST OF BUCCAL MUCOSA: CASE REPORT

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**Aim:** the aim of our study was to report the case of an uncommon swelling involving the right buccal mucosa of an adult patient.

**Methods:** a 73-year-old male with a medical history of high blood pressure, cardiovascular diseases and renal failure, was referred to the Oral Medicine clinic at Sapienza University, Rome, for an extensive but otherwise asymptomatic swelling on the right buccal mucosa; no history of surgery/trauma related to the lesion area was reported. Intraoral exam revealed a painless, oval-shaped 1.8 cm mass on the right buccal mucosa. A recently performed ultrasound showed a well-defined hypoechoic structure within the subcutaneous area. An excisional biopsy followed by histopathological examination was scheduled.

**Results:** following locoregional anesthesia, a linear incision

and a blunt dissection of the buccal mucosa/submucosa with laser and dissecting scissors was performed. The lesion was then exposed, released from the adjacent tissues and sent to pathology for further analysis. The surgical wound was closed with interrupted sutures.

Pathology report revealed a cystic cavity with keratinized squamous epithelium, keratin debris, no skin appendages, and a foreign-body giant-cell reaction. A diagnosis of Epidermoid Cyst (EC) was determined.

**Conclusions:** intraoral ECs are a rare finding accounting for >0.01% of all cysts, with the most common cases involving young adults and the floor of the mouth. Their development in buccal mucosa is considerably rare. Surgical excision with removal of the cyst capsule is their standard of care.

## TREATMENT OF GRANULOMATOUS CHEILITIS OF MIESCHER: A CASE REPORT

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**Aim:** to present the clinical and therapeutic approach for a 70-year-old female with Granulomatous Cheilitis of Miescher.

**Methods:** Melkersson-Rosenthal syndrome is a granulomatous disease that manifests itself with persistent swelling of the lips, fissured tongue and facial paralysis. Granulomatous Cheilitis of Miescher consists in only lips involvement. In this case, the patient reported a three-year history of lip swelling. She underwent incisional blade biopsy. A sample was taken from the lower lip and one from the upper lip. Histological examination confirmed the clinical diagnosis of Granulomatosis. The patient was treated with Dapsone 100 mg one tablet per day for five months, followed by Triamcinolone Acetonide injections (4 x 40 mg/1 mL) in the oral mucosa of the lips. Patient

underwent three sessions three weeks apart. The injections were performed under local anaesthesia. Four vials of Articain 4% and adrenaline 1:100.000 were used. She suspended Dapsone after the last injection of Triamcinolone Acetonide.

**Results:** after the first treatment session, there was a considerable improvement in swelling, which progressively decreased following subsequent sessions. The therapeutic approach adopted resulted in a great reduction of swelling.

**Conclusions:** we believe that the use of Triamcinolone Acetonide, off-label in Italy as reported in literature, combined with Dapsone, represents a valid approach to improve clinical signs and symptoms in patients with orofacial granulomatosis, including the rare Granulomatous Cheilitis of Miescher.

## NON-PLAQUE INDUCED GINGIVAL LESIONS: A CASE REPORT

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**Aim:** gingival diseases non-plaque induced are a variety of oral conditions that cause lesions in the periodontal tissues. Some immunological conditions, neoplastic lesions, hematopoietic disorders, drug-induced lesions and other systemic diseases could have clinical features resembling inflammatory conditions caused by accumulation of bacterial plaque and tartar. This report treats a case of a patient with chronic gingivitis refractory to periodontal therapy diagnosed with Mucous Membranes Pemphigoid (MMP) after biopsy.

**Methods:** an old female patient came to our observation with a painful gingival inflammation and massive plaque deposits. Scaling, curettage and oral hygiene instructions were first performed. At the next visit after 14 days the oral hygiene improved but the gingivitis persisted, and some ul-

cers manifested. Two incisional biopsies in gingival areas of meaningful clinical aspect were performed. The diagnosis of MMP was made and the therapy adopted consisted of cycles of topical and systemical subadministration of propionate clobetasol.

**Results:** the patient showed a significant pain reduction. The regression of the inflammation was clear, and the ulcers were in the way of healing. The quality of life of the patient gradually improved permitting a better execution of oral hygiene proceedings and the possibility to vary the diet.

**Conclusions:** the gum is the site of many lesions, not only associated to bacterial inflammation. It is important to implement a correct diagnostic procedure in order to identify the genesis of the condition.

## SURGICAL REMOVAL OF A LINGUAL LYMPHANGIOMA: A CASE REPORT WITH 13-YEARS FOLLOW-UP

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**Aim:** Lymphangioma is a benign vascular neoplasm resulting from abnormal proliferation of lymphatic vessels; it has a low global prevalence and infrequent localization on the tongue. Characterized by the formation of dilated and ectatic lymphatic channels, this pathology represents an alteration in the morphogenesis and differentiation of these vessels during embryonic development. The aim is to demonstrate how surgical removal of the lesion represents the gold standard for resolving the condition.

**Methods:** following symptoms such as pain and difficulty in chewing in a 31-year-old patient, a lymphangioma of soft-elastic consistency is diagnosed on the dorsal surface of the left side of the tongue. A surgical excision procedure is performed followed by closure of the surgical flap with 3.0 sutures. Sub-

sequently, histopathological analysis of the neoformation is carried out to confirm the suspected diagnosis.

**Results:** the biopsy analysis confirms the diagnosis of lymphangioma, and the surgical procedure is successfully completed without intraoperative complications. The patient shows rapid postoperative recovery with absence of painful symptoms and eutrophy at the surgical site, and is enrolled in a follow-up protocol at 3, 6, 12 months, and subsequently annually up to 13 years. At 13 years, tissue normotrophy and absence of recurrence are noted.

**Conclusions:** surgical removal represents the therapeutic option of choice for patients with lingual lymphangioma, providing symptomatic relief and improving quality of life.

## TWO SYMMETRICAL ORAL LESIONS IN AN HIV+ PATIENT: ORAL CANCER AND PRECANCER

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**Aim:** the aim of this report is to present a peculiar case to highlight the significance of early diagnosis of oral lesions in patients at high systemic risk, in order to ensure a favorable prognosis for the patient.

**Methods:** a 60-year old male patient, with a history of 40 cigarettes pack/years and HIV+, arrived at the Oral Medicine Unit of the IRCCS HSR/UNISR in March 2023, presenting a lesion on the right para-commissural buccal mucosa. This lesion was initially diagnosed as papillomatous neoformation or traumatic fibroma. An excisional biopsy was performed for histopathological confirmation. In January 2024, the patient returned presenting a small erythroleukoplakia affecting the left para-commissural buccal mucosa. An excisional biopsy of this lesion was performed for further histopathological analysis.

**Results:** the histopathological evaluation of the lesion on the right mucosa detected the diagnosis of OSCC. Subsequent histopathological examination of the left side lesion identified keratosis with mild dysplasia and localized chronic lichenoid inflammation.

**Conclusions:** in patients HIV+ the prevalence of oral neoplasms related to HPV, particularly squamous cell carcinoma, poses a significant health concern. However, the patient's extensive smoking history likely contributed to the development of OSCC on the right buccal mucosa and a separate lesion with mild dysplasia on the left buccal mucosa. These cases underscore the critical role of early diagnosis and regular follow-ups in patients with high-risk profiles for oral malignancies.

## UNCOMMON SIALOLITHIASIS OF MINOR SALIVARY GLAND: CASE REPORT

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**Aim:** the study aims to demonstrate a rare clinical case of sialolithiasis of minor salivary gland in the upper lip.

**Methods:** a 65-year-old male was referred to our department due to the development of a painless swelling on the upper lip 6 months ago. The clinical examination revealed the presence of a hard mass in palpation on the upper lip with normal-looking mucosa and a diameter of 7 mm. The patient's medical history did not show any abnormality.

**Results:** a small incision with cold scalpel was performed and the mass was excised with the related salivary gland. The excised specimen was histologically analysed and it revealed the presence of a neoformation consisting of amorphous material with a laminar structure comprising material of a probably vegetal nature, confirming the compatibility of

the histological picture with the diagnosis of sialolithiasis.

**Conclusions:** sialolithiasis is the formation of stones, calculi or other minerals in the salivary glands' ductal system. Its pathogenesis is still unknown and is not associated with any systemic disorder. The stone is often formed by deposition of calcium-rich salts around central nidus that can consist of desquamated epithelial cells, foreign bodies, or bacteria and their products. The involvement of minor salivary glands is uncommon, and the most frequent sites are upper lip and buccal mucosa with relative predilection in middle-aged males. It is often asymptomatic and can cause swelling or tenderness in case of infection. Its management is achieved by surgical excision and long-term follow-up due to the possible recurrence.

## VIRTUAL REALITY FOR ALLEVIATION OF PAIN AND ANXIETY IN HEREDITARY ANGIOEDEMA PATIENTS

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**Aim:** a case series was conducted to explore the feasibility of using immersive virtual reality to manage pain and anxiety in patients with angioedema and dental anxiety in a clinical setting. Objectives included assessing the acceptability of the virtual reality system, the impact of the intervention on patient pain and anxiety, and its effect on the workflow of the dental team.

**Methods:** the researchers initially observed three dental patients in the Odontostomatology Department of San Sebastiano Hospital, Frascati, Italy. Potential environmental challenges were identified, and three patients with a history of acute angioedema attacks and dental anxiety were selected. The intervention was conducted by the research team, which assisted in placing a sanitized Head-Mounted Display (HMD) on the patients. The patients chose 360° virtual reality videos,

including a cartoon, a music video, and a TV show. The respective patients were analyzed intra-operatively using a Visual Analog Scale (VAS) to identify the level of virtual immersion and distraction.

**Results:** the mean score of anxiety was  $1.80 \pm 0.6$  points; the mean score of pain was  $1.98 \pm 0.3$ . Thus, confirming total distraction immersion. The results of the independent-sample t-test and ANOVA showed that the anxiety level of the tested patients was not statistically significant for gender.

**Conclusions:** this study underscores the importance of adopting a comprehensive and multi-faceted strategy that integrates thorough psychophysical assessments and effective anxiety control techniques. Such an approach is essential for enhancing the care of individuals coping with angioedema.

## METHOTREXATE-RELATED PLASMA CELL MUCOSITIS: TWO CASE REPORTS. A NOVEL, UNDESCRIBED ENTITY?

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**Aim:** Plasma Cell Mucositis of the oral cavity (PCM) is a very rare immunological disorder that manifests with variably looking erythematous patches usually reported in the mouth and that can extend to the upper airways.

It has been advocated hypersensitivity reaction against an unidentified antigen or a bacterial population localized in the oropharyngeal tract as a potential trigger.

Histologically this disease is characterized by a dense, subepithelial polyclonal infiltrate of mature plasma cells. In this study we aim to report two cases of PCM associated with methotrexate intake.

**Methods:** at clinical examination the patients showed a diffuse bilateral erythematous involvement of the buccal mucosa associated with multiple areas of ulceration. We collected data

from each patient, based on medical and pharmacological history. Both the patients took methotrexate. Subsequently, an incisional biopsy was performed and both histopathological and Direct ImmunoFluorescence (DIF) analyses were carried out.

**Results:** histopathology showed the presence of a dense subepithelial, inflammatory infiltrate composed predominantly of mature plasma cells consistent with Plasma cell mucositis of the oral cavity. The immunohistochemical analysis confirmed the diagnosis of PCM.

Lesions greatly improved after interrupting the use of methotrexate with the use of topical corticosteroid therapy. Recurrence was seen once methotrexate was introduced.

**Conclusions:** these cases highlight the need that clinicians should include this medication as a potential trigger for PCM.

## MANAGEMENT OF A RARE ODONTOGENIC KERATOCYST ASSOCIATED WITH DENTAL IMPLANT: CASE REPORT

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**Aim:** the Odontogenic KeratoCyst (OKC) is one of developmental odontogenic cysts that is characterized by exhibiting local aggressiveness and frequent recurrence. It is considered as the third most prevalent cyst, however, its association with dental implants is infrequent. The aim of the study is to present a case of OKC associated with dental implant.

**Methods:** a 68-year-old female referred to our department for the radiographic presence of a well-defined unilocular osteolytic lesion in relation to a dental implant localized in the lower left premolar area. The lesion was asymptomatic and was detected during a routine dental check. The associated implant displayed a normal grade of stability. The vitality test was positive for adjacent teeth. Following preoperative assessment,

complete surgical enucleation was performed with a simultaneous removal of the implant and regenerative approach utilizing Leukocyte- and Platelet-Rich Fibrin (L-PRF).

**Results:** the histopathological analysis confirmed the diagnosis of OKC. Due to the recurrence risk, periodic follow-ups were programmed. Clinical and radiographic evaluations at 6-month follow-up did not reveal abnormalities.

**Conclusions:** this case shows the feasibility of surgical enucleation with regenerative approach utilizing L-PRF in the management of OKC even in implant-associated scenarios. The association of OKC with dental implant may be due to a pre-existing lesion before implant placement or presence of residual dental lamina following tooth extraction or implant surgery.

## TRASFORMATION OF ORAL LICHEN PLANUS TO SQUAMOUS CELL CARCINOMA: A CASE REPORT

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**Aim:** to present a case of Oral Lichen Planus (OLP) with a malignant transformation of a patient who dropped out from periodic follow-ups.

**Methods:** we report a case of a woman who has attended our sector of Oral Medicine (AOUP P. Giaccone Palermo, Italy) with multiple lesions of the mouth.

**Results:** a 68-year-old caucasian woman presented at our sector in July 2010 complaining about several oral lesions. The clinical investigation showed the presence of heterogeneous lesions (i.e., reticular, plaque, bullous) on mucous membranes (i.e., tongue, lips, buccal mucosa). Due to the clinical presentation, a suspicion of OLP was raised. An incisional biopsy was performed; the diagnosis of OLP was confirmed by histological findings. Patient underwent a therapy with cortico-

steroids and periodic follow-ups, up to January 2012. In July 2023, the patient returned for a visit; clinical investigation highlighted the presence of several oral lesions reliable to OLP. Additionally, there was a roundish nodular lesion on the right lingual margin.

Based on the histological and radiological findings, the diagnosis of oral squamous cell carcinoma was confirmed. The patient was referred to Oncology Unit for staging and management. Up to date, the patient undergoes regular follow-up.

**Conclusions:** despite a low risk of malignant transformation, close follow-up screening of all patients with OLP is necessary to facilitate early detection of a malignant transformation. Patients' awareness should be raised after the diagnosis of OLP and, probably, at every follow-up.

## LARGE VASCULAR LESION OF THE TONGUE TREATED WITH DIODE LASER: A CASE REPORT

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**Aim:** lip and oral vascular lesions are characterized by a dark blue to violet color. Although these lesions are often asymptomatic, they can become a problem in the event of bleeding or in case of large lesions. The aim of this paper is to report the case of a 39-year-old woman with a large exophytic oral vascular lesion on the tongue and its treatment with a diode laser. The patient referred a feeling of encumbrance.

**Methods:** the treatment plan consisted in five sessions of 980 nm diode laser photocoagulation with a non-contact surgical tip with a variable intensity from 2 to 11 Watt. At the fourth session, internal photocoagulation was performed. During each

session, perfect analgesia was obtained by lingual nerve block. Postoperative analgesia was tumbling achieved with NSAIDs and Tramadol treatment.

**Results:** the therapy resulted in the complete regression of the lesion and the remission of the symptoms. The management of postoperative pain within this procedure can be as challenging as in the other treatment options (surgery, sclerosing agents).

**Conclusions:** for this patient, laser photocoagulation has shown to be effective and safe in treating oral vascular lesions. Photocoagulation with diode laser may represent a non-surgical treatment of these lesions.

## OSTEONECROSIS OF THE JAW IN A PATIENT TREATED WITH LENVATINIB: A CASE REPORT

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**Aim:** MRONJ is an adverse drug reaction described as the progressive destruction and death of jawbone in patients exposed to the treatment with antiresorptive or antiangiogenic medications, including tyrosine kinase inhibitors.

**Methods:** we report a case of a patient who was attended at the U.O.C. of Stomatology (A.O.O.R., Villa Sofia- Cervello of Palermo, Italy) for the presence of bone exposure in the 4th quadrant after 15 months of Lenvatinib therapy.

**Results:** in July 2023, a 64-year-old female patient was referred for the presence of bone exposure. The patient reported a history of right submandibular adenoid cystic carcinoma in 2018. In May 2022, the patient started therapy with Lenvatinib (24 mg orally once daily) for bone metastases. After 2 weeks, due to the development of severe oral mucositis, the

Lenvatinib dose was reduced to 20 mg once daily. After 2 weeks, the patient showed bone exposure in oral cavity; so, the oncologist referred the patient to our attention. Oral examination revealed a bone exposure at the level of 4.6. According to SIPMO-SICMF recommendation patient underwent CT scan, and the MRONJ stage 2 (SIPMO-SICMF) was confirmed. Patient underwent medical-surgical therapy, with dental extraction of 4.6 and necrotic bone curettage. Currently, the patient is in follow-up for 8 months and shows no recurrence.

**Conclusions:** due to the constant introduction of new drugs into the market, clinicians need to pay attention to oral health problems to reduce the MRONJ risk onset and consequently improve the quality of life of cancer patients.

## ORAL MELANOTIC MACULE: DIAGNOSTIC AND PERIODONTAL SURGICAL APPROACH

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**Aim:** to report the clinical approach and outcomes for a melanotic macule in the oral mucosa, highlighting the importance of precise diagnostic and therapeutic interventions.

**Methods:** a 50-year-old female patient, with a history of 20 IQOS cigarettes/day, arrived at the Clinical Unit of Oral Pathology of the IRCCS HSR-UNISR in March 2024 with a pigmented lesion identified on the upper gingiva. The lesion persisted for five years without observable alterations, displaying a consistent hue ranging from dark brown to black. An esthetic excisional biopsy of the lesion, sized 0.9 cm × 0.5 cm, was performed between teeth 1.1 and 2.1. The specimen was sent for histological analysis. A laterally coronally advanced flap was performed to reduce the risk of secondary gingival recession, using a 7/0 suture for opti-

mal wound closure and aesthetic outcomes. Post-operative care instructions, included CHX 0.12% mouth rinse and CHX 0.12 and hyaluronic acid gels applications, were provided with follow-ups for wound management and suture removal.

**Results:** histology confirmed the melanotic macule. The patient demonstrated excellent tissue healing, without any post-op issue, underscoring the efficacy of this surgical approach.

**Conclusions:** this case underscores the balance between diagnostic precision and aesthetic outcomes in treating oral melanotic macules in the anterior upper maxilla. This case emphasizes the necessity of targeted interventions and histological confirmation in managing such lesions and the importance of combining health and aesthetic consideration.

## IMATINIB-INDUCED MUCOSAL HYPERPIGMENTATION OF THE HARD PALATE: A CASE REPORT

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**Aim:** pigmented lesions of the oral mucosa include a spectrum ranging from benign conditions to malignant entities. A notable contribution to pigmentation is the use of certain drugs, including Imatinib mesilate, used for the treatment of Chronic Myeloid Leukemia (CML) and gastrointestinal stromal tumors. The objective of this study is to present hyperpigmentation within the oral cavity associated with the use of Imatinib.

**Methods:** 30-year-old Caucasian man was referred in March 2023 with history of CML on therapy with 400 mg/day of Imatinib for 10 years. An asymptomatic dark blue/grey pigmented area of the hard palate was found, with no evidence of soft palate extension and not whiten at pressure. The hyperpigmentation had already been present for 2 years without morphological changes. Considering the possible diagnosis of pigmenta-

tion Imatinib-related, no biopsy of the lesion was performed. A follow-up strategy was applied every 3 months to assess any differences in the clinical picture.

**Results:** since there were no changes after 3 checks and considering that the patient continued to take the drug, the possibility that hyperpigmentation is due to the drug is further confirmed. The patient will be monitored for another 8 months, reserving the possibility of a biopsy should doubtful clinical signs appear.

**Conclusions:** oral hyperpigmentation associated with Imatinib is considered benign and irrelevant, making interventions or drug suspension unnecessary. Therefore, it is necessary to know the correlation between drugs and oral manifestations to perform a correct differential diagnosis.

## PEMPHIGUS VULGARIS WITH ORAL INVOLVEMENT: A CASE REPORT OF MULTIDISCIPLINARY MANAGEMENT

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**Aim:** Pemphigus Vulgaris (PV) is a rare autoimmune disease characterized by formation of intraepithelial bullae that usually first involved the oral mucosa. The study reports a systemic PV case treated by multidisciplinary therapy.

**Methods:** a 60-year-old woman was referred to the Department of Clinical Specialistic and Dental Sciences, Marche Polytechnic University, complaining widespread oral ulcerations for one month. The intraoral examination showed multiple erosive and vesicular lesions involving oral and labial mucosa, palate, and tongue. To confirm the clinical diagnosis, an incisional biopsy and a Direct ImmunoFluorescence (DIF) examination of fresh perilesional tissue of the right cheek mucosa, was performed. Topical corticosteroid and immunosuppressive agents were administered, and

the patient was referred to dermatologic specialist.

**Results:** the histological analysis revealed an intraepithelial suprabasal acantholysis, the DIF showed pericellular epithelial IgG and C3 deposits, and the ELISA test detected the Anti-desmoglein 3 (IgG) autoantibodies circulation. A definitive diagnosis of systemic PV was made. The first-line therapy with Rituximab and Deltacortene, was administered. After 3 months, the oral lesions showed a remarkable improvement, allowing the corticosteroid reducing and the provisional interruption of monoclonal antibody infusion.

**Conclusions:** after the disease remission, a long-term follow up, monitoring the corticosteroid agents, the systemic complications and the serologic disease activity, providing supplementary local treatments, should be mandatory.

## ERYTHEMATOUS LESION OF THE HARD PALATE IN REACTION TO ORTHODONTIC MATERIAL. CASE REPORT

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**Aim:** overview of a case of erythematous lesion of the hard palate

**Methods:** 13-year-old male patient with asymptomatic erythematous lesion of the hard palate. A metal expander has been applied at a medical center, but it has been removed, assuming it was responsible. Once the expander was removed, the lesion remained, so the patient was sent to another dentistry department and a first incisional biopsy was performed which indicated a lichenoid lesion. The patient then took allergy tests for metallic materials that tested positive for Ni and Co.

**Results:** the patient underwent topical therapy with flucanide and miconazole that resolved the clinical situation. Upon suspension of topical therapy, the lesion worsened again. A new

incisional biopsy was performed for histological examination, direct immunofluorescence and spectrophotometry. The latter tested positive for Ca, Sb, Mo, Si, Mg, Na, I. The presence of metals in the tissues suggested the persistence of the lesion. Consequently, cytology was performed that revealed oral candidiasis. Laser-assisted excision of the lesion was proposed.

**Conclusions:** the potential risk of hypersensitivity due to metals used in Orthodontic Devices (OD) is highlighted. OD are considered removable and non-fixed devices, such as prosthetic ones which follow less restrictive regulations. However, OD remain in contact with the oral mucosa for several months potentially leading to allergic stomatitis.

## A CASE OF NIVOLUMAB-INDUCED BULLOUS PHEMPHOGOID: A CASE REPORT

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**Aim:** Immune Checkpoint Inhibitors (ICIs), such as Nivolumab, are monoclonal antibodies that are increasingly being utilized to solid and hematologic malignancies. They can cause several immune-Related Adverse Events (irAE), most of those cutaneously related. One rare adverse effect is the development of Bullous Pemphigoid (BP). We present a case of new-onset BP Nivolumab-related, with oral involvement and difficulties in clinical management.

**Methods:** a 63-years-old, underweight, woman affected by multimetastatic mucoepidermoid carcinoma of parotid treated with Nivolumab which was suspended due to suspected grade G3 skin toxicity. A few months later, the skin manifestations got worse and ichty lesions appeared on upper extremities and trunk. In oral tissues she developed diffuse desquamative gingivitis and an extended erosive lesion on

the left hard and soft hemipalate.

**Results:** two 3.0 mm punch biopsies were performed for evaluation by Hematoxylin and Eosin (H&E) and Direct ImmunoFluorescence (DIF), which confirmed the diagnosis of BP-ICIs related. The patient was under topical and systematic steroid therapy with limited benefits due to his systemic conditions (weight 43 kg, osteoporosis, dysphagia etc.). Despite this, a dedicated oral hygiene protocol and supportive therapies partially resolved the patient's discomfort.

**Conclusions:** due to the increasingly widespread use of PD-1/PD-L1 inhibitors, bullous-like mucocutaneous reactions to these agents are increasingly being reported. Considering the patient's general health conditions and underweight, we would like to point out the absence of a therapeutic protocol aimed at the complete resolution of the skin and oral lesions.

## UNCOMMON MANIFESTATION OF ORAL SYPHILIS IN A YOUNG WOMAN: A CASE REPORT

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**Aim:** syphilis is one of the most common sexually transmitted diseases, with an increasing incidence. The oral cavity could be involved in primary or secondary syphilis lesions. The two principal oral features of secondary syphilis are mucous patches and maculopapular lesions, although nodular lesions may rarely arise.

**Methods:** a 19-year-old woman presented to the Oral Medicine Section, CIR Dental School of Turin, with lesions on the tongue associated with lymphadenopathy for about 2 months. Intraoral examination revealed multiple nodular lesions on the dorsal tongue, painful on palpation. The patient also reported dysgeusia and fever. Recent blood tests showed an increase in Erythrocyte Sedimentation Rate (ESR) and C-Reactive Protein (CRP). Therefore, we decided to do an oral biopsy and serological tests for syphilis.

**Results:** the TPHA and VDRL laboratory tests were positive, confirmed by the anti-treponemal antibody value: the diagnosis of secondary syphilis confirmed by biopsy results. The patient was referred to infectious disease specialists, where she was treated with three injections of Diaminocillin. One month after the end of therapy, there was a remission of the oral lesions and the symptoms, although antibody levels remained high.

**Conclusions:** the presence of nodular lesions in oral syphilis is rare, it is important to investigate the sexual habits of patients whenever similar lesions are present. In cases of high-risk sexual contacts, serological tests for syphilis should be performed directly, avoiding unnecessary invasive interventions such as biopsy.

## PIEZOELECTRIC SURGERY, ER:YAG LASER SURGERY AND LLLT: A COMBINED APPROACH TO TREAT MRONJ

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**Aim:** Medication-Related OsteoNecrosis of the Jaw (MRONJ) is a drug complication that can occur in patients taking antiresorptive or antiangiogenic drugs. There is no widely accepted treatment. This study aimed to propose a combined surgical approach with a piezoelectric device and laser (Er:YAG for bone ablation and Nd:YAG laser for photobiomodulation), in a young patient with breast cancer under denosumab treatment, affected by spontaneous stage 3 MRONJ with maxillary sinus involvement.

**Methods:** after stopping Denosumab 6 months earlier, the patient was initially treated with drug therapy included oral amoxicillin (1 g x 2/day) and oral metronidazole (250 mg x 2/day) for 3 weeks and mouthwashes with chlorhexidine and hydrogen peroxide two or three times a day. As complete healing was not achieved the

patient was treated surgically performing partial osteotomy using a Piezoelectric device, vaporization of necrotic bone areas until bleeding bone was reached using an Er:YAG laser. LLLT applications using a Nd:YAG laser were performed starting from the day of surgery and then twice a week for four weeks.

**Results:** the patient reported no postoperative discomfort, with painkiller intake limited to the day after surgery. Total mucosal healing was observed without recurrences for more than 4 years after surgery.

**Conclusions:** according to our results, a combined surgical approach using a piezoelectric device and laser therapy is effective in managing patients affected by MRONJ, enhancing the clinical and biological advantages of these different techniques.

## ORAL METASTASIS FROM PRIMARY FOLLICULAR THYROID CANCER: A CASE REPORT

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**Aim:** Follicular Thyroid Carcinoma (FTC) is the second most common cancer of the thyroid, and it can be minimally or overtly invasive. We report here a rare case of metastasis spreading from thyroid glands to the oral region.

**Methods:** a 74-year-old-woman was referred to the Oral Medicine Section of the C.I.R. Dental School of Turin because of a newly formed lesion localized on the median portion of the maxillary alveolar ridge, which was described as a purplish-red, roundish, peduncled, elastic-hardening nodule with ulcerated areas. Excisional biopsy was performed and after 15 days the patient was found with a new polypoid, peduncled, fast-growing lesion developed on anterior-medium third of the right tongue lateral side. Intralesional excision along the implant base was performed.

**Results:** the anatomopathological evaluation found low-differentiated malignant neoplastic tissue in the gingival lesion and no differentiated tumoral tissue in the tongue lesion. These results were interpreted taking in consideration medical history of the patient, suffering from follicular thyroid carcinoma diagnosed in 2013 with multiple metastasis manifestations. The results of the oral biopsies were relatable to FTC.

**Conclusions:** exact incidence of metastatic cancer deposits in the oral region is not possible according to the routine examinations for metastatic tumours. The aim of this study is to emphasize how in some types of cancers there can be metastasis involving oral tissues and the importance of considering medical history of the patient during oral checks.

## EFFICACY OF BOTULINUM NEUROTOXIN A IN PERSISTENT IDIOPATHIC DENTOALVEOLAR PAIN

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**Aim:** Persistent Idiopathic Dentoalveolar Pain (PIDP) is a complex medical condition that can lead to physical and emotional distress. Currently, the management includes topical and/or systemic treatments. Recently, Botulinum NeuroToxin A (BoNT-A) has been suggested as a treatment option for relieving pain in patients with PIDP.

**Methods:** we present a case series of 9 patients diagnosed with PIDP. To treat them, we used BoNT-A 100 U diluted with saline solution. The dose ranged from 20 U to 50 U per session. Patients underwent further injections (50 U) monthly if pain, measured on Numerical Rating Scale (NRS), was still greater than 3 for 3 months. Pain severity and characteristics were recorded at four different time points: baseline (T<sub>0</sub>), after 1 month (T<sub>1</sub>), 2 months (T<sub>2</sub>) and 3 months (T<sub>3</sub>).

**Results:** the mean pain intensity (NRS) at baseline was 7±2. The latency period before the analgesic effect was at least 5-10 days after injection. Minor adverse effects were pain during injection, nausea, and muscular relaxation. NRS reduced to 4±3 at T<sub>1</sub>, to 3±3 at T<sub>2</sub> (p = 0.0144) and to 2±3 at T<sub>3</sub> (p = 0.0072). Discomfort while chewing, talking, and swallowing was also recorded.

**Conclusions:** the exact mechanism of BoNT-A's action remains unclear; it has proven to be effective in alleviating pain associated with numerous conditions such as migraine and trigeminal neuralgia. Our results confirm that BoNT-A seems to be a safe and effective treatment option for patients diagnosed with PIDP. Further randomized control trials are needed to define the optimal dosage and timing between injections.

## DNA METHYLATION ANALYSIS IN PROLIFERATIVE VERRUCOUS LEUKOPLAKIA: A CASE SERIES ANALYSIS

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**Aim:** the aim of the present study was to analyze the methylation profile in a series of patients who presented with Oral Squamous Cell Carcinoma (OSCC) concomitantly with multifocal Proliferative Verrucous Leukoplakia (PVL).

**Methods:** nine patients with OSCC with concomitant PVL lesions were selected. Two oral brushing samples were collected (one from OSCC and the other from PVL lesions in the contralateral mucosa). A panel of 15 genes (261 CpG islands) was used to compare the methylation profiles of PVLs (PVL-CA) and paired OSCC (CA). The samples were also tested using an algorithm recently validated to identify epigenetic alterations OSCC-related. 8 PVL not transformed into OSCC (PVL no CA) and 23 healthy donors were used as controls.

**Results:** 117/261 (44 %) CpGs exhibited superimposable

methylation levels in OSCCs and their corresponding PVLs. PVL-CA showed different methylation levels respect to healthy donors and "PVL no CA." Specifically, four genes (*LRRTM*, *PARP*, *NTM*, and *ITGA4*) showed the highest ratio of similarity in terms of methylated CpGs between PVL and contralateral OSCC (100%). Three out of four PVL-CA patients with a "positive" algorithm score developed second neoplastic events as compared to only 1 out of 5 patients in the same group with a "negative" score.

**Conclusions:** the results of this study provide further evidence that PVL shares an aberrant methylation profile with contralateral OSCC. In agreement with the theory of field cancerization, data point towards the potential role of epigenetics in patients at risk of developing multiple neoplastic events.

## ORAL METASTASIS FROM PRIMARY BREAST ADENOCARCINOMA: A MULTIDISCIPLINARY MANAGEMENT

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**Aim:** the oral cavity is a rare site for metastatic dissemination (only 1-1.5% of all cases in this anatomical region). It's relevant to underline that in women, the most common oral metastases both in the mandibular bone (41%) and in the soft tissues (24.3%) originate from breast cancer. The aim of this work is to report two cases of oral metastases from breast cancer with a focus on their multidisciplinary management.

**Methods:** in the first case, a 77-year-old woman with diagnosis of pT2 M0 N0 ductal breast carcinoma and treated with chemotherapy, developed a gingival metastasis, at the first misdiagnosed with traumatic subprosthetic lesion. In the second case, a 65-year-old woman developed a bone metastasis in the right hemi-mandibular region from a breast cancer treated 15 years previously.

**Results:** in the first case the oral pathologist evaluation was decisive for the diagnosis. Of great therapeutic and clinical importance for the second patient was the choice to treat the metastasis with RadioTherapy (RT) and not to remove it surgically. Our consultation was requested from the oncologists to understand whether to combine RT with bisphosphonates or monoclonal antibodies in order to reduce the progression of metastatic lesion, evaluating the risk of MRONJ for the patient. The patient, after a careful oral pathologists' analysis, was treated with denosumab. This combined treatment, proposed for the first time in the literature, reduced drastically the size of the bone lesion.

**Conclusions:** the synergy and collaboration between dentist and oncologist have allowed us to obtain excellent outcomes for the patient.

## GINGIVAL METASTASIS FROM LUNG ADENOCARCINOMA AS A SIGN OF OCCULT MALIGNANCY: A CASE SERIES

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**Aim:** the oral cavity represents a rare site of metastases from primary malignant neoplasms, with only 1% of sites involved. Most significantly, secondaries are often diagnosed before or synchronously with the detection of the primary tumor. We report two cases of oral metastases, one of which as the first sign of occult primary tumor with focus on the clinical diagnostic process.

**Methods:** in the first case, a 61-year-old male patient comes to our attention due to the presence of an oral neof ormation in the upper right hemimaxillary gingiva. In the second case, a 76-year-old female patient comes to our attention due to the presence of a retromolar trigone neof ormation referred by the oncologist. The diagnosis of lung adenocarcinoma had been made 4 days earlier.

**Results:** in both cases, a biopsy was performed with subsequent histopathological examination with diagnosis of metastasis from lung adenocarcinoma. According to our cases, a review of 673 metastatic tumors in the oral cavity highlights that they are more common during the fifth and sixth decades of life but with the site of the primary tumor different according to the sexes while in women it is the breast.

**Conclusions:** a correct and complete anamnesis, with focus on the remote pathological one, is decisive. Once the diagnostic hypothesis and the differential diagnosis have been established, the histopathological examination is fundamental; therefore, it must always be performed (even after the removal of apparently benign lesions).

## ULTRA-HIGH FREQUENCY ULTRASOUND IN ORAL SQUAMOUS CELL CARCINOMA: A PILOT DIAGNOSTIC STUDY

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**Aim:** the Ultra-High Frequency UltraSound (UHFUS) is an ultrasound system that provides submillimetre resolution images to real-time evaluation of mucosal and vascular tissues. The study aims to assess the morphological changes of Oral Squamous Cell Carcinoma (OSCC) patients by UHFUS, and to evaluate the UHFUS diagnostic accuracy compared to the histological examination.

**Methods:** the study included 8 patients with clinical diagnosis of OSCC enrolled from the Department of Maxillo-Facial Surgery, Ancona General Hospital, Italy. The pre-operative image acquisition was performed using the Vevo<sup>®</sup> probe (VisualSonics, Toronto, Canada) with a spatial resolution of 70 MHz. The image scans were performed both in Brightness-mode and Colour-mode to evaluate growth pattern, mucosal thickness,

echogenicity, and vascularization. After that, all patients underwent to biopsy examination for histological evaluation.

**Results:** the lesions showed an altered mucosal thickness, due to the exophytic or endophytic growth pattern, with marked epithelial irregularities, highly no-homogeneous hypoechoic areas, and intense vascularization. At histological examination, 7 samples were diagnosed as invasive OSCC and one sample as in situ carcinoma. The UHFUS showed a high diagnostic accuracy (100% sensitivity; 87,5% specificity). The Positive Predictive and False Negative Value were respectively equal to 88.9% and 100%.

**Conclusions:** UHFUS could represent a non-invasive imaging method able to support the clinical diagnosis, the surgical procedures, and the post-operative follow-up of OSCC patients.

## NANOTECH BLOOD TESTS IN EARLY DIAGNOSIS AND MANAGEMENT OF OSCC AND OPMD

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**Aim:** the aim is to create and implement a new Nanotech Blood-test (NBT) analyzing personalized Protein Coronas (PC) on Graphene Oxide (GO) nanosheets in Oral Squamous Cell Carcinoma (OSCC) and Oral Potentially Malignant Disorders (OPMD) plasma patients.

**Methods:** patients were divided into 3 groups according to pathology: G1 (n = 15) OSCC patients; G2 (n = 5) OPMD patients, G3 (n = 5) healthy controls. Patients underwent liquid biopsy from blood samples at time at diagnosis/enrolment ( $t_0$ ), at 3 months ( $t_1$ ) and 6 months ( $t_2$ ) following disease management, except for controls that only underwent liquid biopsy at  $t_0$ . The expression of GO-PCs was evaluated at Department of Molecular Medicine. The optimal incubation conditions between GO and plasma in OSCC, OPMD and controls were determined.

**Results:** our diagnostic approach distinguished between OSCC and healthy individuals, accurately classifying 18 out of 20 subjects. We observed discern protein patterns in OSCC plasma within low molecular weight proteins ranging 20-30 kDa and 40-50 kDa. We applied this method to monitor the progression of the diseases of patients undergoing treatment; we observed a trend indicating a convergence of protein profiles between oncological and at-risk patients and healthy subjects throughout treatment course, except for OPMD patients affected by proliferative verrucous leukoplakia that didn't show changes in protein profiles.

**Conclusions:** further studies are needed to scientifically validate our preliminary data on this rapid and low-cost method so that it can be used in the management of OSCC and OMPD.

## RECOGNIZING ELEMENTARY WHITE MUCOSAL LESIONS BY AI SYSTEM: A PILOT STUDY

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**Aim:** identifying elementary lesions in oral medicine learning, particularly white lesions, represents a significant challenge, especially among trainee dentists. These lesions may manifest as plaques, such as in cases of leukoplakia or hyperkeratosis, Oral Lichen Planus (OLP) plaque-like, and hyperplastic candidiasis, or as striae and reticular figurations. Elementary white lesions may also manifest as pseudomembranous, papular, or hyperkeratotic neoformations. As of today, there is a lack of AI systems tailored to differentiate Elementary White Mucosal Lesions (EWML). This study proposes the development of an AI system to aid dental students in differentiating EWML.

**Methods:** the methodology involved assembling a dataset by acquiring photographs of oral leukoplakia, OLP plaque-like

and reticular, OLL, oral candidiasis, and various hyperkeratotic lesions from the Unit of Oral Medicine. The Sentsight.AI platform was employed for image labeling and model training. A total of 191 photos were utilized, segregated into training (n = 154, controls) and validation (n = 37, cases) sets.

**Results:** the proposed method yielded a Precision of 80.7%, Sensitivity of 81.4%, F1 score of 79.3% and a mAP of 89.2%.

**Conclusions:** leveraging AI-based models trained on diverse lesion types enhances the differentiation of EWML, furnishing dental students with a robust tool for elementary lesion recognition. Moreover, this tool applicability could extend to identifying red, pigmented, and red elementary mucosal lesions, helping in generating the correct diagnostic hypothesis.

## EFFECTS OF ORAL LICHEN PLANUS ON MICRO-RNAS LINKED WITH MALIGNANT TRANSFORMATION RISK

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**Aim:** the present study evaluated the oral tissue expression of micro-RNA (miRNAs) linked to the potential malignant evolution of oral lichen planus (OLP). Furthermore, the correlation between OLP severity and miRNAs expression was assessed, and possible predictors of miRNAs in OLP patients were identified.

**Methods:** the present study enrolled 30 patients with OLP (median age 58 years) and 30 healthy controls (median age 59 years). In each patient, miRNA levels (miR- 7a- 3p, -7a2- 3p, -7a- 5p, -21- 3p, -21- 5p, -100- 3p, -100- 5p, -125b- 2-3p, 125b- 5p, -200b-3p, -200b-5p) were assessed and analyzed through reverse transcription polymerase chain reaction. Clinical parameters and the eventual presence of OLP symptoms, signs, and disease severity scores in each patient were reported using an anamnestic questionnaire.

**Results:** in comparison with healthy controls, OLP patients showed significantly higher miR- 7a- 3p, -7a- 2- 3p, -21- 3p, -21- 5p and miR- 100- 5p levels (p < 0.05) and significantly lower miR- 125b- 2- 3p, -125b- 5p, -200b- 3p, and miR- 200b- 5p levels (p < 0.05). Furthermore, OLP symptoms and signs and disease severity scores were significantly correlated and were also predictors of all analyzed miRNAs (p < 0.05).

**Conclusions:** in comparison with healthy subjects, OLP patients exhibited unbalanced oral miRNAs expression linked to the risk of potential malignant evolution of OLP. Furthermore, some miRNAs were correlated with OLP extent and were significant predictors of OLP symptoms, signs, and disease severity scores.

## ROLE OF ORAL MICROBIOMA AND DRUG EXPOSURE IN THE DEVELOPMENT OF OSTEONECROSIS OF THE JAW

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**Aim:** the use of anti-resorptive drugs, such as bisphosphonates or denosumab, can lead to medication-induced osteonecrosis of the jaw (MRONJ) which is a clinically relevant adverse effect. This study aims to assess oral microbiota composition, as well as drugs' and antibiotic exposure, which are aspects that impact the bioavailability of antiresorptive drugs, to predict MRONJ development.

**Methods:** a study was conducted on 36 patients treated with either denosumab or zoledronate. The patients were divided into two groups: Group A consisted of 17 patients who developed MRONJ, while Group B consisted of 19 patients who did not develop MRONJ. The two groups were compared by measuring the concentrations of antiresorptive drugs and antibiotics in both plasma and bone. The oral microbiome was analyzed using Next-Generation Sequencing.

**Results:** the two groups did not display any significant difference in the oral microbiome nor in the drugs' type and route of administration.

The median bone concentration of zoledronate in Group B was 0.001 (IQR 0.00-0.08), which was lower than the median bone concentration of zoledronate in Group A (0.04; IQR 0.00-0.011). However, this difference was not statistically significant, indicating a trend rather than a significant finding.

Surprisingly, there was no bone quantification of amoxicillin in either of the two groups.

**Conclusions:** this study aimed to investigate various factors involved in the development of MRONJ. To obtain substantial evidence, additional studies are required.

## EFFECTS OF CAPSAICIN GEL ADMINISTRATION ON ORAL THERMAL QUANTITATIVE SENSORY TESTING

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**Aim:** evaluating alterations in orofacial sensitivity enable the development of novel therapeutic protocols in oral pain management. This study aims to quantify changes in thermal and pain perception before and after topical treatment with capsaicin gel.

**Methods:** twenty healthy subjects were enrolled in this study, divided into two groups. The case group was instructed to apply capsaicin gel twice a day for 14 days to the alveolar mucosa, while the control group refrained from its use. The quantitative sensory testing protocol included assessments of warm detection threshold, cold detection threshold, heat pain threshold, and cold pain threshold before and after capsaicin gel application.

**Results:** the results showed a significant increase in heat pain

threshold in the capsaicin group as compared to the control group in both the maxillary and mandibular alveolar mucosa. Specifically, there was a 2.9°C increase (95% CI: 1.6-4.2) ( $p < 0.001$ ) in the anterior maxilla and a 2.2°C increase (95% CI: 1.0-3.4) ( $p = 0.001$ ) in the anterior mandible. Additionally, a significant difference was observed in the anterior mandible concerning the heat detection threshold, which increased by  $\Delta 1.1^\circ\text{C}$  (95% CI: 0.3-1.9) ( $p = 0.009$ ) in the capsaicin group.

**Conclusions:** this study evidenced, through thermal sensitivity testing, that repeated topical applications of capsaicin gel raise the heat pain threshold in healthy subjects. These results suggest that capsaicin may have potential as an analgesic treatment for oral pain conditions such as burning mouth syndrome.

## MRONJ AND ITS IMPACT ON PATIENTS' ORAL-HEALTH RELATED QUALITY OF LIFE: A CASE-CONTROL STUDY

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**Aim:** Medication-Related OsteoNecrosis of the Jaw (MRONJ) can cause pain, infections, and difficulties with chewing, eating, and speaking, all of which significantly affect patients' oral health and quality of life. This study aimed to assess the impact of MRONJ on oral health-related quality of life.

**Methods:** this case-control study involved 80 participants, including 40 patients with MRONJ and 40 controls, balanced for age and sex. Participants completed self-administered questionnaires: the Oral Health Impact Profile-14 (OHIP-14), the Short Form 36 Health Survey Questionnaire (SF-36), and the Numeric Pain Rating Scale (NPRS). Data on systemic diseases, medications, oral health status (including the Decayed,

Missing, Filled Teeth score, or DMFT), and periodontal disease were also collected.

**Results:** MRONJ patients had significantly higher OHIP-14 scores (p-value: 0.003) than controls, indicating a lower quality of life. The SF-36 results revealed that MRONJ patients had lower scores across various domains, including physical functioning, physical role, and bodily pain. They also had a significantly higher DMFT score, and greater periodontal disease prevalence compared to controls.

**Conclusions:** the study underscores the impact of MRONJ on oral health-related quality of life and highlights the need to consider the psychological aspects of patients in treatment decisions and healing processes.

## ASSESSMENT OF PERIODONTAL HEALTH IN ORAL LICHEN PLANUS PATIENTS: A CASE-CONTROL STUDY

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**Aim:** Lichen Planus (LP) is a chronic inflammatory disorder which appears to increase the risk and to aggravate the severity of periodontitis, leading to the worsening of some clinical parameters, such as bleeding on probing, plaque index and loss of clinical attachment. Therefore, the study aims to compare the periodontal status of oral LP patients and healthy subjects.

**Methods:** a total of 20 patients with histological diagnosis of LP (TG) and 40 healthy controls (CG), referred to the Department of Clinical Specialistic and Dental Sciences, Marche Polytechnic University, were prospectively enrolled in the study. For each subject, the Probing Depth (PD), the Full Mouth Plaque Score (FMPS) and the Full Mouth Bleeding Score (FMBS), were recorded to establish any significant differences between the two groups.

**Results:** in the TG, the FMBS was significantly higher compared to the CG (21% ± 0,13 vs 13% ± 0,13; p = 0.0220). Conversely, the PD and FMPS did not show any significant differences between the groups. In both groups, higher PD values were recorded in periodontitis subjects and higher percentages of FMPS in patients with poor oral hygiene. Comparing the periodontal and oral hygiene status, no significant differences were reported between the groups.

**Conclusions:** in the TG, the higher FMBS values could be attributed to the LP-related gingivostomatitis, which makes difficult to maintaining an adequate level of oral hygiene. On the contrary, the absence of differences in PD and FMPS could be related to the age and to the oral hygiene status of patients included in the study.

## ROLE OF EDUCATION FOR ORAL CANCER EARLY DETECTION

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**Aim:** the aim of the present study was to evaluate the attitude of dental students and practitioners with different levels of experience in correctly detecting oral carcinoma by evaluating clinical pictures representative of all oral mucosa sites and clinical appearance.

**Methods:** forty randomly ordered clinical pictures of oral lesions were selected, of which 20 were representative of oral cancers at different stages and the other 20 pictures were representative of benign lesions. 25 Dental Students, who had recently attended the undergraduate Oral Medicine module of the Dental School University of Bologna (DS), 30 Junior Dental Practitioners (JDP), and 44 Senior Dental Practitioners (SDP) were asked to evaluate the pictures using an anonymous online questionnaire. To evaluate the suspicion of oral

cancer, the participants had to choose one of the following options for each picture: Yes, Positive uncertainty; negative uncertainty; no.

**Results:** the DS showed a higher main score (32.2+2.9) and lower uncertainty (32%) than both IDP (27.9+2.9; 43.75%) and SDP (28.7+2.9; 48.5%). One-way ANOVA revealed a significant between-group difference ( $F = 14.34$ ;  $p < .001$ ).

**Conclusions:** oral cancer can be suspected on visual examination, and inadequate dental practitioners' attitudes are considered to be one of the factors that contribute to the delayed detection of oral cancer at an early stage. The study confirmed the role of academic education but revealed the need for continuing education to improve the rates of early detection of oral cancer.

## REACTIVATION AND ASYMPTOMATIC SHEDDING OF HSV-1: CORRELATION WITH GUT DISORDERS

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**Aim:** in this cohort study we examined the reactivation and asymptomatic shedding of HSV-1 virus in the saliva of adult subjects and its association with the Enteric Nervous System (ENS) and functional gastrointestinal disorders; the quality of life was also examined.

**Methods:** for each subject we obtained three saliva samples over 30 days and a questionnaire on general health and gastrointestinal disorders, administered at T0. The samples were subjected to a qPCR molecular analysis searching for viral DNA and a culture analysis verifying the presence of viral particles by flow cytometry. All the data were subjected to statistical cross-analysis. The research was approved by the local Ethics Committee.

**Results:** a total of 145 subjects were tested. The qPCR ob-

tained a prevalence of 38% while the flow cytometry obtained a prevalence of 55% of the samples analyzed. A higher number of HSV-1 antigen-positive subjects in all the three samples was also observed in the cytometric analysis (25%) compared to that determined by qPCR (4.5%). Neither HSV-1 DNA positivity nor HSV-1 antigen positivity were statistically associated with gastrointestinal disorders or quality of life.

**Conclusions:** the phenomenon of asymptomatic shedding of HSV-1 in the saliva is common and infectious particles have been detected more sensitively by flow cytometry: swallowing could expose the ENS to the virus in a "chronic-like" way and the virus' reactivations could be responsible for exacerbations of gut disorders. Further studies could lead to new diagnostic methods in which the dentist can also play a central role.

## IS PHOTOBIMODULATION EFFECTIVE IN REDUCING OLP SYMPTOMS? PRELIMINARY RESULTS

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**Aim:** Oral Lichen Planus (OLP) is a chronic inflammatory disease that affects the stratified squamous epithelium of the oral mucosa and can cause relevant painful symptomatology. The aim of this retrospective study was to assess the effectiveness of six sessions of diode laser photobiomodulation with a flat top handpiece in alleviating symptoms in patients with OLP.

**Methods:** twelve consecutive patients referring to the Dental Clinic of Padua (Italy) with a clinical and histological diagnosis of OLP were treated with six sessions of laser photobiomodulation at weekly intervals, using a 980 nm diode laser, with a flat top handpiece. VAS-PAIN measurements and Thongprasom scale were taken before and after each session.

**Results:** the preliminary analysis included 12 patients (all

women; median age 72 years, IQR 60-79). No adverse events occurred among the patients. Median VAS significantly decreased from 4 (IQR 3-6) at the first treatment session to 2 (IQR 1-3) at the sixth treatment session ( $p < 0.0001$ ). Each treatment session significantly reduced VAS ( $p = 0.0008$ ) and the magnitude of the decrease was not different among the different sessions over time ( $p = 0.11$ ). Median Thongprasom scale reduced from 3 (IQR 3-4) before the first session to 2 (IQR 2-3) after the sixth session ( $p = 0.01$ ).

**Conclusions:** laser photobiomodulation with a flat top handpiece may represent a valid treatment option for OLP symptomatology. Further studies are needed to confirm our preliminary results.

## AN INSTRUMENT FOR SCREENING AND ASSESSING THE XEROSTOMIC PATIENT WITH REAL HYPOSALIVATION

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**Aim:** to develop an instrument for the screening and the assessment of xerostomic patients with real hyposalivation, using a questionnaire (Real-Hyposalivation Survey, RHS) and sialometry.

**Methods:** the RHS is composed of an anamnestic part, a clinical diary (of dry mouth sensation) and a diagnostic part; the latter provides a score between 0 and 14. Thirty-four patients presenting a subjective sensation of dry mouth have been included in the present study. All of them have been administered the RHS ( $T_0$ ) and have undergone sialometry twice ( $T_0$ ,  $T_1$ ), each measuring basal and stimulated salivary flow.

**Results:** the clinical diaries showed a significant higher frequency of dry mouth sensation in the morning, which decreases after lunch and increases significantly in the afternoon ( $p < 0.05$ ).

The psychological assessment included in the anamnestic part showed a significant correlation between the RHS score and the scores obtained in the Hamilton Anxiety Scale and in the Oral-Health Impact Profile 14 ( $p < 0.05$ ). Both basal and stimulated values of salivary flow showed an association with the total score in the RHS, at  $T_0$ ,  $T_1$  (both with  $p < 0.0001$ ), and for the average value ( $p < 0.001$ ). Salivary flux values had an impact on the number of positive major criteria in the RHS ( $p < 0.0001$ ).

**Conclusions:** RHS showed to be an useful instrument for screening xerostomic patients with real hyposalivation, presenting a strong association with salivary flow values. Future multi-centered studies involving control groups not affected by xerostomia, will permit to confirm the results obtained in this study.

## OSTEORADIONECROSIS INCIDENCE IN PRE-RADIATION TEETH EXTRACTIONS: A PROSPECTIVE STUDY

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**Aims:** to evaluate OsteoRadioNecrosis (ORN) incidence in a cohort of patients undergoing Tooth Extraction (TE) before RadioTherapy (RT) for head and neck cancers.

**Methods:** the study protocol was approved by the Ethics Committee of Università Cattolica del Sacro Cuore (ID-2132) and registered at clinicaltrials.gov (ID: NCT04009161). TE was performed in case of signs of pericoronitis, periapical lesions, restorative impossibility, severe periodontitis. ORN was defined as exposed bone at an unhealed post-extraction socket in the absence of oncological recurrence. The RT plans were reviewed, and each post-extractive socket was contoured to calculate the received radiation dose.

**Results:** in total, 156 patients with 610 TE were enrolled. The mean follow-up was 567 days. ORN was diagnosed in four patients (2.6% of patients and 0.7% of TE). Need for osteotomy and radiation dose at the extraction site were associated with ORN (OR for osteotomy: 21.9, 95% CI: 2.17–222.2,  $p = 0.009$ ; OR for RT dose: 1.1, 95% CI: 1–1.15,  $p = 0.05$ ).

**Conclusions:** TE appears to be a significant risk factor for ORN, particularly when osteotomy is required, and post-extraction sockets receive a high RT dosage. This study proposes a decision-making algorithm for TE and outlines a straightforward surgical protocol.

## ELEVATED BP180 AT DIAGNOSIS CORRELATE WITH DISEASE SEVERITY AND RELAPSE IN ORAL PEMPHIGOID

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**Aim:** Mucous Membrane Pemphigoid (MMP) is a bullous autoimmune disease characterized by the presence of autoantibodies against various antigens in basement membrane zone including BP180. Diagnosis is commonly based on optical microscopy and Direct ImmunoFluorescence (IFD). Several studies have evaluated the performance of the BP180-ELISA as ancillary test for diagnosis, but its application for clinical management has been little investigated in MMP. The purpose of this study was to assess whether the level of antibodies may be correlated with clinical severity, treatment response, and prognosis in patients with MMP.

**Methods:** this retrospective study included 37 IFD+ MMP patients. The levels of circulating anti BP180 IgG were measured using commercially available ELISA kit (Euroimmun). Patients

were divided in two groups: BP180 <20 U/ml and BP180 >20 U/ml. Clinical severity was calculated using Oral Disease Severity Score (ODSS). The achievement of clinical remission (complete/partial) with minimal therapy was used as primary outcome for treatment response. The interval from clinical remission to relapse was also calculated.

**Results:** values of BP180 >20 U/ml significantly correlated with higher ODSS score in both univariate ( $P < 0.05$ ) and multivariate analyses ( $P < 0.05$ ). Patients with BP180 >20 U/ml also displayed a worse clinical behavior in terms of relapse ( $P < 0.05$ ).

**Conclusions:** BP180 levels at diagnosis appear to be a useful parameter for describing clinical severity and relapse after clinical remission with minimal therapy in MMP.

## PREDICTIVE FACTORS AND CLINICAL FEATURES OF EXPOSED *VERSUS* NON-EXPOSED MRONJ

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**Aim:** Medication-Related OsteoNecrosis of the Jaws (MRONJ) can occur either with or without bone exposure, posing diagnosis and management challenges for the clinician. The aim of the present study was to evaluate and compare the characteristics of exposed MRONJ *versus* non-exposed MRONJ.

**Methods:** data from MRONJ patients treated over a 20-years period were collected and analyzed. Medical history, reason for antiresorptive/antiangiogenic treatment, and clinical and radiographic features of MRONJ lesions were registered.

**Results:** among the 392 patients (114 osteoporotic and 288 oncologic patients) enrolled, non exposed MRONJ occurred in 109 patients, with higher occurrence in osteoporotic patients ( $p < 0.001$ ). Bone exposure was clinically associated to suppuration and pain, and to persistence of post-extractive socket

and sequestrum on panoramic radiograph ( $p < 0.001$ ). Periodontal space enlargement and crestal alveolar bone thickening on computed tomography were predictive of non exposed MRONJ development ( $p < 0.05$ ). Sequestrectomy was the treatment of choice in both groups, although surgical time was longer for non exposed MRONJ ( $p < 0.05$ ). Non exposed MRONJ lesions were associated to higher risk of recurrence at 6 and 12 months ( $p < 0.01$ ).

**Conclusions:** clinical and imaging signs of non exposed MRONJ may be subtle. Surgical approach through either conservative surgery or sequestrectomy is the treatment of choice, although non exposed MRONJs may require strict follow-up especially in the first 12 months for the higher risk of recurrence.

## PREDICTABILITY OF ORAL CANCER PATTERN OF INVASION WITH ULTRA-HIGH FREQUENCY ULTRASOUND

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**Aim:** Worst Pattern Of Invasion (WPOI) defines histological tumor features in terms of infiltrative growth into surrounding tissues, and is crucial for treatment planning and predicting patient outcomes in oral cancer management. WPOI is classified on a 1-5 scale (Type 1 = pushing border; Type 2 = finger-like growth; Type 3 = separate islands with  $> 15$  cells; Type 4 = small tumor islands,  $\leq 15$  discontinuous cells, Type 5 = tumor satellites  $> 1$  mm from main tumor or next closest satellite with dispersed, discontinuous growth pattern). Types 1-3 are indicative of coesive tumor invasion, while types 4-5 indicate a non-coesive infiltration. The aim of the present study was to correlate ultrasonographic features and WPOI in patients affected by Oral Squamous Cell Carcinoma (OSCC).

**Methods:** consecutive patients with suspected tongue OS-

CC were enrolled and underwent ultra-high frequency ultrasonography (48 MHz) of the lesion. Tumor features (depth of invasion, presence of continuous or discontinuous front of invasion, vascular resistive index) were assessed and compared to histology.

**Results:** forty-five patients (mean age  $63.3 \pm 15.2$  years) were enrolled. Mean DOI was  $8.1 \pm 4.3$  mm. Continuous pattern of invasion was found in 11 cases and corresponded to WPOI 1-3 in 78.3% of cases. Non-coesive WPOI corresponded to a discontinuous pattern of invasion in 82.6% of cases. Resistive index  $> 0.89$  was associated to a higher risk of perivascular invasion ( $p > 0.05$ ).

**Conclusions:** ultrasonography may be a reliable tool for the prediction of OSCC invasiveness due to the high consistency between imaging and histology.

## EFFICIENCY OF SIPMO-SICMF MRONJ PREVENTION PROTOCOL IN HIGH-RISK CANCER PATIENTS

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**Aim:** MRONJ is an adverse drug reaction affecting patients undergoing treatment with Bone-Targeting Agents (BTAs) and/or Anti-angiogenetic Agents (AA). Cancer patients receiving High Doses of BTA (HD-BTA) have MRONJ incidence rates between 1-20%. Among MRONJ risk factors, dentoalveolar surgery is mentioned and several studies indicate that prevention protocols are important in reducing risk in HD-BTA patients. This paper aims to evaluate the efficiency of a MRONJ protocol for dental extractions in HD-BTA patients.

**Methods:** patients under HD-BTA were enrolled (Jan 21 and Dec 22) at the Unit of Oral Medicine (AOUP Palermo). According to the SIPMO-SICMF recommendations, the protocol was applied. Each patient followed a preventive drug holiday regimen for Bisphosphonate (BP) or Denosumab (DMB) and clinical and radiographic exams for secondary prevention of MRONJ at 1-, 3-, 6-, and 12-months post extraction.

**Results:** 23 patients were recruited: 7/23 received BP; 14/23

received DMB; 2/23 received both DMB and AA. All patients were deemed at highest risk for MRONJ (R<sub>++</sub> according to SIPMO-SICMF). The mean duration of BTA therapy in the R<sub>++</sub> group was 24.2±18.2 months (23.7±19.7 for BP; 24.4±14.9 for DMB). 62 teeth were extracted, 37 single-rooted and 25 multi-rooted, averaging 2.8 teeth per patient. According to SIPMO-SICMF recommendations, 2 R<sub>++</sub> (8.69%) were diagnosed for MRONJ after surgery. These patients received both DMB and AA, developing stage II MRONJ at post-extraction sites. Their DMB therapy durations (16 and 19 months) were below cohort average.

**Conclusions:** considering the limitations of the sample size, the protocol appears to be effective in reducing MRONJ risk in this cohort. HD-BTA patients receiving both DMB and AA seem to be at higher risk aligning with literature reporting increased MRONJ incidence in those undergoing combined BTA therapy.

## OROFACIAL MANIFESTATIONS IN SYSTEMIC SCLEROSIS: INSIGHTS FROM A PRELIMINARY COHORT STUDY

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**Aim:** to investigate oral manifestations in Systemic Sclerosis (SSc) through a preliminary cohort study.

**Methods:** a critical literature review was conducted, and a database search (PubMed) was performed, yielding 2500 items. Seventeen papers were included, focusing on rheumatological and serological status and SSc orofacial involvement. Data from 13 SSc patients were recorded, including age, sex, medical and drug history, focusing on SSc diagnosis and evolution; dental and periodontal indexes (e.g., Decayed Missing Filled Teeth, DMFT; Probing Depth, PD; Clinical Attachment Level, CAL; Plaque Index, PI); overall mouth opening measures; Salivary Flow Rate test (SFR); serological status; and Health Assessment Questionnaire (HAQ). To identify a relationship between systemic disease and orofacial manifestation, statistical analysis was performed. Spearman Correlation Coefficient be-

tween numeric variables was calculated, as well as boxplot analysis between numeric and categorical variables.

**Results:** considering the cohort, some interesting correlations emerged (correlation cutoff  $\geq 0.5$ ;  $p < 0.05$ ): periodontal bleeding index (Bleeding on Probing, BoP) was correlated with positivity to anti-centromere antibody; reduced mouth opening was correlated with interstitial lung disease; cutaneous subset was correlated with a low SFR; PI was correlated with most manual ability evaluation sections of HAQ and with the overall "disability index" ( $p < 0.0109$ ).

**Conclusions:** although orofacial manifestations of SSc were a minor issue compared to systemic involvement, patients in the cohort showed heterogeneous indicators of mouth disorders, directly affecting their quality of life. Despite the small cohort size, emerging correlations and their statistical significance highlight the need for wider prospective and observational studies.

## REAL PREVALENCE OF MRONJ IN PATIENTS TREATED WITH ANTIRESORPTIVE DRUGS TO PREVENT CTIBL

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**Aim:** patients affected by hormone-responsive breast and prostate cancer take adjuvant endocrine therapy (aromatase inhibitors, GnRH agonists etc.) as part of their treatment, which has, as consequence, the development of CTIBL, a benign condition characterized by decreased in bone mineral density. The Italian Society of Medical Oncology (AIOM) recommends that patients at risk of CTIBL should be treated preventively with low doses of Bone Modifying Agents (BMAs) such as Bisphosphonates or Denosumab. BMAs can cause Osteonecrosis of the Jaws (ONJ) whose prevalence in cancer patients treated with low doses of BMAs is not yet clear: it is estimated to range from 0 to 5%, data are insufficient. The risk of ONJ in metastatic patients treated with high doses of BMAs is about 20% and among osteometabolic patients is nearly  $\leq 1\%$  (SIP-

MO\_SICMF), while 0,03 - 0,05% according to AAOMS.

**Methods:** we analyzed 100 medical records of patients undergoing adjuvant endocrine therapy and antiresorptive therapy at Padua Hospital (UOC of Dental Clinic) and Veneto Oncology Institute (UOC Hereditary Tumors) between 2023 and 2024.

**Results:** out of 100 patients, 4 developed osteonecrosis, of whom 75% were on oral antiresorptive therapy (Alendronato and Ibandronato) and only 25% on intramuscular therapy (Denosumab). The 4 patients had a preventive visit to the dentist but despite this presented risk factors such as need for dental extraction.

**Conclusions:** although the case series is still small, the numbers are significant that the prevalence figure of osteonecrosis may be underestimated in the literature.

## IDENTIFICATION OF DNA METHYLATION PROFILE OF ORAL LEUKOPLAKIA FROM ORAL BRUSHING

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**Aim:** Oral Leukoplakia (OL) is the most prevalent Oral Potentially Malignant Disorder (OPMD), characterized by predominantly white plaques with uncertain malignant potential after excluding other known non-neoplastic conditions. Currently, no molecular methods useful for identification of a “true oral leukoplakia” is available. This study aims to establish a specific epigenetic profile of OL, enabling its discrimination from benign reactive white oral lesions.

**Methods:** oral brushing was conducted on 40 cases of Oral Squamous Cell Carcinoma (OSCC), 30 OLs, 25 benign reactive white oral lesions, and 30 healthy individuals. Quantitative DNA methylation analysis targeting 13 genes (for a total of 231 CpG islands) previously implicated in OSCC pathology was performed using Next Generation Sequencing (NGS) for each specimen.

**Results:** DNA methylation analysis revealed that majority of CpG islands of ITGA4, GP1BB, KIF1A, ZAP70 and LINC0059 genes (71.4%, 100%, 67.9%, 55% and 70% respectively) showed significantly different methylation levels in OL group when compared with healthy donors and benign reactive white oral lesions. Conversely, no significant different mean methylation levels between benign reactive white oral lesions and healthy donors were found for these five genes. This specific epigenetic profile was found in 98/231 (42%) of the analyzed CpGs islands.

**Conclusions:** preliminary findings suggest that ITGA4, GP1BB, KIF1A, ZAP70 and LINC0059 can be reliable biomarkers for discerning “true OL” from reactive white oral lesions.

## DISEASE PHENOTYPE IN EARLY ONSET IBD WITH ORAL MANIFESTATIONS: A CROSS-SECTIONAL STUDY

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**Aim:** this study aimed to compare disease phenotype in Early Onset IBD patients (EOIBD), including Crohn's Disease (CD) and Ulcerative Colitis (UC), with (OM-IBD) and without oral manifestations (non OM-IBD).

**Methods:** EOIBD patients ( $n = 39$ ) were categorized into two groups: OM-IBD ( $n = 18$ ) and non OM-IBD ( $n = 21$ ). Clinical records, endoscopy records, clinical activity index (PUCAI/PC-DAI), endoscopic activity index (Paris, UCEIS, MAYO, SES-CD) and Fecal Calprotectin (FCp) were compared between groups.

**Results:** the most common OM was aphthous-like ulcers (88.9%), followed by labial swelling (22.2%) and buccal cobblestoning (16.6%). In 72.2% of cases OM preceded intestinal symptoms by several months. OM were more frequent in CD

than in UC ( $p = 0.04$ ) and OM-IBD reported higher prevalence of upper gastrointestinal involvement and perianal disease. OM-IBD showed more relapses and a significant increase in FCp levels over time but required a lower number of therapeutic changes ( $p = 0.005$ ) compared to non OM-IBD. Notably, association between decrease of FCp levels and long remission was seen in non OM-IBD exclusively.

**Conclusions:** our findings suggest that OM are often the initial sign of IBD and may represent a potential modifier of disease phenotype, correlating to a different extent and a more aggressive disease course. Moreover, FCp seems to be a robust prognostic marker in non OM-IBD, while not so in OM-IBD. Therefore, early recognition of OM can contribute to enhancing the overall care of IBD patients and expedite the diagnosis.

## COVID-19 IMPACT ON POST-TRAUMATIC STRESS SYMPTOMS IN BURNING MOUTH SYNDROME

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**Aim:** the aim of this study is to investigate the impact of COVID-19 among Burning Mouth Syndrome (BMS) patients compared to a control group in terms of Post-Traumatic Stress Symptoms (PTSS), Post-Traumatic Growth (PTG), and resilience during the COVID-19 pandemic. It aims to identify potential differences in psychological growth and coping mechanisms between the two groups.

**Methods:** a cross-sectional study was conducted in five Italian centers. A total of 100 BMS patients and 100 controls completed several questionnaires, including the General Health Questionnaire, Depression Anxiety and Stress Scale, Insomnia Severity Index, National Stressful Events Survey Short Scale, Impact of Event Scale-Revised, Post Traumatic Growth Inventory Short Form, and Connor-Davidson Resilience Scale.

**Results:** depression, anxiety and stress (DASS-21 score) and post-traumatic stress symptoms (IES-R-6 score) were significantly higher in BMS patients, who showed lower post-traumatic growth (PTGI-SF score). The resilience scale (CDRS-10) was found to be a key predictor of post-traumatic growth in both groups, explaining a significant variance in PTGI-SF scores.

**Conclusions:** patients with BMS experienced increased levels of post-traumatic stress, anxiety, and depression during the COVID-19 pandemic. These symptoms were accompanied by a decreased level of post-traumatic growth. This finding emphasizes the importance of providing better psychological support for BMS patients. The support should focus on stress management and promoting post-traumatic growth, particularly in challenging times.

## EAGLE'S SYNDROME AND ORAL IMPLICATIONS

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**Aim:** Eagle's syndrome is a rare clinical condition which derives from an anomalous elongation of the styloid processes of the occipital bones and/or from the calcification of the styloid ligament with consequent compression of the nearby anatomical structures. Although most cases remain asymptomatic, in some cases the pressure exerted by this anatomical variation on neighbouring structures may trigger a variety of symptoms. This literature review aims to describe the procedures necessary to deal with patients with this condition in the most effective way.

**Methods:** for this narrative review were analysed the most relevant scientific publications of the last 5 years searched on

PubMed, Google Scholar, and NCBI, using the keywords "Eagle syndrome", "styloid syndrome" and "stylocarotid syndrome".

**Results:** this analysis shows a progressive increase in publications over the last few years. The data analysed provide a complete overview of Eagle syndrome, its clinical manifestations like pain on chewing and swallowing as oral implications and the treatment options available.

**Conclusions:** we believe it's necessary to bring the attention to the various problems of patients suffering from this syndrome. Only with an approach that involves specialists from different branches it's possible to deal with all its manifestations.

## MINOR SALIVARY GLANDS ULTRASONOGRAPHY IN GRAFT-VERSUS-HOST DISEASE: PROOF-OF-CONCEPT

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**Aims:** Graft-Versus-Host Disease (GVHD) is a potentially serious complication following bone marrow or stem cell transplant. GVHD often manifests as inflammation and damage to minor salivary glands, due to lymphocytic infiltration, glandular atrophy, and fibrosis. The aim of the present study was to evaluate minor salivary glands ultrasonographic pattern in course of GVHD.

**Methods:** three patients (2 males, 1 female, mean age 39.3 years) with suspected GVHD were evaluated with ultra-high frequency ultrasonography (70 MHz). Ultrasonographic features including glandular dimensions, echogenicity and vascularization were registered. Minor salivary glands biopsy was then performed for diagnosis confirmation.

**Results:** histology and immunohistochemistry confirmed the

presence of GVHD in all patients. Positivity to LCA was found in all patients, while CD3+ was noted only in males. Ultrasonography revealed the presence of marked hypoechogenicity, with an increased grey ratio between the submucosa and glandular tissue. Increased vascularization was present in the peri-glandular area, while no intraglandular vascularization was observed. Resistive index was increased with values >0.90 in all patients, indicating increased arterial wall resistance which was confirmed by the presence of angioectasia on histology.

**Conclusions:** these preliminary results support a potential role for ultrasonography in the identification of GVHD, and need further assessment on larger samples to fully understand the capability of the technique in early diagnosis.

## THE ROLE OF MINOR SALIVARY GLAND BIOPSY IN THE DIAGNOSIS OF PRIMARY SYSTEMIC AMYLOIDOSIS

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**Aim:** the aim of this retrospective observational study is to assess the sensitivity and specificity of salivary gland biopsy in a cohort of patients diagnosed with Monoclonal Gammopathy of Uncertain Significance (MGUS) or Multiple Myeloma (MM) where primary systemic Amyloidosis (AL) was suspected.

**Methods:** patients diagnosed with MGUS and MM between 2018 and 2023, who are being investigated for suspected AL amyloidosis, will be included in the study. Biopsy samples were examined using Congo red staining. In patients suspected of having systemic amyloidosis, a periumbilical fat needle biopsy was initially performed. If this biopsy was negative but clinical suspicion persisted, a labial minor salivary gland biopsy was requested. A negative result from both biopsies excluded the diagnosis of systemic amyloidosis. However, if sus-

picion remained high, further organ biopsies may be considered.

**Results:** based on the preliminary data collected from the 68 patients who underwent biopsy, the minor salivary gland biopsy is anticipated to have a sensitivity of approximately 65% and a very high specificity of around 90%.

**Conclusions:** achieving good sensitivity (>60%) and good specificity (>80%) suggests that in most patients, the need for a more invasive organ biopsy could be avoided. The minor salivary gland biopsy is a less invasive procedure compared to organ biopsies. Simplifying the diagnostic process by diagnosing AL amyloidosis through salivary gland biopsy whenever possible enables early diagnosis and spares patients from undergoing a more invasive procedure.

## MICROBIOTA EVALUATION IN ORAL LICHEN PLANUS PATIENTS TREATED WITH TOPICAL CORTICOSTEROIDS

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**Aim:** evaluation of oral microbiota in OLP symptomatic patients treated with topical corticosteroids.

**Methods:** saliva samples and lingual swabs were collected from symptomatic OLP patients, before the start of topical therapy and at one, two, three, and four weeks. DNA extraction and sequencing was performed through the shallow shotgun metagenomics approach. The taxonomic classification of each read was obtained through METAnnotatorX2 bioinformatics pipeline. Species richness and beta-diversity among the samples were evaluated. ITS analysis profiling was performed, and Spearman correlation analysis was carried out.

**Results:** preliminary results showed greater fluctuation in species richness in salivary samples compared to lingual ones. Beta diversity didn't reveal distinct clusters based on collec-

tion matrices. Homogeneity among the bacterial species composition was found. *Streptococcus spp.* were more abundant in patients without candidiasis, while *Porphyromonas spp.*, were more present in patients with candidiasis. Fungal ITS profiling showed homogeneity among species with *C. albicans* as the most abundant.

**Conclusions:** in the preliminary data analysis of this study, there appears to be no difference in composition between the lingual and salivary microbiota in these OLP patients undergoing corticosteroid therapy, while there is a great variability in individual microbiota that remains stable over time. Some bacterial species may play a crucial role in the shift of *C. albicans* to pathogen. Analysis of the totality of samples could extend our results.

## A METABOLIC PROFILING STUDY ON SALIVA: FROM NORMAL ORAL MUCOSA TO DYSPLASTIC LESIONS

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**Aim:** the present multicentric case-control study aims to explore and compare salivary metabolites in healthy oral mucosa and dysplastic epithelial lesions. We search for metabolic salivary patterns characteristic of Oral Lichen Planus (OLP), dysplastic and non-dysplastic Oral Leukoplakia (OL) in comparison to the salivary metabolic profile of Healthy Controls (HC).

**Methods:** unstimulated whole saliva from 13 patients with OLP, 23 patients with OL and 21 HC were collected before surgical procedures. Demographic, anamnestic, and clinical data, risk factors and oral health status were recorded for each patient. Biopsies histopathological evaluation was performed, and results were classified in OLP and OL, with and without dysplasia. Salivary samples analysed by proton Nuclear Magnetic Resonance spectroscopy (1H-NMR).

Multivariate statistics was performed using the Metaboanalyst 5.0 platform.

**Results:** we identified and quantified about 60 metabolites in each type of salivary sample. The preliminary analysis highlighted:

1. for OLP, an altered composition in bacterial-derived metabolites, namely phenylacetate, 3-phenylpropionate, and 4-hydroxyphenylacetate, suggests a dysbiotic state associated with the disease;
2. for OL, 3 differential metabolic profiles reflecting a trend in salivary composition from healthy controls to the dysplastic form of the pathology.

**Conclusions:** the exploration of the salivary metabolome of patients with OLP and OL through 1H-NMR generated a panel of metabolites able to distinguish dysplastic lesions from healthy oral mucosa.

## SALIVARY CALPROTECTIN IN EARLY ONSET INFLAMMATORY BOWEL DISEASE: A PILOT STUDY

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**Aim:** this study compared Salivary Calprotectin (SCp) between Early Onset Inflammatory Bowel Disease (EOIBD) and Healthy Controls (HC), explored the relationship between SCp and Faecal Calprotectin (FCp) in EOIBD and assessed the prognostic accuracy of SCp in predicting disease relapses.

**Methods:** patients (n = 27) and controls (n = 9) were included, where EOIBD were divided in two groups based on their history of Oral Manifestations (OM). Participants provided stimulated whole saliva samples for SCp measurement by ELISA and stool specimens for FCp determination. Disease activity was assessed through Paediatric Ulcerative Colitis Activity Index (PUCAI) and Paediatric Crohn's Disease Activity Index (PCDAI) at baseline and follow-up.

**Results:** thirteen EOIBD had an history of OM: 12 aph-

thous-like manifestations and 3 granulomatous lesions.

EOIBD with OM reported significantly higher SCp than EOIBD without OM and HC: 155,79±60,08 pg/mL in EOBD with OM vs 82,95±51,58 pg/mL in EOIBD without OM (P <0,01\*\*) and 98,21±39,67 pg/mL in HC (P = 0,21). Despite the systemic therapy and the clinical remission, in 7 OM-EOIBD oral lesions persisted. These patients had higher SCp compared to those who experienced OM remission (P <0,05\*).

In EOIBD with OM a statistically significant positive correlation was found between SCp and FCp (P <0,05\*) and higher SCp was associated to significantly increased risk of relapse (P <0,05\*).

**Conclusions:** SCp was higher in EOIBD with OM mirroring intestinal inflammation and predicting relapses. This result suggests SCp potential as a prognostic biomarker.

## MALIGNANT TRANSFORMATION OF OLP AND OLL: 61 CASES FROM A 30 YEAR INSTITUTIONAL EXPERIENCE

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**Aim:** this prospective study aims to assess the incidence of Malignant Transformation (MT) of Oral Lichen Planus (OLP) and Oral Lichenoid Lesions (OLL). It seeks to evaluate associated risk factors, calculate time elapsed from diagnosis of OLP/OLL to MT and estimate the variability in cancerization rates based on follow-up duration.

**Methods:** in a time, span of 36 years (from 1988 to 2024) at the Odontostomatology Unit of Parma we identified 726 patients with OLP/OLL diagnosis established on the Van der Meij & Van der Waal criteria. Patients with dysplasia at the time of diagnosis were also included.

**Results:** sixty-one patients (8,4%) developed Oral Cancer (OC) with 26 cases diagnosed concomitant. Of the total OC patient, 42 were women and 19 were men, with a mean age of 66.7

years. The average time between OLP/OLL diagnosis and MT was 87.3 months for OLP and 47.5 months for OLL. The mixed and erosive forms showed the highest risk (35% each), with the buccal mucosa being the most common site for MT (30%). Moreover 17 patients were positive for HCV (27,9%) and 11 patients developed malignancies in other parts of the body.

**Conclusions:** from our data the risk of cancerization was 7.4% for OLP and 10.8% for OLL, showing a small difference between the two groups. Traditional risk factors, such as smoking or alcohol consumption, were not found to have a significant association. It's recommended to conduct a prolonged follow-up of OLP/OLL patients with risk factors such as atrophic/erosive and long-standing lesions, HCV positivity or a history of prior carcinomas to identify any clinical changes.