

## Sažetci 3. kongresa Hrvatskog društva za oralnu medicinu i patologiju Hrvatskog liječničkog zbora s međunarodnim sudjelovanjem

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#### ORALNI MUKOZITIS POVEZAN S CILJANOM TERAPIJOM RAKA – ŠTO JE STARO JE OPET NOVO

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#### Sažetak

Terapija raka prolazi kroz izvanrednu transformaciju, uz povećanu upotrebu ciljane terapije, koja napada stanice raka na način koji je precizan za specifičan put/mehanizam djelovanja te inhibitora imunoloških kontrolnih točaka koji koriste elemente imunološkog sustava bolesnika da napadnu rak. Dok su ove nove terapije značajno pridonijele poboljšanju ishoda preživljavanja, one su povezane s velikim brojem novih toksičnih reakcija, od kojih su mnoge specifične i nove u području onkologije. U literaturi je opisana toksičnost za oralnu sluznicu povezana s novim sredstvima te nazvana "stomatitis" i "mukozitis"; ali su prepoznata i karakterizirana stanja koja su različita od tradicionalnog kemoterapijom uzrokovanog oralnog mukozitisa. Kliničari moraju biti svjesni tih jedinstvenih toksičnih reakcija na oralnoj sluznici i biti u mogućnosti pružiti odgovarajuće i učinkovito liječenje kako bi se smanjile promjene doze i poboljšao ishod bolesnika. Ovo predavanje će dati pregled toksičnih reakcija na oralnoj sluznici koje su bile povezane s inhibitorima mTOR / PI3K i MET putanjama, VEGF-ciljnim inhibitorima tirozin kinaze, inhibitorima imunoloških kontrolnih točaka usmjerenih na CTLA-4 i PD / PDL-1, te terapijom CAR T stanicama.

#### ORAL MUCOSITIS WITH TARGETED CANCER THERAPIES: WHAT'S OLD IS NEW AGAIN

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#### Abstract

The cancer therapy landscape is undergoing a remarkable transformation, with increasing utilization of both targeted therapies, which attack cancer in a precise and pathway/mechanism-specific manner, and immune checkpoint inhibitors, which harness elements of the patient's immune system to attack cancer. While these new therapies have contributed significantly to improved survival outcomes, they are associated with a wide range of novel toxicities, many of which are class specific and otherwise new to the field of oncology. Oral mucosal toxicities associated with these novel agents have been described in the literature somewhat generally as "stomatitis" and "mucositis"; however distinct conditions have been recognized and characterized that are clinically different from traditional chemotherapy-associated oral mucositis. Clinicians must be aware of these unique oral toxicities and be able to provide appropriate and effective management in order to minimize dose modifications and improve patient outcomes. This talk will provide an overview of the oral toxicities that have been associated with mTOR/PI3K and MET pathway inhibitors, VEGF-targeted tyrosine kinase inhibitors, immune checkpoint inhibitors targeting CTLA-4 and PD/PDL-1, and CAR T cell therapies.

#### ORALNA MEDICINA U HRVATSKOJ – POVIJEST, SADAŠNJOST, BUDUĆNOST

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#### Sažetak

Značajne obljetnice u školskoj godini 2018/19 u Hrvatskoj za oralnu medicinu su: 350. godina Sveučilišta (1669), 100. godina Medicinskog fakulteta (Drago Perović), 95. godina sveučilišne nastave stomatologije (Eduard Radošević), 80. godina Stomatološke klinike (Ivo Čupar), 70. godina 10-to semestralne sveučilišne stomatološke edukacije (Ivo Čupar), 48. godina od početka trojne specijalizacije Dentalna i oralna patologija s parodontologijom, 43. godine od osnivanja Sekcije za dentalnu i oralnu patologiju s parodontologijom Stomatološkog društva HLZ (Zdenko Njemirovskij, Milutin Dobrenić), 20. godina Hrvatskog društva za oralnu medicinu i patologiju (HDOMP) Hrvatskog liječničkog zbora-HLZ (Ana Cekić-Arambašin). Specijalizacija iz dentalne i oralne patologije s parodontologijom razdvaja se u tri samostalne specijalističke discipline: dentalnu patologiju s endodoncijom, oralnu medicinu i parodontologiju. „Vinogradska bolnica“ danas bolnica „Sestara milosrdnica“ početkom 70-tih postala je klinička baza Stomatološkog fakulteta Sveučilišta u Zagrebu. Članovi HDOMP imaju bogatu internacionalnu suradnju najviše kroz European Association of Oral Medicine (EOAM). HDOMP je 2006. godine u Zagrebu domaćin i organizator biennialnog kongresa EAOM na kojem je sudjelovalo preko 350 sudionika, naši članovi su često „invited speakers“ u organizaciji EAOM, kao i u vodstvu EAOM-a - regionalni predstavnik za 5. regiju i generalni tajnik u dva mandata. Oralna medicina je područje stomatologije koja obuhvaća bolesti oralnih sluznica, zlijezda slinovnica, čeljusti, fokalnog kompleksa, perioralnih i facijalnih lezija kože, smetnje orofacijalne inervacije i mastikacije. Uzroci ovih bolesti su lokalne i sistavne prirode. Pa-

#### ORAL MEDICINE IN CROATIA – HISTORY, PRESENT AND FUTURE

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#### Abstract

Significant anniversaries in the school year 2018/19 in Croatia for oral medicine are: 350th year of the University (1669), 100th year of the Faculty of Medicine (Drago Perović), 95th of the University of Dentistry (Eduard Radošević), 80th Anniversary of Dental Clinics, Ivo Čupar), the 70th year of the 10th semestral university dental education (Ivo Čupar), 48th since the beginning of the triple specializations of Dental and Oral Pathology with Periodontology, 43th since the founding of the section for Dental and Oral Pathology with Periodontology of the Dental Society HLZ (Zdenko Njemirovskij, Milutin Dobrenić), 20th anniversary of the Croatian Society of Oral Pathology and Medicine (HDOMP) of the Croatian Medical Association - HLZ (Ana Cekić-Arambašin). Specialization in dental and oral pathology with periodontology is divided into three independent specialist disciplines: dental pathology with endodontics, oral medicine and periodontology. Clinical hospital "Sisters of Mercy" in the early 70s became the clinical basis of the School of Dental Medicine of the University of Zagreb. HDOMP members have a rich international co-operation mostly through the European Association of Oral Medicine (EOAM). HDOMP was the host and organizer of the EAOM Bienale Congress in 2006, attended by 350 participants, our members are often "invited speakers" for EAOM, as well as in the EAOM leadership - the regional representative for the 5th region and the Secretary General in two mandate. Oral medicine is an area of dentistry that includes oral mucosa, salivary glands, jaw, focal complexes, perioral and facial skin lesions, orofacial innervation and mastication disorders. Causes of these diseases are local and systematic. Patients have new and more demands that oral medicine specialists need to understand and

cijenti imaju nove i više zahtjeve koje specijalisti oralne medicine trebaju razumjeti i na njih odgovoriti kompetentno: preventivno, konzervativno, restauracijski, kirurški, rehabilitacijski i estetski. Djelotvorna oralna medicinska skrb poboljšava oralno zdravlje a time i cjelokupno zdravlje bolesnika.

#### STOMATOLOŠKA SKRB MEDICINSKI KOMPLEKSNIH BOLESNIKA U OPĆOJ ANESTEZIJI

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##### Sažetak

Stomatološka skrb u općoj anesteziji (OA) rezervirana je za bolesnike čije se ponašanje ne može kontrolirati različitim nefarmakološkim i farmakološkim metodama. Ovo je posebno bitno za bolesnike s intelektualnim poteškoćama koji imaju lošiju oralnu higijenu i veće potrebe za stomatološkim liječenjem u odnosu na zdravu populaciju. Za neke od tih bolesnika OA je jedini način na koji je moguće provesti stomatološko liječenje.

Prednost OA je da ne zahtijeva bolesnikovu suradnju, bolesnik je nesvjestan i ne reagira na bol a lijekovi se mogu titrirati do optimalne doze. S druge strane, stomatološki zahvat u OA ima i određene nedostatke kao što su odsutnost bolesnikovih obrambenih refleksa, depresija vitalnih funkcija te veći postotak intra i postoperativnih komplikacija u odnosu na lokalnu anesteziju. Osim toga, stomatološki zahvati u OA zahtijevaju posebnu opremu i obučeno osoblje.

Predavanje će prikazati dosadašnje iskustvo stomatoloških zahvata u OA obavljenih u jednodnevnoj kirurgiji stomatološke poliklinike Rebro na KBC Zagreb. Pokrit će se svi aspekti stomatoloških zahvata u OA: indikacije za zahvat, proces narudžbe pacijenta, preoperativna evaluacija, oralno zdravlje pacijenata i potrebe za liječenjem, obavljeni zahvati te intra i postoperativne komplikacije.

respond to competently: preventive, conservative, restorative, surgical, rehabilitative and aesthetic. Effective oral care improves oral health and thus the overall health of the patient.

#### DENTAL TREATMENT OF MEDICALLY COMPLEX PATIENTS IN GENERAL ANESTHESIA

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##### Abstract

Dental treatment in general anesthesia (GA) is reserved for patients whose behavior can not be controlled by nonpharmacological or pharmacological techniques. This is particularly relevant for patients with intellectual disabilities who have poorer oral hygiene and greater treatment needs compared to healthy population. For some of these patients GA is the only way that dental treatment can be performed.

Advantages of GA are following: it does not require patient's cooperation, patient is unconscious, unresponsive to pain and drugs can be titrated to an optimal dose. On the other hand dental treatment in GA has certain disadvantages like absence of patient's defensive reflexes, depression of vital functions and higher incidence of intra- and post operative complications compared to local anesthesia. Apart from that, dental treatment in GA requires specialized equipment and trained personnel.

Lecture will present current experience of dental treatment in GA performed in a day care dental service at the University Clinical Hospital Zagreb. All aspects of dental treatment in GA will be covered: indications for treatment, referral process, preoperative evaluation, patients' oral health and treatment needs, performed procedures, and intra and postoperative complications.

#### KLINIČKO PATOLOŠKE KORELACIJE LEZIJA ORALNE SLUZNICE

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##### Sažetak

Kliničko patološke korelacije različitih tipova oralnih lezija ovisno o istraživanju iznose od 17% do 42%. Korelacija ovisi o različitim čimbenicima koji uključuju odabir najprikladnijeg mjesta za biopsiju, veličini uzorka te subjektivne razlike od strane kliničara i patologa. Iz ovih razloga potrebni su striktni klinički i histopatološki kriteriji za postavljanje dijagnoze oralnih lezija.

Predavanje će prikazati literaturne podatke o kliničko patološkim korelacijama lezija oralne sluznice uz prikaz slučajeva iz vlastite kliničke prakse. Obuhvatit će se potencijalno zloćudne oralne lezije – leukoplakija, lichen planus; zloćudne lezije – planocelularni karcinom te ostale lezije. Za svaki pojedini slučaj prikazat će se anamneza, klinička slika i patohistološki nalaz te će se prikazati podudarnost i nepodudarnost između kliničke slike i patohistološkog nalaza.

Naglasak će biti na suradnji kliničara i patologa kao bi se što točnije postavila dijagnoza u svrhu ispravnog liječenja te pravovremenog otkrivanja potencijalno zloćudne preobrazbe oralnih lezija.

#### CLINICOPATHOLOGICAL CORRELATIONS OF ORAL LESIONS

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##### Abstract

Clinicopathological correlation of different types of oral lesions depending on the research range from 17% to 42%. Correlation depends on a variety of factors including the selection of the most suitable place for biopsy, sample size, and subjective difference by clinicians and pathologists. For these reasons, strict clinical and histopathological criteria are required for the diagnosis of oral lesions.

The lecture will present literature data on clinicopathological correlation of oral mucosal lesions with cases from clinical practice. It will cover potentially malignant oral lesions - leukoplakia, lichen planus, malignant lesions - planocellular carcinoma and other lesions. For each case, anamnesis, clinical picture and pathohistological findings will be presented, and the correlation and disparity between the clinical picture and the pathohistological finding will be shown.

The emphasis will be on the collaboration of clinicians and pathologists in order to make the correct diagnosis for the purpose of proper treatment of patients and detection of potentially malignant transformation of oral lesions

#### ULOGA STOMATOLOGA U SKRBI HEMATOLOŠKIH BOLESNIKA

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##### Sažetak

Mnoge hematološke bolesti prve manifestacije prezentiraju u usnoj šupljini. Prepoznavanjem oralnih znakova i simptoma hematoloških bolesti stomatolog može pomoći u ranoj dijagnostici hematoloških bolesti.

Također liječenje hematoloških bolesti, a koje može uključivati kemoterapiju i/ili TKMS, za posljedicu može imati mnoge manifestacije i nuspojave u usnoj šupljini koje liječe stomatolozi.

#### THE ROLE OF THE DENTIST IN MANAGEMENT OF PATIENTS WITH HEMATOLOGICAL DISORDERS

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##### Abstract

In many patients, oral manifestations are the first sign of a hematological disorders. Therefore by identifying oral signs and symptoms of hematological conditions, dentists can facilitate early diagnosis of hematological diseases.

In addition, dentists treat different oral complications in the course of treatment of hema-

Također kod hematoloških bolesnika mogu nastati anemija, neutropenija, trombocitopenija i drugi krvni poremećaji koji zahtijevaju posebnosti u stomatološkom liječenju i stomatolozi ih trebaju biti svjesni.

Liječenje hematoloških bolesti može biti kompromitirano oralnim bolestima. Odontogene upale mogu dovesti čak i do sepse. Prije početka liječenja usna šupljina bi trebala biti potpuno sanirana.

Kvalitetna suradnja hematologa i stomatologa važna je zbog smanjenja morbiditeta, pa čak i mortaliteta hematoloških bolesnika, ali i zbog bolje kvalitete života oboljelih.

#### NEKROZA ČELJUSTI UZROKOVANA LIJEKOVIMA

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##### Sažetak

Broj pacijenata koji primaju antiresorptivne (bisfosfonati, denosumabi) i/ili antiangiogene lijekove se neprestano povećava. Time se značajno povećava vjerojatnost da će se doktor dentalne medicine susresti s takvim pacijentom u svakodnevnom kliničkom radu. Medikamentozna osteonekroza čeljusti (MRONJ), engl. Medication related osteonecrosis of the jaw) je složena komplikacija navedene terapije. Liječenje može biti konzervativno ili kirurško, a ovisi o stupnju bolesti u trenutku postavljanja dijagnoze i o pacijentovom zdravstvenom stanju. Smjernice liječenja bolesti nisu jasno određene jer je bolest složena s nepredvidivim karakterom. Cilj liječenja je podići narušenu kvalitetu života pacijenta. Doktori medicine/specijalisti bi svakog pacijenta kod kojeg se planira započeti liječenje antiresorptivnim i/ili antiangiogenim lijekovima trebali uputiti na preventivni stomatološki pregled minimalno tri do četiri tjedna prije planiranog uvođenja terapije. Takav pregled uključuje uzimanje detaljne anamneze, klinički pregled, radiološku analizu, te izradu plana terapije s ciljem uklanjanja svih potencijalnih stanja koja bi mogla dovesti do stvaranja osteonekroze tijekom terapije. Od iznimne je važnosti tijekom pregleda obaviti informativni razgovor s pacijentom o riziku stvaranja nekroze, kao i motivacijski razgovor o važnosti pojačane provedbe oralne higijene i učestalih kontrolnih pregleda. Kontinuirana edukacija, zajednički i kordinirani postupci doktora medicine/specijalista i doktora dentalne medicine uz motiviranost i suradnju pacijenata će prevenirati nastanak medikamentozne osteonekroze čeljusti.

#### SUSTAVNE AUTOIMUNE BOLESTI I USNA ŠUPLJINA

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##### Sažetak

Autoimune bolesti su patološka stanja koja proizlaze iz abnormalnog imunološkog odgovora na vlastite antigene. To je multifaktorska, heterogena i varijabilna skupina stanja koja mogu zahvatiti različite organe i stanice u tijelu. Etiologija autoimunih bolesti je multifaktorska i uglavnom nepoznata.

Iz kliničke perspektive postoje dvije podjele autoimunih bolesti; organ specifične bolesti i sistemske autoimune bolesti.

Različite se autoimune bolesti mogu očitovati pojavom čitavog niza različitih patoloških lezija u usnoj šupljini. Štoviše, oralna sluznica često je prvo područje gdje se pojavljuju lezije, iako se one mogu pojaviti istovremeno s drugim manifestacijama bolesti ili kasnije tijekom razvoja iste. Promjene se na oralnoj sluznici najčešće očituju kao ulceracije, erozije ili eritem.

Promjene u usnoj šupljini često su prva manifestacija autoimunih bolesti. Zbog toga doktori dentalne medicine imajući saznanja o oralnim manifestacijama autoimunih bolesti, mogu imati važnu ulogu u otkrivanju novooboljelih. Detaljan klinički pregled cijele usne šupljine ostavlja mogućnost rane dijagnoze autoimune bolesti, čak i u asimptomatskog pacijenta. Ranija dijagnoza i pravilan terapijski protokol znatno doprinosi boljoj prognozi i povećanju kvalitete života oboljelih.

tological diseases which often comprises of high dose chemotherapy and stem cell transplantation.

Additionally, in patients suffering from hematological diseases, anemia, neutropenia and thrombocytopenia can be present, as well as other blood disorders that require dentist's special attention and expertise.

The treatment of hematological diseases can be compromised by oral diseases. Odontogenic infections can cause sepsis. Consequently, oral cavity disorders need to be addressed/tackled before the start of haematological treatment.

Tight cooperation between hematologists and dentists is important in decreasing morbidity and even mortality in hematological patients and also improves the quality of life.

#### MEDICATION RELATED OSTEONECROSIS OF THE JAW

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##### Abstract

The number of patients receiving antiresorptive (bisphosphonates, denosumabs) and/or antiangiogenic drugs is constantly increasing. This significantly increases the probability that doctor of dental medicine will meet with such a patient in daily clinical work. The medication related osteonecrosis of the jaw (MRONJ) is a complex complication of this therapy. Treatment can be conservative or surgical, depending on the degree of disease at the time of diagnosis and patient's health. The disease treatment guidelines are not clearly defined because the disease is compounded by an unpredictable character. The goal of the treatment is to raise the impaired quality of life of the patient. Physicians/specialists should refer every patient to a preventive dental examination at least three to four weeks before the planned beginning of the therapy with antiresorptive and/or antiangiogenic drugs. Such preventive dental examination involves taking detailed anamnesis, clinical examination, radiological analysis, and making a therapy plan with the aim of eliminating all potential conditions that could lead to osteonecrosis during therapy. It is of extreme importance to make an informational interview with the patient about the risk of developing necrosis during an examination, as well as a motivational talk on the importance of increased oral hygiene implementation and frequent dental check-ups. Continuous education, joint and coordinated procedures of physicians/specialists and doctors of dental medicine, with motivation and cooperation of the patients will prevent the occurrence of the medication related osteonecrosis of the jaw.

#### SYSTEMIC AUTOIMMUNE DISEASES AND ORAL CAVITY

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##### Abstract

Autoimmune diseases are rare pathological states arising from an abnormal immune response to substances and tissues that are normally present in the body. These diseases are multifactorial, heterogeneous and variable conditions that may exist in several organs and cell types. The pathomechanisms of autoimmunity are multifactorial and mostly unknown.

From a clinical perspective there are two ways to categorize autoimmune diseases; organ-specific or systemic.

Various autoimmune diseases may present with heterogeneous lesions in the oral cavity. Moreover, the oral mucosa is frequently the first area affected in many conditions, but oral lesions may also occur simultaneously with or later in the course of the disease. Changes to the oral mucous membrane that have an acute or insidious onset may manifest as blisters and ulcerations, which are the most frequent changes in the oral cavity associated with immune-mediated disorders, erosions, and erythema.

Oral signs are frequently the first manifestation of autoimmune diseases. For this reason, dentists play an important role in the detection of emerging autoimmune pathologies. Indeed, an early diagnosis can play a decisive role in improving the quality of treatment strategies as well as quality of life, thanks to specific knowledge of oral manifestations of autoimmune diseases. A detailed clinical examination of the oral mucosa of an asymptomatic patient can be the best opportunity for the early diagnosis of an autoimmune disease. An earlier diagnosis and proper therapeutic protocol will delay the dissemination of the lesions, thus greatly contributing to a better prognosis and quality of life of the patient.

**ORALNI KARCINOM**Krešimir Gršić<sup>1</sup>, Miranda Muhvić Urek<sup>2</sup>,<sup>1</sup>Klinika za bolesti uha, nosa i grla i kirurgiju glave i vrata, KBC Zagreb, Zagreb, Hrvatska<sup>2</sup>Katedra za oralnu medicinu i parodontologiju, Sveučilište u Rijeci, Medicinski fakultet, Studij Dentalne Medicine, Rijeka, Hrvatska**Sažetak**

Oralni karcinom je veliki i rastući javnozdravstveni problem. Nalazi se na 6 mjestu po učestalosti svih karcinoma u svijetu. Patohistološki najčešće se javlja planocelularni karcinom (90%). Može se razviti na bilo kojoj anatomske lokalizaciji u usnoj šupljini, no najčešće se razvija na jeziku i dnu usne šupljine. Kao najčešći rizični čimbenici navode se uživanje duhana, prekomjerna konzumacija alkohola, prehrana siromašna voćem i povrćem, loša oralna higijena, lokalna iritacija, naslijeđe/genetski čimbenici, muški spol i dob iznad 40 godina. Razvoju oralnog karcinoma mogu prethoditi oralne prekancerozne lezije (eritroplakija, leukoplakija, eritroleukoplakija, erozivni i atrofični oralni lihen).

U ranim stadijima bolesti, s obzirom na lokoregionalnu kontrolu bolesti i intenzitet ranih i kasnih nuspojava terapijskog postupka, monomodalan je kirurško liječenje prvi terapijski izbor. Kod bolesnika u uznapredovalim stadijima bolesti primjenjuje se multimodalni onkološki pristup, kombinacija kirurgije, radioterapije, te kemoterapije.

Nakon radikalne kirurške resekcije potrebno je primijeniti suvremene plastično rekonstruktivne postupke kojima će cilj biti obliteracija usne šupljine uz očuvanje premaksilni i palatinalni kontakt. Osim mandibule središnje mjesto u rekonstrukciji usne šupljine ima održavanje funkcije jezika. Uz volumnu rekonstrukciju, cilj kirurškog zahvata je sačuvati svaku senzornu i motoričku inervaciju preostalog jezika kako bi njegova anteroposteriorna pokretljivost bila održana. Poseban je naglasak na restauraciji prednje oralne trećine jezika koja je važna za oralnu pripremu bolusa hrane, te nezamjenjiva prilikom socijalne verbalne interakcije (artikulacije).

Zbog lake dostupnosti pregledu i biopsiji oralni karcinom trebao bi se dijagnosticirati u najranijem stadiju kada onkološka terapija omogućava maksimalne stope izlječenja uz održanu preterapijsku kvalitetu života pojedinca.

**ZRAČENJE GLAVE I VRATA I ORALNA SKRB PACIJENTA**Vesna Bišof<sup>1</sup>, Ana Andabak Rogulj<sup>2</sup><sup>1</sup>Klinika za onkologiju, Zavod za radijacijsku onkologiju, KBC Zagreb, Hrvatska<sup>2</sup>Zavod za oralnu medicinu, Stomatološki fakultet, Sveučilište u Zagrebu, Hrvatska**Sažetak**

Zračenje ranih stadija karcinoma glave i vrata alterantivna je metoda kirurškom zahvatu s jednakom šansom izlječenja. Kod lokoregionalno uznapredovale bolesti zračenje se primjenjuje kao dio multimodalnog liječenja (uz operativni zahvat i/ili kemoterapiju) s ciljem smanjenja učestalosti relapsa bolesti i poboljšanjem ukupnog preživljenja. Konkomitantna kemoradioterapija rezultira apsolutnim benefitom petogodišnjeg preživljenja za 6,5% u odnosu na radioterapiju samu no i značajnom učestalošću akutne i kasne toksičnosti. Neselektivni učinak terapijskog zračenja uzrokuje nastanak komplikacija u usnoj šupljini. Gotovo svi bolesnici (90-100%) podvrgnuti terapijskom zračenju glave i vrata razvijaju barem jednu od komplikacija u usnoj šupljini. Oralne komplikacije terapijskog zračenja glave i vrata dijelimo na akutne (oralni mukozitis, suhoća usta, poremećaj okusne osjetljivosti) i kronične (radijacijski karijes, trizmus, osteoradionekroza). Akutne komplikacije nastaju tijekom terapijskog zračenja i traju 3-4 tjedna po završetku terapije, a rezultat su toksičnih produkata koji nastaju u ozračenom tkivu. Kronične komplikacije razvijaju se postupno, tjednima, mjesecima ili godinama po završetku zračenja, a posljedica su smanjene opskrbe krvlju u tkivima, stvaranja vezivnog tkiva i mišićne fibroze te promjene u broju stanica. Uloga stomatologa u prevenciji i liječenju oralnih komplikacija od velikog je značaja za svakog bolesnika s obzirom na činjenicu da se time značajno utječe na njihovu kvalitetu života. Stoga bi, stomatološki pregled i adekvatna oralna skrbi bolesnika prije početka zračenja trebali biti standardni dio protokola liječenja karcinoma glave i vrata.

**HPV I USNA ŠUPLJINA**Mihael Skerlev<sup>1</sup>, Božana Lončar Brzak<sup>2</sup><sup>1</sup>Klinika za dermatovenerologiju Medicinskog fakulteta Sveučilišta u Zagrebu i Klinički bolnički centar Zagreb, Hrvatska<sup>2</sup>Zavod za oralnu medicinu, Stomatološki fakultet Sveučilišta u Zagrebu, Hrvatska**Sažetak**

U usnoj šupljini razlikujemo nekoliko vrsta lezija, većinom dobroćudnih, uzrokovanih humanim papiloma virusom (HPV), kao što su (najčešće) papilomi, šiljasti kondilomi,

**ORAL CANCER**Krešimir Gršić<sup>1</sup>, Miranda Muhvić Urek<sup>2</sup><sup>1</sup>Department of ENT, Head & Neck Surgery, University Hospital Center Zagreb, Zagreb, Croatia<sup>2</sup>Department of Oral Medicine and Periodontology, University of Rijeka, Faculty of Medicine, School of Dental Medicine, Rijeka, Croatia**Abstract**

Oral cancer is a major and growing public health problem. It is the sixth most common malignancy in the world. Histopathologically, squamous cell carcinoma (90%) is the most common form. It may affect any anatomical site in the mouth, but most commonly, it is found on the tongue and the floor of the mouth. Tobacco usage, heavy drinking of alcohol, a diet low in fresh fruits and vegetables, poor oral hygiene, local irritation, heredity/genetic factors, male sex and age over 40, are all well known risk factors. Oral precancerous lesions (erythroplakia, leukoplakia, erythroleukoplakia, erosive and atrophic oral lichen) may precede the later development of oral cancer.

In the early stages of the disease, considering the locoregional control of the disease and the intensity of early and late side effects of the therapeutic procedure, monomodal surgical treatment is the first therapeutic choice. In patients with advanced stages of the disease, a multimodal oncological approach, a combination of surgery, radiotherapy and chemotherapy, is applied.

After radical surgical resection, it is necessary to apply modern plastic reconstructive procedures that will aim to obliterate the oral cavity with preserved maxillary and palatal contact. In addition to the mandible, the central position in the reconstruction of the oral cavity has the maintenance of the function of the tongue. With volume reconstruction, the goal of the surgical procedure is to preserve any sensory and motor innervation of the remaining tongue in order to maintain its anteroposterior mobility. Particular emphasis is placed on the restoration of the first oral third of the tongue that is important for the oral preparation of the food bolus and irreplaceable in social verbal interaction (articulation). Due to the easy access of screening and biopsy, oral cancer should be diagnosed at the earliest stage when oncological therapy provides maximum overall survival rates with sustained pre-clinical quality of life for an individual.

**HEAD AND NECK IRRADIATION AND ORAL CARE OF THE PATIENT**Vesna Bišof<sup>1</sup>, Ana Andabak Rogulj<sup>2</sup><sup>1</sup>Oncology Clinic, Department of Radiation Oncology, University Clinical Hospital Center Zagreb, Croatia<sup>2</sup>Department of Oral Medicine, School of Dental Medicine University of Zagreb**Abstract**

Radiotherapy is alternative method of treatment to surgery in early stages of head and neck cancers with similar outcomes. In locoregionally advanced disease it has been applied as the part of multimodal treatment (with surgery and/or chemotherapy) with the aim of reducing the incidence of disease relapse and improving overall survival. Concomitant chemoradiotherapy results in an absolute benefit of survival of 6.5% at 5 years compared to radiotherapy alone but with a significant frequency of acute and late toxicity. Non-selective effect of RT causes complications in the oral cavity. Almost all patients (90-100%) who have undergone head and neck RT develop at least one of the complications in the oral cavity. Oral complications of head and neck RT are divided into acute (oral mucositis, dry mouth, taste disorder) and chronic (radiation caries, trismus, osteoradionecrosis). Acute complications develop during RT and last for 3-4 weeks after treatment cessation, as a result of toxic products formed in the irradiated tissue. Chronic complications develop gradually, weeks, months or years after the RT cessation, resulting from decreased blood supply to the tissues, the formation of connective tissue and muscle fibrosis, and changes in the number of cells. The role of dentists in preventing and treating of oral complications is of great importance for each patient, given the fact that this significantly affects their quality of life. Therefore, dental examination and adequate oral care of the patient before the start of RT should be a standard part of the treatment protocol for head and neck cancers.

**HPV AND ORAL CAVITY**Mihael Skerlev<sup>1</sup>, Božana Lončar Brzak<sup>2</sup><sup>1</sup>Clinic for Dermatology and Venerology, School of Medicine University of Zagreb and Clinical Hospital Centre Zagreb, Croatia<sup>2</sup>Department of Oral Medicine, School of Dental Medicine, University of Zagreb, Croatia**Abstract**

Several types of benign HPV-associated lesions can be identified in the oral cavity, such as papillomas, condylomata acuminata, common warts and focal epithelial hyperplasia.

bradavice i fokalna epitelna hiperplazija. HPV često uzrokuje lezije na oralnoj sluznici u imunokompromitiranih osoba, kao što su npr. HIV/AIDS bolesnici, u kojih mogu biti verificirani i rjeđi genotipovi virusa. U liječenju oralnih lezija najčešće se koristi odstranjivanje promjena kirurškim putem, elektrokoagulacijom ili CO<sub>2</sub> laserom, a nešto rjeđe lokalna aplikacija kemijskih sredstava. Dolazi u obzir i imunomodulatorna terapija. Do danas je identificirano oko 15 visokorizičnih genotipova HPV koji se povezuju s nastankom karcinoma cerviksa uterusa, vulve, anusa i penisa. Infekcija visoko-rizičnim tipovima HPV-a također se povezuje s oko 35%-70% karcinoma ždrijela. Iako brojni radovi ispituju njegovu vezu s oralnim karcinomom pločastih stanica, podaci u tom smislu nisu još sasvim konzistentni. Virus je moguće identificirati u oko 40% osoba s urednim nalazom oralne sluznice, ali i u osoba s različitim potencijalno zloćudnim ili upalnim lezijama u usnoj šupljini. Velika je varijabilnost nalaza virusa u različitim oralnim lezijama zbog različitih metoda identifikacije virusa, no ne može se svaki nalaz interpretirati kao „aktivna“ infekcija. Kako bi se smanjila incidencija karcinoma povezanih s HPV-om, u prvom redu, ne samo i raka vrata maternice, definitivno se i nedvosmisleno preporuča cijepljenje djevojčica i dječaka. U posljednje se vrijeme u tom smislu koristi deveterovalentno cjepivo, što predstavlja važan iskorak u prevenciji kako HPV genitalnih i oralnih infekcija, tako i malignih bolesti povezanih s HPV-om.

#### ALERGIJA NA STOMATOLOŠKE MATERIJALE - MIT ILI STVARNOST?

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#### Sažetak

Kontaktna preosjetljivost na dentalne materijale može biti profesionalna alergija kod stomatologa, dentalnih tehničara i medicinskih sestara te neprofesionalna alergiji u općoj populaciji.

Preosjetljivost se najčešće razvija na akrilate, zlato (natrijiosulfatoaurat), nikal sulfat, živu, paladij klorid (unakrsno reagira s nikal sulfatom) i kobalt klorid.

Kliničke manifestacije kontaktnih alergija na stomatološke materijale u usnoj šupljini mogu biti: objektivni simptomi poput stomatitisa i lichenoidnih reakcija.

Epikutano testiranje na metale je „zlatni“ standard za postavljanje dijagnoze kontaktne preosjetljivosti na dentalne materijale.

Kod bolesnika koji nemaju promjene na oralnoj sluznici ne savjetuje se epikutano testiranje kako bi se eventualno dokazalo da nemaju preosjetljivosti na dentalne materijale jer se testiranjem ne može dobiti relevantan podatak. Također, postoji mogućnost da se bolesnici senzibiliziraju tijekom alergološkog testiranja (npr. kada se testiraju na materijale s kojima nikada nisu došli u kontakt). Ukoliko postoji pozitivitet na dentalni materijal u epikutanom testu, dentalni materijalni (ispuni, mostovi, itd.) se uklanjaju samo ukoliko sadrže materijale pozitivne u epikutanom testu te ukoliko bolesnik ima relevantne objektivne smetnje.

#### AUTOIMUNE BULOZNE BOLESTI – SURADNJA DERMATOLOGA I STOMATOLOGA

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#### Sažetak

Autoimune bulozne bolesti su skupina bolesti karakterizirana nastankom mjehura i erozija na koži i/ili sluznicama. Mjehuri nastaju kao posljedica djelovanja protutijela usmjerenih prema strukturnim komponentama dezmosoma ili prema strukturnim komponentama zone bazalne membrane. Autoimune bulozne dermatoze se sukladno tome dijele na dvije temeljne skupine – na intraepidermalne / intraepitelne (skupina pemfigusa) i subepidermalne / subepitelne (skupina pemfigoida, stečena bulozna epidermoliza i dermatitis herpetiformis). Oralne promjene manifestiraju se nastankom mjehura i ulceracija koje su zajedničke mnogim bolestima što komplicira postavljanje dijagnoze. Promjene na koži mogu biti vrlo raznolike – od urtikarijelnog prodromalne faze koja može trajati tjednima u bolesnika s buloznim pemfigoidom do mnogobrojnih mjehura s posljedičnim erozijama i krustama proširenih po čitavom tijelu u bolesnika s vulgarnim pemfigusom, ali i drugim autoimunim buloznim dermatozama. Dijagnoza se postavlja patohistološkim analizom, direktnom i indirektnom imunofluorescijom, kao i ELISA testovima. Glavni cilj terapije je postići remisiju smanjivanjem stvaranja autoantitijela i upalnog odgovora. Uz sustavnu terapiju u kojoj se primjenjuju peroralni kortikosteroidi, imunosupresivi, IVIg, rituksimab, dapsone, doksicilin (ovisno o dijagnozi) osobito je važna lokalna terapija kojoj je

The HPV often causes lesions on the oral mucosa in immunocompromised persons, such as, for example, HIV patients, in whom less common genotypes of the virus may be involved in the pathogenesis of lesions. The most common approach in the treatment of oral lesions is surgical removal, electrocauterization or removal with CO<sub>2</sub> laser, and less frequently the lesions can be treated by local chemical application. Immunomodulatory therapy can also be an option. Fifteen high-risk genotypes of HPV viruses have been identified that are associated with the emergence of cervical cancer of the uterus, vulva, anus and penis. Infection with high-risk HPV types is also associated with about 35% -70% of oropharyngeal carcinomas. Although many papers are investigating its connection to oral squamous cell carcinoma, the data in this regard are not entirely consistent. The virus can be identified in about 40% of people without changes of oral mucosa, but also in people with various potentially malignant or inflammatory lesions in the oral cavity. There is a large variability of viral findings in different oral lesions due to various methods of virus identification, but each finding can not be interpreted as an “active” infection. In order to reduce the incidence of HPV-related cancer, in the first place, but not just cervical cancer, it is definitely unquestionably advisable to vaccinate girls and boys. The HPV vaccine (nonavalent, most recently), is definitely recommended for both girls and boys in order to prevent the genital and oral HPV-infections, as well as the HPV-associated malignant lesions.

#### ALLERGY TO DENTAL MATERIALS – MYTH OF REALITY?

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#### Abstract

The oral mucosa is exposed to a variety of potentially irritating and sensitizing dental materials capable of inducing contact allergic reactions. Contact allergy to dental materials is poorly understood.

Contact hypersensitivity to dental materials can be occupational in dentists, dental technicians and nurses and non-occupational in general population.

Hypersensitivity is mainly seen to acrylates, gold (sodium thiosulfatoaurate), nickel sulfate, mercury, palladium-chloride (it cross-react with nickel sulfate), and cobalt-chloride. The clinical manifestations of contact allergy in the oral cavity to dental materials could be objective symptoms like stomatitis and lichenoid reactions.

The “gold” standard to make diagnosis is patch test to metals.

It is not advised to patch test patients with no oral mucosal lesions to exclude possible allergy to dental materials as patch testing cannot provide a sensible answer here. Further, there is the danger that the patient may become sensitized through patch testing (especially if they never came in to contact with that particular metal which was patch tested). In the event of a positive patch test to dental materials, they should be removed only if the dental materials (fillings, bridges etc.) identified by patch testing contain the contact allergic material and if patients has relevant objective symptoms.

#### AUTOIMUNE BULOUS DISEASES – COOPERATION BETWEEN DERMATOLOGIST AND DENTIST

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#### Abstract

Autoimmune bullous diseases are characterized by blisters and erosion on the skin and/or mucous membranes. Blisters result from the action of antibodies directed against the structural components of the desmosome or the basal membrane. Autoimmune bullous dermatoses may be intraepidermal/intraepithelial (pemphigus group) or subepidermal/subepithelial (pemphigoid group, acquired bullous epidermolysis and dermatitis herpetiformis). However, oral changes blisters and ulcerations are also common to many diseases which complicates further the diagnosis. Dermal lesions may be quite different from urticarial form in prodromal phase to many blisters, erosions and crusted lesions throughout the body in patients with vulvar pemphigus and other autoimmune bullous dermatoses. The diagnosis is based on pathohistology, direct and indirect immunofluorescence as well as ELISA tests. The main goal of therapy is remission achieved by reducing the levels of the autoantibodies and inflammatory response. In addition to systemic therapy involving oral corticosteroids, immunosuppressive drugs, immunoglobulins, rituximab, dapsone or doxycycline (depending on the diagnosis), additional local therapy may improve epithelialization and suppress superinfection.

Since a significant number of autoimmune bullous dermatoses occur on the skin and mu-

cilj pospješnje epitelizacije promjena i smanjenje mogućnosti superinfekcije. S obzirom da se značajan broj autoimunih buloznih dermatoza pojavljuje i na koži i na sluznicama iznimno je važno poznavanje kliničke slike, rano prepoznavanje bolesti, što nam onda omogućava ranu dijagnozu i pravovremenu terapiju.

#### TRANSPLANTACIJA ORGANA I VAŽNOST STOMATOLOGA

Danko Mikulić<sup>1</sup>, Ivan Alajbeg<sup>2</sup>

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##### Sažetak

U Hrvatskoj se u 2017. godini transplantacijom solidnih organa liječila 321 osoba (bubrež: 164; jetra: 119; srce: 33; gušterača: 5). Kako aktivna oralna infekcija u imunosuprimiranog bolesnika potencijalno predstavlja uzrok sepse, prijetransplantacijska procjena i rehabilitacija oralnog zdravlja dio je protokola većine transplantacijskih centara. Akutnu infekciju i simptomatske zube čini se nužnim ukloniti prije transplantacije. Nije jednostavno procijeniti kako postupiti s kroničnim i asimptomatskim procesima. Dakako da bi bilo poželjno ukloniti i neakutne potencijalne odontogene izvore infekcije. Imamo dvojbu je li za pacijenta manji rizik takve procese ukloniti prije transplantacije, dok nije imunosuprimiran, ali je teško zdravstvenog stanja, ili nakon transplantacije, pri tome riskirajući razvoj sepse tijekom ranog poslijetransplantacijskog razdoblja. Element ograničenog vremena do početka imunosupresije također utječe na donošenje odluke o postupanju. Preporuke nisu temeljene na dokazima, a također ne postoje informacije o konzistentnim komplikacijama u osoba kod kojih bi se propustila provesti predtransplantacijska skrba. U Hrvatskoj se u većine transplantacijskih pacijenata protokoli ne provode, što naše podneblje čini poligonom u kojem se mogu promatrati potencijalni učinci neizvršavanja oralne pripreme. Oni nisu uočeni među bolesnicima najaktivnijeg transplantacijskog centra u Hrvatskoj. Stoga bi u predtransplantacijskoj oralnoj skrbi bilo opravdano stabilizirati oralno zdravlje, a ne eliminirati svaku potencijalnu patologiju pod svaku cijenu. Fokus oralne skrbi treba premjestiti prema kvalitetnijem priboru oralnih malignancija (planocelularnog karcinoma usne šupljine i kože glave, bazalioma, limfoma), čija incidencija znatno raste u transplantiranih osoba. U posljednje se vrijeme u osoba koje koriste lijekovi iz skupine mTOR inhibitora pojavljuju ulceracije nalik aftoznom stomatitisu. U Hrvatskoj treba posebno veliku energiju usmjeriti prema prevenciji dentalnih bolesti u kandidata za transplantaciju, poglavito u bubrežnih bolesnika kod kojih ima dovoljno vremena postići optimalno i stabilno oralno zdravlje prije transplantacije.

#### PATOLOŠKE PROMJENE NA ORALNOJ SLUZNICI I SUBJEKTIVNE SMETNJE U USNOJ ŠUPLJINI U OBOJELIH OD GASTROEZOFAGEALNE REFLUKSNE BOLESTI

Josipa Ordulj<sup>1</sup>, Marijeta Dadić<sup>1</sup>, Josipa Domazet<sup>1</sup>, Marija Mastelić<sup>1</sup> Ivana Medvedec Mikić<sup>2</sup> i Livia Cigić<sup>3</sup>

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##### Sažetak

Ciljevi: Ciljevi ovog istraživanja bili su ispitati postoji li razlika u učestalosti pojave patoloških promjena na oralnoj sluznici te prisutnosti subjektivnih simptoma u usnoj šupljini između ispitanika s gastroezofagealnom refluksnom bolesti (GERB) i ispitanika kontrolne skupine (bez GERB-a).

Materijal i metode: Istraživanje je obavljeno uspoređujući ispitnu skupinu, koju je činilo 18 ispitanika s dijagnosticiranim GERB-om, i kontrolnu skupinu od 18 zdravih ispitanika. Anamnestički su uzeti podatci svakog ispitanika o dobi, spolu, svakodnevnim navikama konzumiranja cigareta, alkohola i kave.

Nakon obavljene ezofagoduodenoskopije na odjelu za gastroenterologiju i hepatologiju KBC-a Split, ispitanici kojima je potvrđena dijagnoza GERB-a uključeni su u ispitnu skupinu.

Kliničkim pregledom svim je ispitanicima detaljno pregledana usna šupljina. Zabilježene su patološke promjene i njihova lokalizacija. Svi ispitanici su dali podatke o subjektivnim simptomima pečenja i/ili boli u usnoj šupljini.

Rezultati: Učestalost pojave patoloških lezija na sluznici usne šupljine bila je statistički značajno veća ( $P = 0,003$ ) u obojelih od GERB-a, kao i pojava subjektivnih simptoma ( $P = 0,008$ ). Od patoloških promjena na sluznici usne šupljine najčešće se javljao eritem (33,33%), dok su kao lokalizacija najzastupljeniji bili nepčani lukovi (66,67%).

Korelacija između svakodnevnih navika (konzumiranja alkohola, cigareta i kave) i patoloških lezija na sluznici usne šupljine u obojelih od GERB-a nije pokazala statistič-

cus membranes, the knowledge of various clinical manifestations is extremely important for early recognition, timely diagnosis and therapy.

#### ORGAN TRANSPLANTATION AND THE IMPORTANCE OF DENTISTS

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##### Abstract

In Croatia during 2017, 321 people (kidney: 164, liver: 119, heart: 33, pancreas: 5) underwent solid organ transplantation. Since the active oral infection potentially causes sepsis in an immunosuppressed patient, oral health assessment protocols are included in the most of transplantation centers. Acute infection and symptomatic teeth seem to be deemed for removal prior to transplantation. It is not easy to assess how to deal with chronic and asymptomatic processes. Of course, it would be desirable to remove any potential odontogenic source of infection. We are in a doubt whether the patient is less suitable to have such processes removed before transplantation, while not yet being immunosuppressed but having a severe health condition, or after transplantation, risking developing of sepsis during early post-transplant period. The element of limited time until the commencement of immunosuppression also affects the decision. Recommendations are not evidence-based, and there is also no information on consistent complications in people who would miss pre-transplantation care. In Croatia, most transplant patients do not undergo oral care protocols, which makes our environment an allegorical lab in which the potential effects of the lack of oral care can be observed. Those were not observed among patients of the most active transplantation center in Croatia. Therefore, it would be justifiable to stabilize oral health through pre-transplant oral protocols and not to eliminate any potential pathology at any cost. The focus of oral care should be shifted to better screening of oral malignancies (oral and skin squamous cell cancer, basal cell cancer, lymphoma), of which incidence significantly increases in transplant patients. Recently, aphthous-like ulcerations have appeared in people who use mTOR inhibitors. In Croatia, particularly high amount of energy needs to be directed towards the prevention of dental diseases in transplantation candidates, especially in kidney patients who have enough time to achieve optimal and stable oral health before transplantation.

#### PATHOLOGICAL CHANGES OF ORAL MUCOSA AND SUBJECTIVE SYMPTOMS IN PATIENT SUFFERING FROM GASTRO-OESOPHAGEAL REFLUX DISEASE

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##### Abstract

Objectives: The main objectives of this research were to investigate if there was a difference between the frequency of pathological changes in oral mucosa and the presence of subjective symptoms in oral cavity between the study group (subjects diagnosed with GERD) and the control group (without GERD).

Materials and methods: The research was conducted by comparing the study group consisting of 18 subjects diagnosed with GERD and the control group of 18 healthy individuals. Anamnestic data was collected for all of the individuals, including age, gender and everyday habits, such as consuming cigarettes, alcohol and coffee.

After conducting the esophagogastroduodenoscopy at University Hospital Split, the Department of Gastroenterology and Hepatology, subjects who had been diagnosed with GERD were included in the study group.

All the included subjects underwent detail clinical examination of the oral cavity. Pathological changes and their localization have been recorded and all of the subjects provided information about subjective symptoms of stinging and/or pain in the oral cavity.

Results: The mean value of the pathological lesions on the oral mucosa was statistically significantly higher ( $P = 0,003$ ) in the group of patients diagnosed with GERD, as well as the appearance of subjective symptoms ( $P = 0,008$ ). The most common pathological change on the oral cavity mucosa in the study group was erythema (33.33%), while the most common localization were palatal arches (66.67%).

Correlation between daily habits (consumption of alcohol, cigarettes and coffee) and path-

ku značajnost.

Zaključci: Patološke promjene na sluznici usne šupljine bile su učestalije u ispitanika oboljelih od GERB-a u odnosu na kontrolne ispitanike. Subjektivne smetnje u usnoj šupljini bile su značajno izraženije u ispitanika s GERB-om, dok se povezanost između tih smetnji i svakodnevnih navika konzumiranja cigareta, kave i alkohola nije pokazala značajnom.

#### UČESTALOST SIDEROPENIČNE ANEMIJE U OSOBA S GEOGRAFSKIM JEZIKOM

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##### Sažetak

Uvod: Postoje mnoge bolesti koje se mogu manifestirati geografskim jezikom. Dokazano je da je jedna od njih i sideropenična anemija.

Cilj: Glavni cilj istraživanja je bio ispitati učestalost sideropenične anemije u osoba s geografskim jezikom u odnosu na osobe sa zdravom oralnom sluznicom.

Materijal i metode: U 40 ispitanika s dijagnozom geografskog jezika te 40 ispitanika s potpuno zdravom oralnom sluznicom određene su razine hemoglobina, hematocrit, broj eritrocita, MCV, MCH, MCHC, serumsko željezo, UIBC, TIBC, serumski feritin, vitamin B12 i folna kiselina kako bi se utvrdilo postoji li razlika u pojavnosti sideropenične anemije među ispitivanim skupinama.

Rezultati: Sideropenična anemija je dijagnosticirana u 13 osoba (32,5 %) s geografskim jezikom što je u usporedbi s kontrolnom skupinom (5 %) statistički značajna razlika ( $P=0,001$ ). S obzirom na spol, veća je učestalost geografskog jezika (85 %) kao i sideropenične anemije (100 %) u žena nego u muškaraca s geografskim jezikom.

Zaključak: Rezultati ovog istraživanja pokazali su da je učestalost sideropenične anemije veća u osoba s geografskim jezikom u odnosu na osobe sa zdravom oralnom sluznicom.

#### UČESTALOST SIDEROPENIČNE ANEMIJE U BOLESNIKA S ORALNIM LIHEN PLANUSOM

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##### Sažetak

Uvod: Većina dosadašnjih istraživanja bila je usmjerena na imunološku podlogu oralnog lihen planusa (OLP), dok se samo nekolicina znanstvenih istraživanja, kao i naše, bavila hematološkom pozadinom ove bolesti. Prema podacima iz dostupne znanstvene literature, prisutnost sideropenične anemije (SA) u pojedinaca može biti povezana s pojavom OLP-a ili makar njegovom simptomatologijom.

Cilj: Glavni cilj ovog istraživanja bio je ustanoviti pojavljuje li se sideropenična anemija (SA) češće u osoba oboljelih od oralnoga lihen planusa (OLP).

Materijali i metode: U istraživanje je bilo uključeno 58 pacijenata koji su zadovoljavali kliničke kriterije za dijagnozu OLP-a. Kontrolna skupina se sastojala od 58 ispitanika bez vidljivih patoloških promjena u usnoj šupljini. Objke skupine su napravile krvne pretrage iz kojih smo ekstrahirali vrijednosti (serumsko željezo, hemoglobin, hematocrit, broj eritrocita, MCV, MCH, MCHC, RDW, UIBC, TIBC) bitne za dijagnostiku SA. Temeljem srednjih vrijednosti svih navedenih parametara napravila se usporedba među skupinama. Osim toga, usporedili smo broj ispitanika iz obje skupine čije su vrijednosti bile ispod, odnosno iznad referentnog intervala te se prema kriterijima SZO ispitala eventualna prisutnost SA. Anamnestički smo uzeli podatke o dobi (u godinama), spolu (muško/žensko) i navikama svakodnevnog konzumiranja cigareta i alkohola (da/ne).

Rezultati: Nije se pokazala statistički značajna razlika između srednjih vrijednosti ispitivanih parametara (željezo, hemoglobin, hematocrit, broj eritrocita, MCV, MCH, MCHC, RDW) ispitne i kontrolne skupine. Broj ispitanika koji su imali navedene vrijednosti van referentnog intervala nije se značajno razlikovao između ispitivanih skupina. Prema kriterijima SZO samo jedan pacijent u ispitnoj skupini, odnosno dva u kontrolnoj boluju od SA.

Zaključak: Prema podacima iz literature, postoji pretpostavka da bi SA mogla imati etiološku ulogu u pojedinaca oboljelih od OLP-a. Međutim, naše istraživanje nije dokazalo da se SA učestalije javlja u oboljelih od OLP-a nego u ispitanika zdrave kontrolne skupine. Svakako su potrebna daljnja istraživanja, uz dulje praćenje laboratorijskih promjena, da bi se potvrdili naši rezultati.

ological lesions on the oral cavity mucosa in examinees with GERD was not significant.

Conclusions: Previous findings have shown that there is a correlation between gastroesophageal reflux and the appearance of pathological changes on the oral cavity mucosa which was also shown in this study. Subjective symptoms in the oral cavity were significantly more pronounced in subjects diagnosed with GERD, while there was no association between those nuisances and daily habits of consuming alcohol, cigarettes and coffee.

#### THE INCIDENCE OF IRON DEFICIENCY ANEMIA IN PATIENTS WITH GEOGRAPHIC TONGUE

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##### Abstract

Introduction: There are many diseases that can be manifested by geographic tongue. Sideropenic anemia is proven to be one of them.

Objective: The main aim of this study is to evaluate the incidence of iron deficiency anemia in patients with geographic tongue compared to those with healthy oral mucosa.

Materials and methods: Out of 40 subjects diagnosed with geographic tongue and 40 subjects with completely healthy oral mucosa, levels of hemoglobin, hematocrit, red blood cell count, MCV, MCH, MCHC, serum iron, UIBC, TIBC, serum ferritin, vitamin B12 and folic acid were measured to identify the patients with anemia.

Results: Iron deficiency anemia was diagnosed in 13 subjects (32,5 %) with geographic tongue what is in comparison to healthy controls (5 %) statistically significant ( $P=0,00156$ ). Genderwise, higher incidence of geographic tongue (85 %) as well as iron deficiency anemia (100 %) was noticed among women with geographic tongue.

Conclusion: Results of this research indicate that incidence of iron deficiency anemia is higher in patients with geographic tongue compared to those with healthy oral mucosa.

#### PREVALENCE OF IRON DEFICIENCY ANEMIA IN PATIENTS WITH ORAL LIHEN PLANUS

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##### Abstract

Introduction: The majority of previous studies have been focused on the immunological dysregulation in oral lichen planus (OLP) patients. Thus, hematological abnormalities were infrequently investigated in OLP patients. The results of previous and present studies indicate that there is a small group of OLP patients definitely having anemia or hematinic deficiencies.

Objective: The aim of this study is to evaluate the prevalence of iron deficiency anemia (IDA) in patients with oral lichen planus (OLP) compared to healthy control subjects.

Materials and Methods: The research included 58 participants with changes in oral mucosa that met the criteria for clinical diagnosis of the OLP. The control group consisted of 58 individuals without visible pathological changes of the oral cavity. Fasting blood samples were obtained from the antecubital vein for each study participant in order to determine iron (Fe), hemoglobin (Hb), hematocrit (Hct), red blood cell count (RBC), mean corpuscular volume (MCV), mean corpuscular hemoglobin (MCH), mean corpuscular hemoglobin concentration (MCHC), red blood cell distribution (RDW), total iron binding capacity (TIBC), unsaturated iron binding capacity (UIBC).

Results: There was no statistically significant difference between the experimental and the control group in the mean values of aforementioned blood factors. The number of individuals with specified values outside the reference range was not significantly different between the two groups. According to WHO (World Health Organization) criteria, only one person (1.7 %) in the experimental group, and two (3.4 %) in the control group, had IDA.

Conclusion: It is assumed that IDA could have an etiological role in individuals suffering from OLP. However, this study has shown that the difference in prevalence of IDA between patients with OLP and healthy individuals in the control group is not statistically significant. Still, further research is required to establish findings of this study.

### UČESTALOST ORALNE KANDIDIJAZE I KOLIČINA SLINE U OBOLJELIH OD ORALNOGA LIHEN PLANUSA

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#### Sažetak

**Cilj:** Cilj istraživanja je ispitati postoji li razlika u učestalosti oralne kandidijaze u ispitanika s erozivnim oblikom oralnoga lihenusa (OLE) u odnosu na ispitanike sa sindromom pekućih usta (SPU), i to na temelju kliničkog nalaza i mikološkog brisa oralne sluznice. Drugi cilj ovog istraživanja je ispitati postoji li razlika u količini izlučene nestimulirane (Qs) i stimulirane (Qss) sline između ispitivanih skupina.

**Materijal i metode:** U istraživanje je uključeno 20 ispitanika s OLE-om koji čine ispitnu te 20 ispitanika sa SPU u kontrolnu skupinu. Svim ispitanicima je nakon kliničkog pregleda usne šupljine uzet mikološki bris oralne sluznice te im je metodom sijalometrije određena količina izlučene nestimulirane (Qs), a zatim i stimulirane (Qss) sline.

**Rezultati:** Ukupno 18 (90%) ispitanika s OLE i 17 (85%) ispitanika sa SPU imalo je negativan nalaz mikološkog brisa usne šupljine, dok njih 19 (95%) s OLE i 18 (90%) sa SPU nije imalo klinički nalaz koji bi ukazivao na kandidijazu. Razlika u učestalosti kandidijaze između ispitivanih skupina nije se pokazala statistički značajnom ( $p=0,500$ ). Tri naest ispitanika (65%) s OLE i 12 ispitanika (60%) sa SPU imalo je smanjenu količinu izlučene nestimulirane sline ( $Q_s \leq 2,0\text{ml}/5\text{min}$ ), a razlika među ispitivanim skupinama također nije bila statistički značajna ( $p=0,675$ ).

**Zaključak:** Temeljem dobivenih rezultata može se zaključiti kako nema značajne razlike među ispitivanim skupinama s obzirom na učestalost oralne kandidijaze. Iako je uočljiva veća učestalost suhoće usne šupljine temeljem nalaza sijalometrije u obje ispitivane skupine, statistički značajna razlika među skupinama nije potvrđena.

### THE INCIDENCE OF ORAL CANDIDIASIS AND AMOUNT OF SALIVA IN PATIENTS WITH ORAL LIHEN PLANUS

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#### Abstract

**Aim:** The aim of this research is to investigate whether there is a difference in the incidence of oral candidiasis in participants suffering from erosive oral lichen planus (OLP) in comparison to participants with burning mouth syndrome (BMS) pursuant to clinical findings and mycological swabs of oral mucosa. The second aim of this research is to determine whether there is a difference in the amount of unstimulated (Qs) and stimulated (Qss) saliva secretion between the two sample groups.

**Materials and methods:** The research includes 20 participants with OLP that form a test group and 20 participants with BMS that form a control group. After the clinical examination of the oral cavity, all participants were subjected to a mycological swab of oral mucosa, and the amount of unstimulated (Qs), and then stimulated (Qss) saliva was determined by the method of sialometry.

**Results:** A total of 18 (90%) participants with OLP and 17 (85%) participants with BMS tested negative to the mycological swab of the oral cavity, whereas 19 (95%) participants with OLP and 18 (90%) with BMS had regular clinical findings with no pathological changes in the oral cavity which would indicate candidiasis. The difference in the incidence of candidiasis between the two sample groups did not appear to be statistically significant ( $p=0,500$ ). 13 participants (65%) with OLP and 12 participants (60%) with BMS had a reduced amount of unstimulated saliva ( $Q_s \leq 2,0\text{ ml}/5\text{min}$ ) secretion, and the difference between the sample groups was also not statistically significant ( $p=0,675$ ).

**Conclusion:** According to the obtained results, we can conclude that there is no significant difference between the two sample groups regarding the incidence of the oral candidiasis. Although an increase in the incidence of dryness of the oral cavity was noticed in both groups following the results of sialometry, a statistically significant difference between the groups has not been confirmed.

### UPALNI MARKERI I UČESTALOST DRUGIH AUTOIMUNIH BOLESTI U OBOLJELIH OD ORALNOG LIHENA

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#### Sažetak

**Cilj:** Glavni cilj istraživanja bio je ispitati postoji li razlika u vrijednostima upalnih markera (SE, CRP-a i L) te u učestalosti drugih autoimunih bolesti između oboljelih od oralnog lihenusa (OLP) i osoba bez patoloških promjena na oralnoj sluznici.

**Materijali i metode:** U istraživanju je sudjelovalo ukupno 126 ispitanika, i to 63 ispitanika s dijagnozom OLP-a (ispitna skupina) i 63 ispitanika bez patoloških promjena na oralnoj sluznici (kontrolna skupina). Anamnestički su dobiveni podaci o spolu, dobi, navikama svakodnevnog pušenja i konzumiranja alkoholnih pića te o učestalosti druge autoimune bolesti. Svim ispitanicima izvađena je krv u svrhu određivanja vrijednosti upalnih markera (SE, CRPa i L).

**Rezultati:** Rezultati ovog istraživanja pokazali su kako nije bilo značajne razlike u prosječnoj vrijednosti SE (12,17 mm/h vs. 12,36 mm/h;  $P = 0,902$ ), CRP-a (3,56 mg/L vs. 2,45 mg/L;  $P = 0,270$ ) ni L (5,84 x 109 /L vs. 6,01 x 109 /L;  $P = 0,575$ ) između ispitivanih skupina. Što se tiče učestalosti druge autoimune bolesti, ona je bila značajno veća u oboljelih od OLP-a (39,68 % vs. 6,35 %;  $P < 0,001$ ). Najčešća druga autoimuna bolest u oboljelih od OLP-a bio je kožni lihen u 9 ispitanika (14,29 %), a zatim celijakija u njih 7 (11,11 %). Među ispitivanim skupinama nije bilo značajne razlike u navikama svakodnevnog pušenja i konzumacije alkoholnih pića ( $P = 0,308$ ).

**Zaključak:** Temeljem dobivenih rezultata može se zaključiti kako nema značajne razlike u ispitivanim vrijednostima upalnih markera, kao ni u navikama između ispitanika oboljelih od OLP-a i ispitanika bez patoloških promjena na oralnoj sluznici, za razliku od učestalosti drugih autoimunih bolesti koja je bila značajno veća u oboljelih od OLP-a.

### INFLAMMATORY MARKERS AND THE FREQUENCY OF OTHER AUTOIMUNE DISEASES IN PATIENTS WITH ORAL LIHEN PLANUS

Iva Norac Kevo<sup>1</sup>, Antonia Milas<sup>1</sup>, Anja Antea Sokač<sup>1</sup>, Antonia Vranjković<sup>1</sup>, Dolores Biočina-Lukenda<sup>2</sup> i Livia Cigić<sup>2</sup>

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#### Abstract

**Objective:** The main aim of this study was to examine whether there was a difference in inflammatory markers (SE, CRP and L) serum levels and the incidence of other autoimmune diseases between patients with oral lichen planus (OLP) and those without pathological changes on the oral mucosa.

**Materials and methods:** A total of 126 subjects participated in this study, of which 63 were diagnosed with OLP (study group) and 63 were without pathological changes on the oral mucosa (control group). Anamnestic data included gender, age, habits of daily smoking and alcohol consumption and the frequency of other autoimmune diseases. Blood samples were obtained from each study participant to determine the values of inflammatory markers (SE, CRP, and L).

**Results:** The study results have shown that there was no significant difference in average value of SE (12.17 mm/h vs. 12.36 mm/h;  $P = 0,902$ ), CRP (3.56 mg/L vs. 2.45 mg/L;  $P = 0,270$ ) nor L (5.84 x 109 /L vs. 6.01 x 109 /L;  $P = 0,575$ ) among tested groups. Regarding frequency of other autoimmune disease, it was significantly higher at patients with OLP (39.68 % vs. 6.35 %,  $P < 0,001$ ). The most common other autoimmune disease in patients with OLP was cutaneous lichen (skin lichen) in 9 test respondents (14.29 %) and the celiac disease in 7 respondents (11.11 %). Among tested groups there was no significant difference in daily smoking habits and alcohol consumption ( $P = 0,308$ ).

**Conclusion:** Based on provided results it can be concluded that there was no significant difference in tested values of inflammatory markers, as well as in habits, between patients with OLP and subjects without pathological changes on the oral mucosa, in contrast to the frequency of other autoimmune disease that was significantly higher in patients with OLP.

**VRIJEDNOSTI GLUKOZE U KRVU I UČESTALOST ŠEĆERNE BOLESTI U OBOLJELIH OD ORALNOGA LIHENA**

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**Sažetak**

Ciljevi ovog istraživanja bili su ispitati postoji li razlika u prosječnoj razini glukoze u krvi i u učestalosti šećerne bolesti između ispitanika s OLP-om i ispitanika bez patoloških promjena na sluznici usne šupljine. Anamnestički su od svakog ispitanika (n = 126) uzeti podatci o dobi, spolu, navici svakodnevnog pušenja cigareta i konzumiranja alkohola te prisutnosti šećerne bolesti. Izmjerene su im tjelesna težina i visina za izračun indeksa tjelesne mase te im je izmjeren krvni tlak. Uzorci krvi izvađeni su svakom od ispitanika kako bi se odredile vrijednosti glukoze u krvi. Ispitnu skupinu činila su 63 ispitanika s dijagnozom OLP-a, a kontrolnu skupinu činila su 63 ispitanika bez patoloških promjena na oralnoj sluznici. Prosječna vrijednost glukoze u krvi u ispitanika oboljelih od OLP-a iznosila je 5,45, dok je prosječna vrijednost u ispitanika kontrolne skupine bila 5,32. Vrijednosti su bile slične u obje ispitivane skupine i razlika među njima se nije pokazala statistički značajnom (P = 0,497). Povišenu razinu GUK (> 6,4 mmol/L) imalo je četvero ispitanika (6,3 %) u ispitnoj skupini te troje u kontrolnoj skupini (4,8 %). Razlika među skupinama u učestalosti šećerne bolesti također nije bila statistički značajna (P = 0,198). Šećerna bolest spominje se kao mogući etiološki čimbenik u razvoju OLP-a, ali točan mehanizam povezanosti ove dvije bolesti i dalje ostaje nepoznanica. Svakako su potrebna buduća istraživanja na većem uzorku kako bi se utvrdila njihova povezanost.

**BLOOD GLUCOSE LEVEL AND FREQUENCY OF DIABETES MELLITUS IN PATIENTS WITH ORAL LICHEN PLANUS**

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**Abstract**

The main aim of this study was to examine whether there was a difference in average glucose level in blood and frequency of diabetes mellitus between patients with oral lichen planus (OLP) and those without pathological changes of the oral mucosa. Anamnestic data from every study participant (n=126) included age, gender, smoking habits and alcohol consumption and presence of diabetes mellitus. Body weight and height were determined in order to calculate body mass index (BMI). Also blood pressure was measured for every study participant. Blood samples were obtained from each study participant to determine the values of glucose. Study group contained 63 participants diagnosed with OLP, whereas control group also contained 63 participants without pathological changes of oral mucosa. Average amount of glucose in blood of participants with OLP from the study group was 5,45, while the average amount of glucose in blood in control group was 5,32. Average amounts were similar in both groups and there was not significant difference (P = 0,497). Increased level of glucose in blood (>6,4 mmol/L) was measured for only four participants (6,3 %) from the study group and three participants from control group (4,8 %). Difference between groups in frequency of diabetes mellitus was also not significant (P = 0,198). Diabetes mellitus is suggested as a possible etiological factor in development of OLP, but exact causative relationship between these two diseases still remains unknown. Further research including more subjects are required to confirm or abrogate the findings of this study.