PULSUS
WWW.PULSUSCONFERENCE.COM
39 YEARS IN ASSESSING THE IMPACT OF HEALTHCARE RESEARCH

5th World Congress on

Dentistry and Maxillofacial Surgery

September 18-19, 2023 | Rome, Italy

Day-1

Scientific Tracks & Abstracts

38 YEARS OF EXCELLENCE IN MEDICAL PUBLISHING

Sessions

Dentistry | Endodontics | Dental Health | Orthodontics | Oral and Maxillofacial surgery | Restorative Dentistry

Session Chair
Mehmet Irfan Karadede
Izmir Katip Celebi University | Turkey

Session Introduction

Title: **Superior protocol - temporary implant**
Aline Marodin | University of Porto | Portugal

Title: **Different perspective to different Maxillofacial types**
Beyza Karadede Unal | Izmir Katip Celebi University | Turkey

PULSUS
WWW.PULSUSCONFERENCE.COM
39 YEARS IN ASSESSING THE IMPACT OF HEALTHCARE RESEARCH

5th World Congress on

DENTISTRY AND MAXILLOFACIAL SURGERY

September 18-19, 2023 | Rome, Italy

Received Date: 08-12-2023 | Accepted Date: 08-15-2023 | Published Date: 10-20-2023

Superior protocol - temporary implant

Aline Marodin[1], Levy Rau[2], Luis Tovim[3], João Onofre[4], Bruno Mello[5], Paula Vaz[6]
[1]University of Porto, Portugal
[2]University of Porto, Portugal
[3]Portugal Dental Derme Figueira da Foz, Portugal
[4]University of Porto, Portugal
[5]UNISUL, Brasil
[6]Carevage, Braga, Portugal

A temporary dental implant is a medical device which is temporarily used to support a prosthesis such as an artificial tooth used for restoring patient's masticatory function during implant treatment. It is implanted in the oral cavity to substitute for the role of tooth (KIM et al; 2017).

Most of the literature points to the disadvantages and problems inherent to the early placement of dental implants, especially in the anterior sector.

Of these, continuous tooth movement/extrusion of adjacent teeth and the inability of fixed prosthetic rehabilitation and dental implants to accompany this extrusion stand out (JENSEN, 2019.)

It is true that it is precisely in the anterior sector that fixed implant rehabilitation solutions exist, even in children and adolescents, where the psychological and social impact inherent to missing teeth are very high.

The Research and Industry should walk together in order to solve problems related with dental implants Rehabilitations and promote innovation and development with targets to serve the community of Investigators, Industry and the patients.

So, Thus, if we think that recent studies point to the great stability of implants in Zirconia, in a single piece (Kohal et al, 2013, Balmer et al, 2018).

It would be a challenge to create implants in Zirconia in 2 pieces, even knowing the technological development needs to achieve the goals (Neugebauer et al, 2023) or to customize ceramic dental implants (Dantas T et al, 2021; Dantas T et al, 2022).

Even with the notion that there are errors in image acquisition and planning, the fact is that there are steps taken in an attempt to customize implants. In superior rehabilitation, especially in immediate protocols, the placement of zirconia implants can be a rehabilitation option with great advantages. (Figure 1)

An innovative protocol for immediate superior rehabilitation is presented.

Recent Publications

1. M H Kim, E J Cho, J W Lee, E K Kim, S H Yoo, C W Park. A study on setting of the fatigue limit of temporary dental implants. Clin Oral Implants Res. 2018 Mar;29(3):290-299. doi: 10.1111/clr.13115. Epub 2018 Jan 12.
2. Simon Storgård Jensen. Timing of implant placement after traumatic dental injury.Dental Traumatology. Volume35, Issue6. December 2019. Pages 376-379
3. Marc Balmer, Benedikt C Spies, Kirstin Vach, Ralf-Joachim Kohal, Christoph H F Hämmerle, Ronald E Jung. Three-year analysis of zirconia implants used for single-tooth replacement and three-unit fixed dental prostheses: A prospective multicenter study. Clin Oral Implants Res 2018 Mar;29(3):290-299. doi: 10.1111/clr.13115. Epub 2018 Jan 12.

Biography

Aline Marodin has her expertise in Oral surgery and nowadays is focused on Dental Implant Complications and Orofacial Rehabilitation. The years of clinical experience are going to be fulfilled by a Phd at University of Porto, Portugal. Both in Clinic Practice (Clin D, Prevage by Paula Vaz) and research for improving knowledge education institutions (FMDUP, LAETA, Porto University) allow to serve DR. Paula Vaz Team Research in the field of Oral Rehabilitation, Dental Implants in a translational thinking of Science and Innovation.

e: alinemarodin@hotmail.com

Figure 1: Innovative solutions for Implant superior Protocol.

PULSUS
WWW.PULSUSCONFERENCE.COM
39 YEARS IN ASSESSING THE IMPACT OF HEALTHCARE RESEARCH

5th World Congress on

DENTISTRY AND MAXILLOFACIAL SURGERY

September 18-19, 2023 | Rome, Italy

Received Date: 03-20-2023 | Accepted Date: 03-24-2023 | Published Date: 10-20-2023

Different perspective to different Maxillofacial types

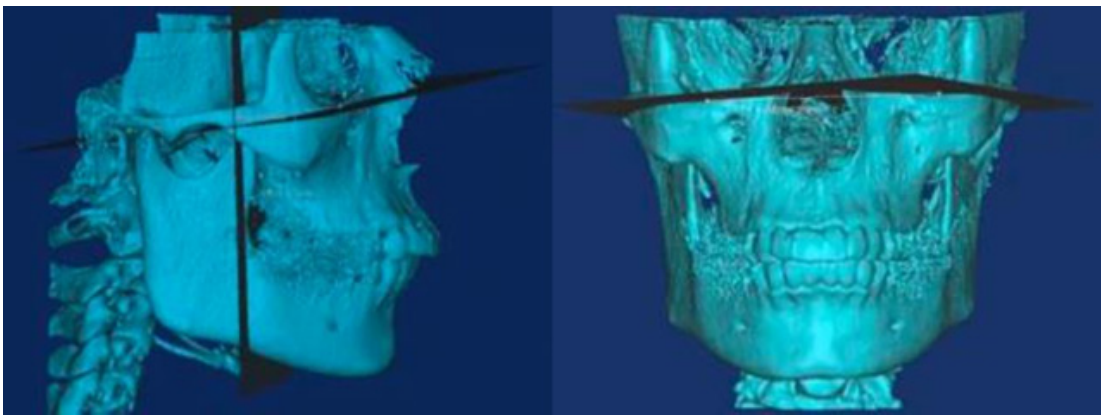
Beyza Karadede Unal
Izmir Katip Celebi University, Turkey

Many imaging devices are used in dentistry today. Especially in orthodontics, three-dimensional imaging (3D) is gaining popularity and maintains its currency. Cone beam computed tomography (CBCT) is frequently used in orthodontics to examine tooth movements in all three planes of space and to analyze the state of skeletal structures in all aspects of space.

When Class 1, 2 and 3 anomalies are evaluated with 3D modalities such as CBCT, stereophotogrammetry and oral scanning, they can show quite different characteristics both among each other and within themselves. When skeletal anomalies were compared both maxilla and mandible volumes are greater in Class 2 and 3 short face type than long face type. Studies evaluating Class III individuals within themselves have also shown that those with a hypodivergent facial pattern have a greater mandibular volume compared to those with a hyperdivergent pattern. Studies have shown that there is a statistically significant relationship between facial growth pattern and alveolar bone height and thickness.

When the relationship between tooth size anomalies and malocclusion is examined, class 2 individuals have higher mesiodistal and buccolingual tooth dimensions than class 1 and 3. In studies evaluating the mesiodistal dimensions of the teeth, statistically significant differences were found in patients with Class III malocclusion.

Mastering the morphological features of various anomalies is very important to create an accurate treatment plan and prediction. 3D technology enables us to do this. The clinical evidence to support the efficiency and effectiveness of these appliances is varied, as no single system emerging clearly superior.



Recent Publications

1. Deguchi T, Katashiba S, Inami T, Foong KWC, Huak CY; Morphologic quantification of the maxilla and the mandible with cone–beam computed tomography, Am J Orthod Dentofacial Orthop. 2010; 137:218-22

2. Karadede B. "Farklı Iskeletsel Yüz Tiplerine Sahip Bireylerin Maksilla ve Mandibula Hacimlerinin Konik Işınlı Bilgisayarlı Tomografi Yöntemi Ile Incenmesi." DoctoralThesis, December 2015.
3. Gaffuri F, Cossellu G, Maspero C, Lanteri V, Ugolini A, Rasperini G, Castro IO, Farronato M. Correlation between facial growth patterns and cortical bone thickness assessed with cone-beam computed tomography in young adult untreated patients. Saudi Dent J. 2021 Mar;33(3):161-167.

Biography

Associate Professor Beyza Karadede Unal has two PhD about Orthodontics and Histology-Embryology. In 2016, she continued part of her academic and clinical education in the Maxillafacial Department at St. George's University Hospital and Kingston Hospital. During this period, she increased her experience in dentofacial deformities and orthognathic surgery. She transfers her clinical experience and knowledge gained during her academic career in her domestic and international experiences to her students. She supervised 3 PhD students and 6 specialist training studen ts and still refers 3 PhD students. Dr. Dr. Karadede Unal, who has many peer-reviewed publications, has original, rational, systematic, objective, open to criticism and consistent working principles. Kawwradede Unal's works include 18 national, international refereed articles, 44 oral and poster presentations, chapter authorship in 1 international book, chapter authorship in 4 national books, editorship in 1 national book, speaker in 14 meetings, participant in more than 50 congresses and course programs.

e: dr.beyzakaradede@gmail.com

Sessions

Periodontics | Dental Surgery | Dental Anatomy | Dental Implants | Cosmetics Dentistry

Session Chair
Paula Vaz
University of Porto| Portugal

Session Introduction

Title: ***In vitro* study on the effect of various treatments on bacterial adhesion to implant surfaces**
Riccardo Beltrami | University of Pavia | Italy

Title: **Improvement of gingival condition following atelocollagen injection**
Sylwia Klewin-Steinbock | Poznan University of Medical Science| Poland

Title: **Corrosion of metals used in Orthodontic Treatment**
Bersan Karadede | Yalova University| Turkey

Title: **Bone Plant: Innovation in alveolar ridge one-step reconstruction and implantation**
Edwin Rostami | Director of Imperial Implant Center LLC | Armenia

Title: **Periodontal tissue status after photodynamic therapy with EGCG incorporated liposomal particles**
Marzena Liliana Wyganowska | Poznan University of Medical Science | Poland

Title: **What can we have in the supply of prosthetic technicians - resin instead of zirconia?**
Carmen Conroy | Clinical Team of Smile Arade| Portugal

Title: **How to instruct and investigate supply and compliance of Oral rehabilitation** material in **Dentistry**
Hugo Chamusca | University of Porto | Portugal

Title: **Protection of neuroglobin against cerebral ischemia/reperfusion injury in rats through mitochondria- and endoplasmic reticulum stress-related apoptosis pathways**
Xu Jianping | Hospital of Soochow University | China

PULSUS
WWW.PULSUSCONFERENCE.COM
39 YEARS IN ASSESSING THE IMPACT OF HEALTHCARE RESEARCH

5th World Congress on

DENTISTRY AND MAXILLOFACIAL SURGERY

September 18-19, 2023 | Rome, Italy

Received Date: 03-31-2023 | Accepted Date: 04-04-2023 | Published Date: 10-20-2023

In vitro study on the effect of various treatments on bacterial adhesion to implant surfaces

Riccardo Beltrami, Saturnino Marco Lupi, Ruggero Rodriguez y Baena
University of Pavia, Italy

Background: Peri-implantitis can be caused by various risk factors, including surface treatment, which can affect the physical structure and micro- and nano-morphology of implant surfaces. Titanium dioxide (TiO2) can exist in different forms, such as amorphous or crystalline, including anatase and brookite. This study aimed to assess the antibacterial properties of grade IV and grade V titanium implants treated with four different surface treatments.

Methods: Titanium disks of grade IV and V underwent the following surface treatments: machining (G1), machining and anodization (G2), sandblasting and etching (G3), and sandblasting, etching, and anodization (G4). The physical structure of the surfaces was evaluated using MicroRaman spectroscopy. An in vitro bacterial adherence test was conducted using a reference strain of S. aureus (ATCC BAA-1717), and the results were expressed as Colony Forming Units (CFU).

Results: The grade V titanium samples showed no crystalline structural organization regardless of surface treatment. Among the grade IV samples, only the G4 group showed a Raman signal indicating the presence of anatase. Anodizing increased the antibacterial activity only on the micro-rough surfaces of grade V samples. In grade IV samples, the anodization treatment reduced bacterial adhesion on both machined and micro-rough surfaces, thereby allowing a decrease in bacterial adhesion.

Conclusions: The surface treatment and bulk material can influence bacterial adhesion, which may lead to peri-implant pathologies. Surfaces that reduce bacterial adhesion could help reduce the incidence of such pathologies.

Recent Publications

1. Chen W, Oh S, Ong AP, Oh N, Liu Y, Courtney HS, Appleford M, Ong JL. Antibacterial and osteogenic properties of silver-containing hydroxyapatite coatings produced using a sol gel process. J Biomed Mater Res A. 2007 Sep 15;82(4):899-906. doi: 10.1002/jbm.a.31197. PMID: 17335020.
2. Chen W, Liu Y, Courtney HS, Bettenga M, Agrawal CM, Bumgardner JD, Ong JL. In vitro anti-bacterial and biological properties of magnetron co-sputtered silver-containing hydroxyapatite coating. Biomaterials. 2006 Nov;27(32):5512-7. doi: 10.1016/j.biomaterials.2006.07.003. Epub 2006 Jul 26. PMID: 16872671.
3. Brunetto PS, Slenters TV, Fromm KM. In vitro Biocompatibility of New Silver(I) Coordination Compound Coated-Surfaces for Dental Implant Applications. Materials (Basel). 2011 Jan 28;4(2):355-367. doi: 10.3390/ma4020355. PMID: 28879994; PMCID: PMC5448490.

Biography

Riccardo Beltrami is from University of Pavia, Italy. He is interested in Biomedical Statistics, oral surgeon with numerous publications in the field of oral health and biomaterials. Researcher and private practitioner in Pavia (Italy).

E: riccardo.beltrami01@universitadipavia.it

PULSUS
WWW.PULSUSCONFERENCE.COM
39 YEARS IN ASSESSING THE IMPACT OF HEALTHCARE RESEARCH

5th World Congress on

DENTISTRY AND MAXILLOFACIAL SURGERY

September 18-19, 2023 | Rome, Italy

Received Date: 03-27-2023 | Accepted Date: 03-29-2023 | Published Date: 10-20-2023

Improvement of gingival condition following atelocollagen injection

Sylwia Klewin-Steinböck, Marzena Wyganowska
Poznan University of Medical Science, Poland

Statement of the Problem: Periodontal disease is one of the main causes of tooth loss and the second most common oral disease after caries. The condition of the gingiva significantly affects the outcome of dental treatment. A healthy gingiva is firm, pink in color and has no visible inflammation. Gingivitis, the most visible symptom of periodontal disease, is confined to the superficial gingival tissue. Clinical signs of gingivitis include swelling, erythema and bleeding after minor trauma (tooth brushing, sometimes chewing). Bleeding on probing (BOP) is an objective symptom of inflammation, attesting bleeding simply as present or absent on tooth surface. In some patients, especially those with autoimmune diseases, bleeding occurs even in the absence of other signs of gingivitis. Methodology & Theoretical Orientation: The study used the collagen material, Linerase, which is a class III medical device in the form of lyophilized type I equine atelocollagen. A 0.05 ml of solution (atelocollagen thinned with 5 ml 0.9% NaCl) was injected into keratinized gingiva, two millimeters above the base of the gingival papillae, four times at two-week intervals. BOP was measured at each visit prior to injection. Findings: After the first injection of atelocollagen, bleeding was significantly reduced, and the BOP value gradually decreased with each injection. The greatest decrease in the number of bleeding points was observed after the first and second injection. Continuation of the injections resulted in the improvement and stabilization of clinical condition. Conclusion & Significance: The measurement of bleeding tendency should be a standard procedure during an oral examination to help identify the areas at risk of further destruction and to plan proper treatment. Regenerative procedures should become a regular part of treatment plans with scaling, root planning and other surgical procedures.

Recent Publications

1. Klewin-Steinböck S, Nowak-Terpiłowska A, Adamski Z, Grocholewicz K, Wyganowska-Swiatkowska M (2021) Effect of injectable equine collagen type I on metabolic activity and apoptosis of gingival fibroblasts. Adv Dermatol Allergo 38:440–445.
2. Klewin-Steinböck S, Wyganowska M (2023) Reduction in Gingival Bleeding after Atelocollagen Injection in Patients with Hashimoto's Disease-A Pilot Study. Int J Environ Res Public Health 20(4):2954.
3. Checchi L, Montevecchi M, Checchi V, Zappulla F (2009) The relationship between bleeding on probing and subgingival deposits. An endoscopical evaluation. Open Dent J 3:154–160.

Biography

Dr Klewin-Steinböck has over 20 years of clinical experience in dentistry. Graduated from Poznan University of Medical Science, she has also completed post-graduate studies in Facial Aesthetics. PhD degree obtained after defending the thesis: “Heterogeneity of gingival and palatal fibroblasts in the aspect of recession treatment”. Her major interests include periodontology and the possibility of using substances used in aesthetic medicine for gingival bioregeneration and biostimulation. Currently, she is an Assistant at the Department of Dental Surgery, Periodontology and Oral Mucosa Diseases.

E: sylwiasteinb@wp.pl , sklewinsteinbock@ump.edu.pl

PULSUS
WWW.PULSUSCONFERENCE.COM
39 YEARS IN ASSESSING THE IMPACT OF HEALTHCARE RESEARCH

5th World Congress on

DENTISTRY AND MAXILLOFACIAL SURGERY

September 18-19, 2023 | Rome, Italy

Received Date: 03-20-2023 | Accepted Date: 03-24-2023 | Published Date: 10-20-2023

Corrosion Of Metals Used In Orthodontic Treatment

Berşan Karadede
Yalova University, Turkey

Side effects caused by metals used for therapeutic purposes in the human body have been known for a long time. These metals can cause toxic or allergic reactions in the human body. Allergies are directly related to the immune system. Allergies may be characterized by local or general allergic manifestations in the human body. Today, allergic reactions caused by metals is a very important problem that is not overemphasized in modern orthodontics, does not occupy the agenda much, but will require more attention in the future. In this presentation titled "Corrosion of Metals Used in Orthodontic Treatment", it is aimed to examine and evaluate all these conditions in detail.

Allergic reactions are triggered as a result of the release of metal ions to the environment following the corrosion of the relevant metal or alloy. Allergy, in the most general terms, is the reaction of the body's immune system to chemical agents. Depending on the metal or alloy used for therapeutic purposes, different levels of allergic reactions may occur in the individual. In such cases, it is mentioned that genetic factors may also be effective. In addition to these, carcinogenic, mutagenic and cytotoxic effects of metals or alloys have also been reported in studies. The body's responses to allergic reactions may occur as early or late type. In clinical studies by researchers, significant changes in the ion levels of metals in tissue fluids have been detected after the use of metals or alloys in orthodontic treatments. For this reason, metals or alloys should not be considered biologically inert. However, when the body's contact with the metal or alloy is cut off, the tissues heal and recover.

As a result, when taking anamnesis from individuals who will receive fixed mechanical orthodontic treatment, it should be asked in detail whether they have metal allergy or any substance or any kind of allergy. If there is a suspicious situation, an allergy test should be requested. The allergic condition that occurs during the treatment should be carefully evaluated and necessary measures should be taken quickly.

Recent Publications

1. Karadede Berşan; “Prospective Investigation of NLRC4 Inflammasome Pathway Gene Expression Levels in Patients Using Orthodontic Fixed Mechanics”, Supervisor: Veli İ, Berdeli AH, İzmir Katip Çelebi University, Institute of Health Sciences, Department of Orthodontics, 2021, İzmir, Türkiye.
2. Toms AP. The corrosion of orthodontic wire. Eur J Orthod 1988; 10(2):87-97.
3. Canna SW, de Jesus AA, Gouni S, et al. An activating NLRC4 inflammasome mutation causes auto inflammation with recurrent macrophage activation syndrome. Nat Genet 2014; 46: 1140–6.

Biography

Berşan Karadede, graduated from the Faculty of Dentistry in 2016 with her thesis named “Maxillofacial Surgery Techniques and Complications”. In 2021, she received her PhD in orthodontics by conducting a multidisciplinary thesis named “Prospective Investigation of NLRC4 Inflammasome Pathway Gene Expression Levels in Patients Using Orthodontic Fixed Mechanics”. She started her second doctorate in the field of "Health Law" in 2021. She made clinical observations in Germany in 2017, 2021 and in Spain in 2022. She has been an invited speaker, organizer and participant in many scientific organizations. She has many international and national publications, book chapter authorship and refereeing. She gave lectures at İzmir Katip Çelebi University between 2019-2021.

E: dr.bersankaradede@gmail.com

PULSUS
WWW.PULSUSCONFERENCE.COM
39 YEARS IN ASSESSING THE IMPACT OF HEALTHCARE RESEARCH

5th World Congress on

DENTISTRY AND MAXILLOFACIAL SURGERY

September 18-19, 2023 | Rome, Italy

Received Date: 08-01-2023 | Accepted Date: 08-03-2023 | Published Date: 10-20-2023

Bone Plant: Innovation in alveolar ridge one-step reconstruction and implantation

Edwin Rostami[1], Koryun Rostami[1], Ilen Rostami[2], Gagik Hakobyan[3]
[1] Imperial Implant Center, Armenia
[2] Yerevan State Medical University, Armenia

Statement of the Problem: Dental rehabilitation in edentulous patients with severe maxillary resorption has traditionally been treated with bone grafting to restore the alveolar ridge. This complex technique has a number of problems, including unpredictable medium to long term success rates and overall cost. The search for new methods and materials dictates a search for the development of less invasive approaches.

To avoiding these complications we suggest new solution – BonePlant.

Objectives: The purpose of the study was to assess the effectiveness of using a Bone Plant implant in individuals who had various degrees of alveolar ridge erosion..

Materials and Methods: This clinical study included 17 patients (30-78 years old) 11 maxillary and 6 mandible, with different stages of alveolar ridges resorption, with functional and aesthetic complaints requiring and with follow up period of average 4 years. To plan implant therapy, clinical, laboratory, and computed tomography techniques were employed.

There are 49 implants total in the bone plant. Approximately 4 months after the procedures, loading began. In the clinic, prosthetics were created in accordance with approved procedures. Fixed prostheses on implants were used to rehab the patients, with good aesthetic and functional outcomes.

The following factors were examined in order to assess the effectiveness of prosthetic rehabilitation: implant success, prosthesis survival, and implant marginal bone level (MBL). MBL was assess by digital x-ray were taken immediately and 3 months, 1 year, and 4 years after implant installation. A subsequent CT scan was done to evaluate the implant's precision.

Results: There were no significant intraoperative or immediate postoperative problems during the postoperative periods in any of the patients. Clinical and X-ray investigations six months after the prosthetic rehabilitation revealed no evidence of inflammation around the implants. We had one instance where an implant was revealed as a result of using the incorrect surgical approach, therefore we had to perform a second surgery to hide the exposed wound. Unfortunately, an infection caused us to lose 2 bone plant implants.

After 3 months loss of the marginal bone of 0.2 ± 0.25 mm (MBL), after 12 months of observation, there was a slight loss of the marginal bone over time 0,8 ± 0.48 mm (MBL), 1,3 ± 0.32. mm (MBL), after 4 years of observation. After 5 years, the effectiveness of implants was 97.4%.

Conclusion: Bone plant is a cutting-edge solution that allows us to concurrently implant and restore a variety of alveolar ridge abnormalities, minimizing additional risks associated with conventional methods. The achieved graft is extremely reliable and provides the option to load in less time.

Recent Publications

1. Hakobyan, G., Boyadjian, A., Boyadjian, M, Harutyunyan A. et al. Clinical advantages of improving the excessive gingival display (EGD) by surgical repositioning of the upper lip. Clin Oral Invest 26, 7265–7275 (2022).
2. Hakobyan G. et al. Clinical Outcome of Immediate Loading UV-Photofunctionalized Implants in Patients with Completely Edentulous Mandible, Placed with Guided Surgery. J. Maxillofac. Oral Surg. (2022). DOI:10.1007/s12663-022-01798-z
3. Hakobyan G. et al.Evaluation of the survival rate of short implants placed in the posterior atrophic mandible: 5-year clinical study. Quintessence Int 2022 Aug 17;53(8):690-696.

Biography

Edwin Rostami is a distinguished and highly accomplished oral and maxillofacial surgeon, renowned for his expertise in treating complex oral and maxillofacial problems and diseases. With a wealth of surgical experience and a commitment to excellence, Dr. Rostami has made significant contributions to the field of oral and maxillofacial surgery. Dr. Rostami's vision and leadership shine through in his role as the Owner and Director of the "Imperial Implant Center" LLC. In this capacity, he has overseen the growth and success of this esteemed institution, known for its excellence in oral and maxillofacial surgery. His responsibilities extend beyond the operating room, as he also coordinates the daily activities of the clinical and administrative staff, ensuring that patients receive the highest level of care and service.

E: edwin_rostami@yahoo.com

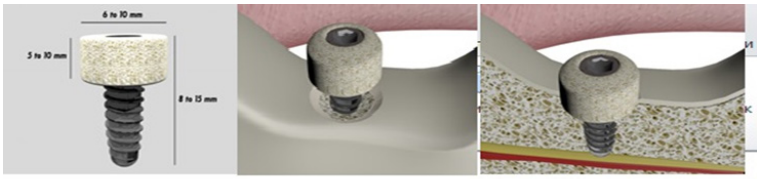


Fig.1,2,3 Bone Plant combination of cylindric allograft bone and implant fixture

Case 1 Fig.7,8,9 After exposure of the alveolar bone segment, the bone site of implant is prepared, after which the implant fixture is inserted into the site and the cylindric allograft bone fills the bone defect.

Case2

After exposure of the alveolar bone segment, the bone site of implant is prepared, after which the implant fixture is inserted into the site and the cylindric allograft bone fills the bone defect.

Case2 Fig.18,19,20 before the installation of abutments, the gum healings formers were removed

Case 2 Fig.21,22 Final prosthetics with a ceramic-metal bridge based on implants. X-ray after implantation

PULSUS
WWW.PULSUSCONFERENCE.COM
39 YEARS IN ASSESSING THE IMPACT OF HEALTHCARE RESEARCH

5th World Congress on

DENTISTRY AND MAXILLOFACIAL SURGERY

September 18-19, 2023 | Rome, Italy

Received Date: 03-27-2023 | Accepted Date: 03-29-2023 | Published Date: 10-20-2023

Periodontal tissue status after photodynamic therapy with EGCG incorporated liposomal particles

Marzena Wyganowska[1], Izabela Nowak[2], Volha Bazyk-Novikava[3]
[1]Poznan University of Medical Science, Poland
[2]Poznan Adam Mickiewicz University, Poland
[3]University of Medical Science, Poland

Statement of the Problem: The fundamental principle of the treatment of periodontal diseases is antimicrobial therapy. Laser treatment has a positive impact. Today, one of the methods of periodontitis treatment using lasers is antibacterial photodynamic therapy, which allows to reduce the number of periodontopathogens, activate the synthesis of nucleic acids (DNA, RNA), enzyme activity, and redox reactions. Green tea reduces metalloproteinases activity and is a possible photosensitizer. The purpose of this study is to use the natural photosensitizer – green tea active component closed in liposomal particles and blue laser light applicated directly into subgingival area. Methodology & Theoretical Orientation: The preliminary stage of the study included 17 patients with chronic periodontal disease of moderate severity. The studies were conducted by quadrants in the same patient. In one quadrant, only the EGCG gel was applied, in the other, irradiation was performed after the pre-applied gel, in the third, only a laser was used. The course of treatment included three sessions with an interval between sessions of 3-4 days. After completion, microbiological samples were taken from the control pockets of each quadrant. The patient was given general recommendations for correcting oral hygiene. They were invited for a follow-up examination after 3 months. Findings: Statistically significant reductions of the bacterial counts were observed in all experimental groups in comparison with the initial value before treatment ($p < 0.05$). Highest reduction occurred in group 3 (laser)), which was statistically significantly higher than the initial value before treatment (p=0,00029). Second highest reduction of the bacterial count was observed in group 1 (EGCG)). Conclusion & Significance: Thus, the use of green tea extract and its main component EGCG alone or in combination with low-intensity blue and red laser radiation can have great prospects in the treatment of patients with chronic periodontitis.

	Before treatment	EGCG	EGCG + Laser	laser
Mean	3,11E+10	1,62E+09	2,53E+09	1,25E+09
Median	7,70E+09	6,60E+08	1,30E+09	6,30E+08
Minimum	1,40E+09	5,10E+06	2,10E+07	1,40E+07
Maximum	1,70E+11	1,50E+10	1,30E+10	7,80E+09
SD	4,64E+10	3,52E+09	3,74E+09	1,88E+09

Recent Publications

1. G. Hajishengallis; T. Chavakis. Local and systemic mechanisms linking periodontal disease and inflammatory comorbidities. Nat Rev Immunol. 2021, 21(7), 426–440.

2. M.A. Lopez; P.C. Passarelli; M. Marra et al. Antimicrobial efficacy of photodynamic therapy (PDT) in periodontitis and peri-implantitis: A systematic review. J Biol Regul Homeost Agents. 2020, 34 (5 suppl 3), 59-65.
3. N.S. Soukos; S. Som; A.D. Abernethy; K. Ruggiero; J. Dunham; C. Lee et al. Phototargeting oral, black-pigmented bacteria. Antimicrob. Agents Chemother. 2005, 49, 1391–6.

Biography

Marzena Liliana Wyganowska. A specialist in periodontics and aesthetic medicine with many years of experience. Currently she is the head of the Medical University of K. Marcinkowski in Poznań at the Medical Faculty of the Department of Oral Surgery and Periodontology. Her passion focuses on the processes of biostimulation and bioregeneration of tissues. She conducts research on the biology of fibroblasts in relation to natural substances and biostimulants. An author of over 120 publications in national and foreign journals. respected opinion leader, trainer, and speaker at national and international anti-aging medicine congresses. Specializes in treatments that restore biological balance.

E: marzena.wyganowska@periona.pl

PULSUS
WWW.PULSUSCONFERENCE.COM
39 YEARS IN ASSESSING THE IMPACT OF HEALTHCARE RESEARCH

5th World Congress on

DENTISTRY AND MAXILLOFACIAL SURGERY

September 18-19, 2023 | Rome, Italy

Received Date: 08-12-2023 | Accepted Date: 08-15-2023 | Published Date: 10-20-2023

What can we have in the supply of prosthetic technicians - resin instead of zirconia?

Carmen Conroy[1], Aline Marodin[1], Paulo Júlio Almeida[2], Claudia Volpato [3],Mercedes Gallas[4],Paula Vaz[5]
[1]Smile Arade, Portugal
[2]University of Porto, Portugal
[3]UFSC, Brasil.
[4]Universidad de Santiago de Compostela, Spain.
[5]Carevage, Braga, Portugal

Oral rehabilitation with various ceramics and zirconia has become increasingly common and the supply capacity of laboratories tends to accompany the increase in dental clinics. However, laboratories and prosthetic technicians must be guided by internal control, so that whenever failures occur, they can inform dentists.

To do so, they must always have and facilitate the supply of the following data: Batch and brand of equipment, batch and brand of Zirconia disks/blocks, Batch and brand of glazes.

Sintering programs, whenever requested, must be provided.

The survival rates of fixed zirconia rehabilitations are known, as well as resin rehabilitations (Macedo MGFP et al 2028; Silva J et al 2019; Cardoso JA et al, 2012; Cardoso JA et al, 2023).

Experienced dentists, even with this knowledge (Edwin Ruales-Carrera et al 2020), may have an undue supply of resin polymers instead of Zirconia.

If the prosthetic technicians and their laboratory are serious, they shouldn't have any problem carrying out analyzes whenever there are doubts about a small possibility of occurrence of manufacturing defect or production error of Zircónia.

When the prosthetic technicians do not collaborate or are not serious, generally omit information about batches and references of the supplied material, as well as the equipment.

In these situations, the steps to be taken by the dentist include: analysis by SEM of the rehabilitation material after contact with the oral cavity, SEM analysis of a control rehabilitation similar material (Figure 1).

Alert to governmental Order of Dentists and Institute that Regulates the the Medical Devices.

Recent Publications

1. Macedo MGFP, Volpato CAM, Henriques BAPC, Vaz PCS, Silva FS, Silva CFCL. Color stability of a bis-acryl composite resin subjected to polishing, thermocycling, intercalated baths, and immersion in different beverages. J Esthet Restor Dent. 2018 Sep;30(5):449-456. doi: 10.1111/jerd.12404. Epub 2018 Sep 8.PMID: 30194894
2. Silva J, Rafael CF, Vaz PCS, Fernandes JCAS, Volpato CAM. Color stability of repairs on bis-acryl resin submitted to thermal aging and immersion in beverages. J Esthet Restor Dent. 2019 Sep;31(5):514-519. doi: 10.1111/jerd.12523. Epub 2019 Sep 9.PMID: 31497927
3. Cardoso JA, Almeida PJ, Fischer A, Phaxay SL. Clinical decisions for anterior restorations: the concept of restorative volume. J Esthet Restor Dent. 2012 Dec;24(6):367-83. doi: 10.1111/j.1708-8240.2012.00503.x. Epub 2012 Mar 5.PMID: 23205682 Review.

Biography

Carmen Consoy has his expertise in Product Manager and Dental Medicine, focused on Dental Implants and Orofacial Rehabilitation. The combination of a vast product manager experience, combined with the search for "knowledge" based on science, allowed him to join Dr. Paula Vaz's research and Clinical team.

E: carmenconroycc@gmail.com

PULSUS
WWW.PULSUSCONFERENCE.COM
39 YEARS IN ASSESSING THE IMPACT OF HEALTHCARE RESEARCH

5th World Congress on

DENTISTRY AND MAXILLOFACIAL SURGERY

September 18-19, 2023 | Rome, Italy

Received Date: 08-12-2023 | Accepted Date: 08-15-2023 | Published Date: 10-20-2023

How to instruct and investigate supply and compliance of Oral Rehabilitation in Dentistry

Hugo Chamusca[1], Aline Marodin[2], Levy Rau[3], Elvio Pereira[4], Bruno Mello[3], Paula Vaz[5]
[1]University of Porto, Portugal
[2]Smile Arade, Portugal.
[3] UNISUL, Brazil
[4]University of Porto, Portugal
[5]Carevage, Portugal

Oral rehabilitation using titanium dental implants is considered a therapeutic option with reliable and expected results in most patients.

Implant-supported or implant-retained treatments provide predictable results with improved stability, retention, aesthetic and patient satisfaction.

Survival rates for dental implants reported in the literature are high and are perhaps overestimated for reasons inherent to the omission of reality by dentists and the "power" of commercial establishments, which do not want real failure values to be assumed (Rakic M et al 2018; Rokaya D et al, 2020).

Serious researchers are forced to translate on paper the reasons for bone loss and complications that may be associated with dental implants. Of these, risk factors such as genetic background, alcohol and diabetes stand out (Vaz P et al, 2012; Galindo Moreno P et al 2005).

In a very serious way, researchers must present to the scientific community the risks inherent to corrosion and activation of cellular DNA damage pathways, related to the properties of certain surfaces of commercially available implants (Suárez-López Del Amo F et al 2017).

If companies are serious, they shouldn't have any problem carrying out analyzes and cell cultures, which allow solving complications inherent to corrosion, as well as cell damage, whenever there are doubts about a small possibility of occurrence.

When the Industry does not collaborate, the steps to be taken by the dentist include genetic susceptibility test for complications with dental implants, evaluation of the patient's inflammatory response through implant contact testing and/or rehabilitative material, analysis by SEM of implants lost after contact with the oral cavity, SEM analysis of the implants packaged by the Manufacturer (Figure 1).

Alert to the governmental Order of Dentists and Institute that Regulates the CE Marking of the Medical Implant Device.

Recent Publications

1. Rakic M, Galindo-Moreno P, Monje A, Radovanovic S, Wang HL, Cochran D, Sculean A, Canullo L. How frequent does peri-implantitis occur? A systematic review and meta-analysis. .Clin Oral Investig. 2018 May;22(4):1805-1816. doi: 10.1007/s00784-017-2276-y. Epub 2017 Dec 7.PMID: 29218422 Free article. Review.
2. Rokaya D, Srimaneepong V, Wisitrasameewon W, Humagain M, Thunyakitpisal P. Peri-implantitis Update: Risk Indicators, Diagnosis, and Treatment. Eur J Dent. 2020 Oct;14(4):672-682. doi: 10.1055/s-0040-1715779. Epub 2020 Sep 3.PMID: 32882741 Free PMC article.
3. P Vaz , M M Gallas, A C Braga, J C Sampaio-Fernandes, A Felino, P Tavares. IL1 gene polymorphisms and unsuccessful dental implants. Clin Oral Implants Res. 2012 Dec;23(12):1404-13. doi: 10.1111/j.1600-0501.2011.02322.x. Epub 2011 Nov 10.

Biography

Hugo Chamusca has his expertise in oral surgery, focused on Dental Implants and Orofacial Rehabilitation. The combination of vast clinical experience, combined with the search for "knowledge" based on science, allowed him to join Dr. Paula Vaz's research team. He is currently doing a PhD that aims to be innovative and generate innovation, development and jobs.

E: hugochamusca7@gmail.com

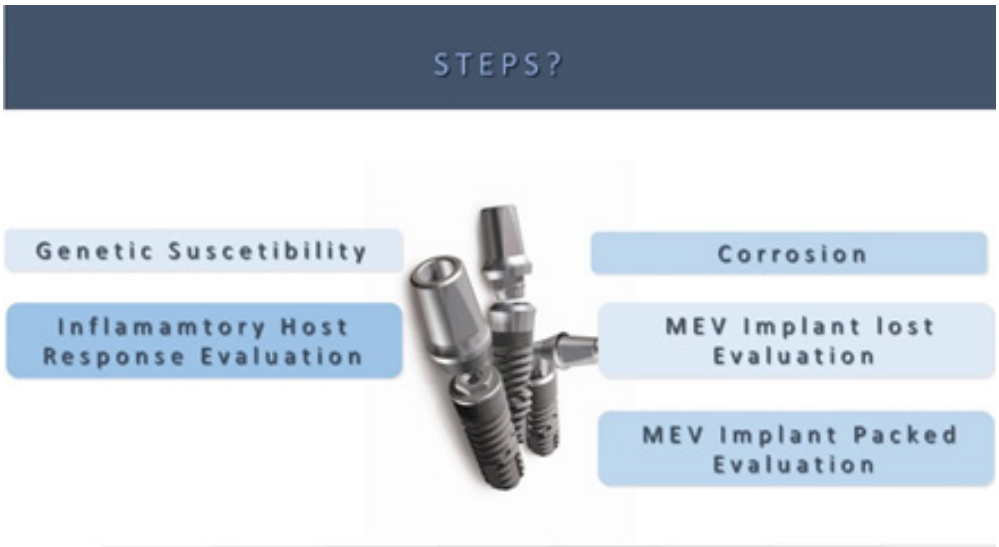


Figure 1: Steps to be taken by a Oral Surgeon when the Implant Manufacturer does not collaborate.

PULSUS
WWW.PULSUSCONFERENCE.COM
39 YEARS IN ASSESSING THE IMPACT OF HEALTHCARE RESEARCH

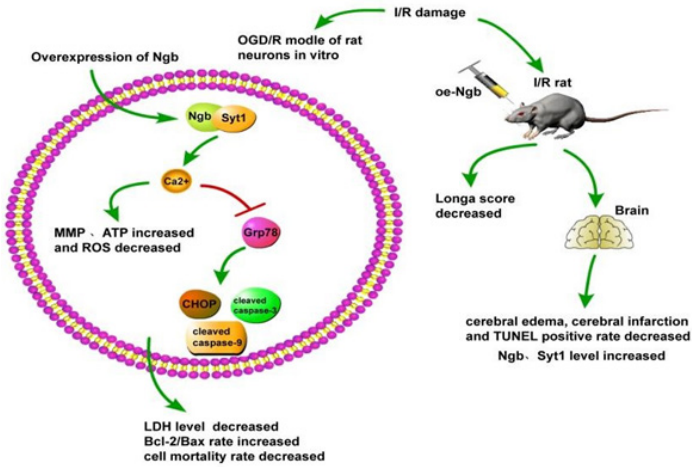
5th World Congress on
DENTISTRY AND MAXILLOFACIAL SURGERY
September 18-19, 2023 | Rome, Italy

Received Date: 07-16-2023 | Accepted Date: 07-19-2023 | Published Date: 10-20-2023

Protection of neuroglobin against cerebral ischemia/reperfusion injury in rats through mitochondria- and endoplasmic reticulum stress-related apoptosis pathways

Xu Jianping
Hospital of Soochow University, China

Cerebral ischemia/reperfusion (I/R) injury remains a grievous health threat, and herein effective therapy is urgently needed. This study explored the protection of Neuroglobin (Ngb) in rats with cerebral I/R injury. The focal cerebral I/R rat models were established by Middle Cerebral Artery Occlusion (MCAO) and neuronal injury models were established by Oxygen-Glucose Deprivation/reoxygenation (OGD/R) treatment. The brain injury of rats was assessed. Levels of Ngb, Bcl-2, Bax, endoplasmic reticulum stress (ERS)-related markers, and Syt1 were measured by immunofluorescence staining and Western blotting. The cytotoxicity in neurons was assessed by Lactate Dehydrogenase (LDH) release assay. Levels of intracellular Ca2+ and mitochondrial function- related indicators were determined. Binding between Ngb and Syt1 was detected by co-immunoprecipitation. Ngb was upregulated in cerebral I/R rats and its overexpression alleviated brain injury. In OGD/R-induced neurons, Ngb overexpression decreased LDH level and neuronal apoptosis, decreased Ca2+ content, and mitigated mitochondrial dysfunction and ERS-related apoptosis. However, Ngb silencing imposed the opposite effects. Importantly, Ngb could bind to Syt1. Syt1 knockdown partially counteracted the alleviation of Ngb on OGD/R-induced injury in neurons and cerebral I/R injury in rats. Briefly, Ngb extenuated cerebral I/R injury by repressing mitochondrial dysfunction and endoplasmic reticulum stress-related apoptosis through Syt1.



Recent Publications

1. Qin Y, Zhang Q, Liu Y(2020). Analysis of knowledge bases and research focuses of cerebral ischemia-reperfusion from the perspective of mapping knowledge domain. Brain Res Bull.156:15-24.
2. Long Y, Yang Q, Xiang Y, et al(2020). Nose to brain drug delivery - A promising strategy for active components from herbal medicine for treating cerebral ischemia reperfusion. Pharmacol Res. 159:104795.

3. Shu J, Huang X, Liao Q, et al(2022). Sevoflurane Improves Hemorrhagic Shock and Resuscitation-Induced Cognitive Impairments and Mitochondrial Dysfunctions through SIRT1- Mediated Autophagy. Oxid Med Cell Longev. 2022:9771743.

Biography

Xu Jianping has been engaged in clinical, teaching and scientific research in the Division of Cardiology, The First Affiliated Hospital of Soochow University, China. She presented this study on behalf of Dr. Zhang Lihong. Dr. Zhang has been engaged in clinical, teaching and scientific research in the department of Neurology for 18 years. She is especially good at the diagnosis and treatment of acute and critical cerebrovascular diseases, including intravenous thrombolysis, mechanical thrombolysis and carotid artery stenting therapy for ischemic stroke. Based on the contradiction between good recalibration and poor prognosis in the treatment of ischemic stroke, the study of ischemia-reperfusion injury was proposed. This study provides a theoretical basis for the treatment of ischemia-reperfusion injury in ischemic stroke.

E: zhanglihong5858@126.com

PULSUS
WWW.PULSUSCONFERENCE.COM
39 YEARS IN ASSESSING THE IMPACT OF HEALTHCARE RESEARCH

5th World Congress on

Dentistry and Maxillofacial Surgery

September 18-19, 2023 | Rome, Italy

Day-2

Scientific Tracks & Abstracts

38 YEARS OF EXCELLENCE IN MEDICAL PUBLISHING

Sessions

Oral Health | Dental Anatomy | Tooth Anatomy | Restorative Dentistry | Pediatric Dentistry | Nano Dentistry

Session Introduction

Title: The evaluation between genetic factors & gingival overgrowth

Omid Panahi | Oral Surgeon University of the People | USA

Title: Dentofacial esthetic considerations in the modern Orthodontic treatment plan

Zhwan Jamal Rashid | University of Sulaimani | Iraq

Title: The use of digital technologies to improve effectiveness of aesthetic restoration of anterior teeth

Ruslan Gazaryan | General Dentist Tat Dental Clinic | Armenia

Title: Application of artificial intelligence in oral and Dento Maxillofacial Surgery: a science mapping approach

Aida Karagah | Qazvin University of Medical Sciences | Iran

PULSUS
WWW.PULSUSCONFERENCE.COM
39 YEARS IN ASSESSING THE IMPACT OF HEALTHCARE RESEARCH

5th World Congress on

DENTISTRY AND MAXILLOFACIAL SURGERY

September 18-19, 2023 | Rome, Italy

Received Date: 06-30-2023 | Accepted Date: 07-03-2023 | Published Date: 10-20-2023

The evaluation between genetic factors & gingival overgrowth

Omid Panahi[1], Soheil Aminkhah[2]
[1]Oral Surgeon University of the People, USA
[2]Centro Escolar University, Philippines

Multi-drug resistanceP-glycoprotein (P-gp), which is produced by the 1 gene and is a member of the ABC transporter protein family and connected to ATP, is involved in the transmembrane transport of numerous hydrophobic, cationic, amphoteric, and xenobiotic compounds. The main goal of this study was to establish a connection between the Multi Drug Resistance1 Gene and gingival overgrowth (such language should be kept in the introduction). A cross-sectional epidemiologic examination evaluated laboratory, clinical, and historical data on the illness, as well as histological parameters and the usage of calcium antagonists. P-glycoprotein (P-GP) was found in gingival tissues, and the drug resistance variants G2677T/A and C3435T polymorphism were identified. 12 patients (30%) exhibited clinically severe gingival overgrowth, while 28 patients (70%) had minor gingival overgrowthThis drug-related side effect was connected with the MDR1 2677G or G/TA genotype (P.002) but not with the variant genotype T/TA. Patients treated with calcium antagonists exhibited substantially deeper gingival than their drug-free counterparts (P.0002). The association between this medication effect and higher C-reactive protein levels was demonstrated by multiple regression analysis with adjustment for the periodontitis risk variables (age, sex, smoking, education, and employment) (P.0002). The matched-pair analysis supported the connection between probing depth and the MDR1 polymorphism (P =.0002). Obviously, self-performed sustenance has an impact on the reduction of gingival overgrowth. Particularly in patients who possessed the polymorphism for multiple medication resistance (C3435T).

Recent publications

1. Panahi, Omid. (2020). Diagnosis and management of complications of implant surgery.
2. Panahi, Omid. (2019). Stem Cells & Modern Dentistry.
3. Panahi, Omid & tayebi, Soudeh. (2019). Dental implants: success or failure?. 8. 66. 10.4172/2161-1122-CB-051.

Biography

Omid PANAHÄ°, graduated from Centro Escolar University in 2013 in the field of Doctor of Dental Medicine (DMD), MSc in Oral and Maxillofacial Surgery at Yeditepe University, Istanbul, Turkey. He did Master of Business administration Management (MBA) major in health-care Management at the University of the People, California, USA.

E: panahi.omid@gmail.com

PULSUS
WWW.PULSUSCONFERENCE.COM
39 YEARS IN ASSESSING THE IMPACT OF HEALTHCARE RESEARCH

5th World Congress on

DENTISTRY AND MAXILLOFACIAL SURGERY

September 18-19, 2023 | Rome, Italy

Received Date: 06-30-2023 | Accepted Date: 07-03-2023 | Published Date: 10-20-2023

Dentofacial esthetic considerations in the modern Orthodontic treatment plan

Zhwan Jamal Rashid
University of Sulaimani, Iraq

Statement of the Problem: It is evident that the integration of modern aesthetic concepts into orthodontic treatment plans has become increasingly important. Orthodontic treatment is no longer solely about functional improvements; it now extends to achieving optimal facial balance and harmony, taking into consideration dentofacial aesthetics. This shift towards comprehensive esthetic considerations marks an exciting evolution in orthodontic care. Methodology & Theoretical Orientation: The careful analysis of dentofacial esthetics at different levels is essential for a comprehensive diagnosis and successful treatment planning in orthodontics. The progression from macro to mini to micro esthetics allows orthodontists to consider a wide range of factors that contribute to the overall harmony and attractiveness of a patient's smile and facial appearance. Macro Esthetics: This involves the broader assessment of the face and overall facial proportions. It encompasses the frontal assessment and profile analysis. The frontal assessment looks at the balance and symmetry of facial features, evaluating factors such as the proportion of the upper and lower thirds of the face. The profile analysis deals with the relationships between the jaws, mandibular plane, and the position of the incisors, which all contribute to the overall profile and facial balance. On the other hand, mini esthetics analysis focuses on the smile itself, considering the smile framework and its various dimensions. The vertical tooth-lip relationship, smile type (how much teeth show during smiling), transverse dimensions of the smile, smile arc (alignment of the teeth in relation to the curvature of the lower lip), and midline alignment are all crucial factors. These elements collectively determine the visual impact of the smile. While micro esthetics, the assessment zooms is on the individual teeth and their relationships. This includes evaluating tooth proportions (length-to-width ratios), height-width relationships of the teeth, the shapes of connectors and embrasures (the spaces between teeth), gingival contours and heights (the gumline), and even tooth shade and color. These finer details contribute to the overall naturalness and attractiveness of the smile. Achieving harmony across these three levels of esthetics is pivotal in achieving an idealized esthetic outcome. A treatment plan that addresses each of these parameters ensures that the final result not only functions well but also enhance the patient's facial aesthetics. By carefully considering and addressing the various esthetic factors at play, orthodontists achieve multifaceted treatment outcomes that go beyond functional improvements alone. Conclusions & Significance: The integration of dentofacial esthetics into treatment planning adds a layer of complexity and sophistication to orthodontic care, acknowledging the impact of a pleasing smile and balanced facial appearance on a patient's overall well-being.

Recent publications

1. Rashid, Z.J.; Gul, S.S.; Shaikh, M.S.; Abdulkareem, A.A.; Zafar, M.S. Incidence of gingival black triangles following treatment with fixed orthodontic appliance: A systematic review. Healthcare 2022,10, 1373. https://doi.org/10.3390/ healthcare10081373

2. Mohammed SA, Ali TM, Rashid ZJ. Evaluation of skeletal jaw relation by different cephalometric angles for a sample of Kurdish young adults in Sulaimani city-A Cephalometric study. Sulaimani Dent J. 2022;9(1):21-30

3. Rashid ZJ, Chawshli OF. Is bracket position determination from digital techniques accurate 100%? A comparative ex-vitro study. European Journal of Molecular & Clinical Medicine. 2021 Jan 10;7(01):2020.

Biography

Zhwan Jamal Rashid Hama is an assistant professor at the University of Sulaimani/College of Dentistry in the Department of Pedodontics, orthodontics, and preventive dentistry. She was graduated with a BDS in dentistry in 2003 from the University of Sulaimani College of Dentistry. Following graduation, she completed dental vocational training from 2003–2005 at different dental teaching centers. she has been closely involved in treating patients over this period. she obtained her MSc and PhD degrees in orthodontics at the same college in 2007 and 2021, respectively. She is an assistant professor at Sulaimani University, where she has taught orthodontics at the college of dentistry since 2008, and She have been practicing in a private clinic since 2007. She taught all aspects of undergraduate and postgraduate orthodontics through the clinical supervision of students in the clinic, lectures, tutorials, clinical skill practice, and seminars from 2008 and 2021, respectively, to this day. Additionally, she taught occlusion to MSc orthodontics students. she has worked as an assistant to the head of the postgraduate study office since 2021, and as the clinical director of the fifth stage since 2019. Also, she is working as head of postgraduate clinics. Additionally, she has authored several publications in peer-reviewed journals, including original research, case reports, and systematic review. Moreover, she has authored a book for our 5th-year undergraduate students entitled Clinical Manual for Orthodontics.

E: zhwan.rasheed@univsul edu.iq

PULSUS
WWW.PULSUSCONFERENCE.COM
39 YEARS IN ASSESSING THE IMPACT OF HEALTHCARE RESEARCH

5th World Congress on

DENTISTRY AND MAXILLOFACIAL SURGERY

September 18-19, 2023 | Rome, Italy

Received Date: 08-19-2023 | Accepted Date: 08-21-2023 | Published Date: 10-20-2023

The use of digital technologies to improveeffectiveness of aesthetic restoration of anterior teeth

Ruslan Gazaryan
General Dentist Tat Dental Clinic, Yeravan, Armenia

Statement of the Problem: Direct adhesive strategies are the most commonly used treatment methods for the conservative repair of the anterior teeth defect. Despite numerous scientific publications on the topic of aesthetic restoration of anterior teeth, the issues of choosing the optimal restoration method are relevant and require a comprehensive long-term study.

Objectives: Clinical evaluation of the effectiveness of the aesthetic restoration of the anterior teeth use of digital technologies

Materilas and Methods: The study included 67 adult patients in need of aesthetic restoration of the anterior teeth. Digital information about the patient's teeth surrounding the soft tissues was captured by a digital camera and scanner. Aesthetic analysis and design were performed using 3shape software and demonstrated to patients. Through communication with patients, an optimized treatment plan was provided. After the aesthetic restoration, the design, color of the restoration, and patient satisfaction were evaluated. Aesthetic evaluation was performed according to the form of anterior aesthetic evaluation. Patient satisfaction scores were recorded on a questionnaire containing six items of aesthetic index and doctor-patient communication. Patients were interviewed and reviewed at 1, 3, 6 and 12 months, respectively, and the clinical effects of the restorations were assessed.

Results: Aesthetic defects of patients were effectively eliminated using a minimally invasive approach to the restoration protocol for the restoration of anterior teeth with a composite material using adhesive systems. All procedures met the requirements of preoperative digital design. Patients had satisfactory clinical results.

Conclusions: Proper choice of indications, accurate design of the restoration, contributes to a satisfactory aesthetic restoration of the anterior teeth. For patients with anterior aesthetic defect, digital design plays an important role in optimizing the treatment plan and guiding the entire treatment process. This design can help clinicians achieve predictable, satisfactory esthetic results.

Recent publications

1. Ruslan Gazaryan et al (2021). Efficiency of Implant-Prosthetic Rehabilitation in Patients with Short Implants Placed in Atrophic Posterior Mandible, 5 Years Results of a Prospective Single-Center Study. Saudi J Oral Dent Res, 6(9): 389-39

Biography

Ruslan Gazaryan is a dedicated General Dentist currently practicing at Tat Dental Clinic in Yerevan, Armenia. His journey in the field of dentistry is marked by a commitment to excellence and a passion for providing top-notch dental care to his patients.

Ruslan embarked on his educational journey in 2003 when he enrolled at Yerevan State Medical University after Mkhitar Heratsi, one of Armenia's prestigious medical institutions. Over the course of five years, from 2003 to 2008, he diligently pursued his studies, building a solid foundation in the medical sciences.

His dedication to dentistry led him to pursue a Clinical Residency program at Yerevan State Medical University after Mkhitar Heratsi from 2009 to 2011. During this period, Ruslan honed his skills in General Dentistry, gaining valuable clinical experience and expertise in a wide range of dental procedures.

E: hayko183@gmail.com

PULSUS
WWW.PULSUSCONFERENCE.COM
39 YEARS IN ASSESSING THE IMPACT OF HEALTHCARE RESEARCH

5th World Congress on

DENTISTRY AND MAXILLOFACIAL SURGERY

September 18-19, 2023 | Rome, Italy

Received Date: 03-24-2023 | Accepted Date: 03-25-2023 | Published Date: 10-20-2023

Application of artificial intelligence in oral and Dentomaxillofacial surgery: A science mapping approach

Aida Karaga[1], Maryam tofangchiha[1], Jafar Kolahi[2]
[1] Qazvin University of Medical Sciences, Qazvin, Iran.
[2] Dental Hypotheses, Isfahan, Iran

Background: Artificial Intelligent systems have revolutionized the field of oral and maxillofacial surgery by the introduction of image-guided surgery. Preoperative CT and MRI images are registered with CBCT images for intraoperative imaging due to the reduced radiation exposure and high resolution of CBCT. Image-guided surgery is now performed at many large hospitals (e.g., for implant placement), enabling these procedures to be performed more precisely than was previously possible. Intelligent technologies are able to precisely identify dental regions that are vulnerable to caries and complicated periapical pathologies, more precisely determine the boundaries of lesions using automated segmentation, and enable their differentiation. Intelligent systems have been used for the early detection of head and neck cancers and cervical lymph node metastasis, which may affect the treatment choice and prognosis of head and neck cancer patients.

The inferior alveolar nerve (IAN) and mandibular third molar (M3) are located in close proximity, making surgical extraction of lower third molars difficult. These procedures can result in damage to the IAN, causing neurosensory impairment in the chin and lower lip segmentation on panoramic radiographs by this technique to detect the proximity of M3 in relation to the IAN prior to surgical removal of M3 and suggested that it was an encouraging approach to the segmentation of anatomical structures.

Owing to the exceptional ability of these algorithms to recognize images of different dentofacial deformities, they will also have many uses in orthognathic surgery in the future.

Objective: The aim of this study is a brief report on the use of artificial intelligence in recent research in various fields of oral and maxillofacial imaging.

Methods: On Sep 1, 2021, the Scopus database searched via the following query TITLE-ABS-KEY (("artificial intelligence" OR "machine learning") AND surgery) AND (LIMIT-TO (SUBJAREA, "DENT")). Bibliometric data was extracted and analyzed via VOS viewer software using the author's keywords co-occurrence, country co-authorship and co-citation network analysis.

Results: 40 articles found and analyzed. Author's keywords co-occurrence analysis showed among 95 keywords, artificial intelligence, orthogenetic surgery and deep learning were the most popular topics (hot topics). Country co-authorship analysis indicated among 22 countries, Germany, the U.S and Brazil were the most active countries. Co-citation network analysis displayed among 158 journals, Journal of Prosthetic Dentistry, Journal of Dental Research and International Journal of Periodontics & Restorative Dentistry were the most influential journals.

Conclusion: The progressive development of Artificial Intelligent technology in the field of oral and maxillofacial surgery will benefit clinicians and researchers to integrate different fields of knowledge and improve patient care. However, to minimize potential errors of this technology it seems logical to combine it with conventional methods. The cooperation between clinicians, researchers and engineers will be serious for the development of this field. Therefore, we suggest interdisciplinary research in related sciences in the country to be supported by research centres and research institutes. And thus we can benefit from new technologies and researchers in engineering sciences in the clinical and preclinical fields.

Recent publications

1. Correlation of radiomorphometric indices of the mandible and mandibular angle fractures. Aida Karagah et al. Heliyon.
2. Effect of Sinus Floor Augmentation with Platelet-Rich Fibrin Versus Allogeneic Bone Graft on Stability of One-Stage Dental Implants: A Split-Mouth Randomized Clinical Trial. Aida Karagah et al. Int J Environ Res Public Health. 2022
3. Does platelet-rich fibrin increase the stability of implants in the posterior of the maxilla? A split-mouth randomized clinical trial. R Tabrizi ,A Karagah ,et al. Int J Oral Maxillofac Surg. 2018 May

Biography

Aida Karagah has completed her maxillofacial speciality in 2017 from shiraz University, Iran. she is assistant professor of Qazvin University of medical sciences, Iran. She has over 12 publications that have been cited over 328 times, and her publication H-index is 9 and has been serving as a review committee member of reputed Journals.

e: aida_karagah@yahoo.com

Sessions

Oral Health | Dental Anatomy | Tooth Anatomy | Restorative Dentistry | Pediatric Dentistry | Nano Dentistry

Session Introduction

Title: Reimagine, reform, renew: The futuristic face of Dental practice management

Hisham M H Safadi | UDENZ FZC | UAE

Title: Bayesian zero-inflated regression model with application to under-five child mortality

Mekuanint Simeneh Workie | Bahir Dar University | Ethiopia

Title: Title:Regenerative therapy for the treatment of peri-implantitis in patients with type 2 Diabetes Mellitus

Gagik V Hakobyan | Yerevan State Medical University after M. Heratsi | Armenia

Title: "maxSALIVA-II"- Advancing a nano-sized dual-drug delivery system for salivary gland radioprotection, regeneration and repair in a head and neck cancer pre-clinical murine model

ZS Haidar | Director BioMAT'X | Chile

Title: Three-dimensional thermophotonic super-resolution and multispectral truncated-correlation photothermal coherence tomography imaging methods for detection of Dental subsurface defects and early stage bacterial demineralization caries

Andreas Mandelis | University of Toronto | Canada

Title: Near miss baby and Near miss mom - Important indicators of maternal and child care

Fernanda Achkar | Armound | Jane de Eston | Brazil

PULSUS
WWW.PULSUSCONFERENCE.COM
39 YEARS IN ASSESSING THE IMPACT OF HEALTHCARE RESEARCH

5th World Congress on
DENTISTRY AND MAXILLOFACIAL SURGERY
September 18-19, 2023 | Rome, Italy

Received Date: 06-16-2023 | Accepted Date: 06-18-2023 | Published Date: 10-20-2023

Reimagine, Reform, Renew: The futuristic face of Dental Practice management

Hisham M H Safadi
UDENZ FZC, UAE

The evolving landscape of dental practice management is undergoing a dramatic transformation, spurred by advancements in Artificial Intelligence (AI), Machine Learning (ML), and automation. This presentation seeks to reimagine the traditional approaches, replacing them with a futuristic vision, one that promises not just efficiency, but also enhanced affordability of dental care.

AI and ML are offering unprecedented insights into patient care, thereby reforming conventional dentistry. With predictive analytics, automated diagnostics, and personalized treatment plans, they are revolutionizing the way dental practices operate. In addition to this, the automation of routine tasks, like processing dental claims and establishing fixed dental plans, is driving a paradigm shift in practice management. This not only frees up valuable time for dental practitioners but also streamlines administrative workflows, improving the overall patient experience.

The future of dentistry is not about replacing human expertise but augmenting it. The fusion of AI and ML with human skill promises a renewed approach to dental care, improving its accessibility and affordability. As we step into this new era, the goal remains consistent - to ensure optimal patient care and satisfaction, facilitated by technology.

Our presentation explores the journey of this transformation, offering a glimpse into the future of dental practices, a future that is not just efficient and tech-savvy but also patient-centric and affordable. Let's reimagine, reform, and renew dental practice management for the 21st century.

Key Objectives

1-Demonstrate the Application of AI, ML, and Automation: By the end of the presentation, attendees should be able to understand and explain at least three specific applications of AI, ML, and automation in dental practice management.

2-Analyze Patient-Centric Outcomes: Attendees will be guided to analyze and discuss how these technological advancements contribute to improved patient experience and affordability, demonstrating a clear link between innovation and patient benefits.

3-Develop a Technology Integration Roadmap: Participants should be able to devise a basic plan to integrate these technologies into their dental practices, taking into account their current practice workflows and future goals.

4-Assess the Effectiveness of Automated Dental Claims Processing: By presenting case studies, the presentation will enable participants to assess the effectiveness of automated dental claims processing in streamlining operations.

5-Evaluate the Impact of Fixed Dental Plans: Attendees should be able to critically evaluate the role of fixed dental plans in making dental care more affordable and accessible, providing them with a measurable benchmark for their own practice enhancement strategies.

The Presentation Immediate and Long Term Knowledge Application:

The audience, primarily dental professionals and healthcare administrators will find several immediate and long-term applications for the knowledge gained from this presentation.

1-Improved Understanding of AI, ML, and Automation: By comprehending the role of these technologies in dental practice, they can stay updated with the latest advancements and be aware of their potential applications in their practices.

2-Patient-Centric Approach: Learning about how these technologies improve patient experience and affordability can inspire professionals to rethink and restructure their own practices to be more patient-oriented.

3-Integration Roadmap: The presentation's guidance on integrating these technologies into their own practices will serve as a practical tool, helping them to transform their traditional setups into more efficient, tech-driven ones.

4-Assessment and Evaluation: With the insights on automated dental claims processing and fixed dental plans, attendees can assess their current systems and identify areas of improvement, while also evaluating the impact of these technologies on making dental care more affordable.

5-Future Planning: Lastly, a thorough understanding of these technologies can inform their strategic planning and decision making, ensuring their practice stays ahead of the curve and is ready to adapt to future changes in the industry.

The Direct Benefit for the Audience:

The presentation's insights and findings will provide direct benefits to the audience, particularly those working in dental practice management, in various ways:

- Increased Efficiency: By understanding how to leverage AI, ML, and automation, professionals can streamline administrative tasks like claims processing, freeing up time for more patient- focused work. This can significantly increase job efficiency.
- Enhanced Patient Care: The presentation's emphasis on patient-centric outcomes can guide professionals to develop better treatment plans and patient communication strategies. This would not only improve patient care but also foster a more satisfying work environment.
- Educational Insights: For faculty members, the presentation can serve as a foundation for teaching or expanding research in the area of technology in dental practice management. It provides up-to-date knowledge on the topic, which can be integrated into teaching materials or inspire new research questions.
- Design Solutions: For those involved in designing dental practice management systems or applications, the presentation offers valuable insights into how AI, ML, and automation can improve design accuracy, leading to more effective and user-friendly solutions.
- Strategic Planning: The understanding gained from this presentation can guide strategic planning and decision making in dental practices. This can help in anticipating and adapting to future changes in the industry, ensuring the practice's longevity and success.
- Professional Development: Keeping abreast with the latest advancements and understanding their practical applications contributes to professional growth and adaptability, critical for success in any rapidly-evolving field like healthcare.

Recent publications

1. The Influence of Emotional Intelligence in choosing Dentistry as a career? Discussion

2. Futuristic View On Dentistry In Uae What Is Important

Biography

Hisham Safadi is an esteemed entrepreneur from the UAE. Recognized by Forbes Middle East among the top 50 startups, he transitioned from dentistry to business, specializing in medical facilities and investment management. He founded UDENZ, MENA's leading Dental App, and Hyper Platform PAYD. In 2019, CEO Review Magazine named him the 'Best Digital Care CEO'. Passionate about startup culture, leadership, and mentorship, Dr. Safadi actively leads projects enhancing patient experiences and leadership skills, while underlining the importance of collaboration and partnership in business success.

e: hisham@udenz.ae

PULSUS
WWW.PULSUSCONFERENCE.COM
39 YEARS IN ASSESSING THE IMPACT OF HEALTHCARE RESEARCH

5th World Congress on

DENTISTRY AND MAXILLOFACIAL SURGERY

September 18-19, 2023 | Rome, Italy

Received Date: 07-09-2023 | Accepted Date: 07-11-2023 | Published Date: 10-20-2023

Bayesian zero-inflated regression model with application to under-five child mortality

Mekuanint Simeneh Workie
Bahir Dar University, Ethiopia

Under-five mortality is defined as the likelihood of a child born alive to die between birth and fifth birthday. Mortality of under the age of five has been the most targets of public health policies and may be a common indicator of mortality levels. Thus, this study aimed to assess the under-five child mortality and modeling Bayesian zero inflated regression model of the determinants of under-five child mortality. A community-based cross-sectional study was conducted using the 2016 Ethiopia Demographic and Health Survey data. The sample was stratified and selected in a two-stage cluster sampling design. The Bayesian analytic approach was applied to model the mixture arrangement inherent in zero-inflated count data by using the negative Binomial–logit hurdle model. About 71.09% of the mothers had not faced any under-five deaths in their lifetime while 28.91% of the women experienced the death of their under-five children and the data were found to have excess zeros. From Bayesian Negative Binomial— logit hurdle model it was found that twin (OR=1.56; HPD CrI 1.23, 1.94), Primary and Secondary education (OR=0.68; HPD CrI 0.59, 0.79), mother's age at the frst birth: 16–25 (OR=0.83; HPD CrI 0.75, 0.92) and≥26 (OR=0.71; HPD CrI 0.52, 0.95), using contraceptive method (OR=0.73; HPD CrI 0.64, 0.84) and antenatal visits during pregnancy (OR=0.83; HPD CrI 0.75, 0.92) were statistically associated with the number of non-zero under-five deaths in Ethiopia. The finding from the Bayesian Negative Binomial–logit hurdle model is getting popular in data analysis than the Negative Binomial–logit hurdle model because the technique is more robust and precise. Furthermore, Using the Bayesian Negative Binomial–logit hurdle model helps in selecting the most significant factor: mother's education, Mothers age, Birth order, type of birth, mother's age at the first birth, using a contraceptive method, and antenatal visits during pregnancy were the most important determinants of under-five child mortality.

Recent publications

1. Workie, M.S. and Lakew, A.M., 2018. Bayesian count regression analysis for determinants of antenatal care service visits among pregnant women in Amhara regional state, Ethiopia. Journal of Big Data, 5(1), p.7.
2. Workie, M.S. and Denekew, B.B, 2019. Bayesian Model with Application to a Study of dental caries, Ethiopia Journal BMC Oral health
3. Workie, Mekuanint Simeneh, and Abebaw Gedef Azene. Bayesian zero inflated regression model with application to under-five child mortality. Journal of Big Data 8.1 (2021): 1-23.

Biography

Mekuanint Simeneh was specialized in Mathematical and Statistical modeling (Statistics). He has 8 years of experience in Statistical modeling and machine learning techniques of health data research. My specific research focuses on Bayesian methods, Count modelling, Generalized Linear Mixed Model and machine learning. He have 6 publications in peer-reviewed journals. He is member of the Ethiopian Statistical associations. His apply statistical methods and machine learning techniques to a varied range of applications in improving public health problem.

E: mekuanintsimeneh@gmail.com

PULSUS
WWW.PULSUSCONFERENCE.COM
39 YEARS IN ASSESSING THE IMPACT OF HEALTHCARE RESEARCH

5th World Congress on

DENTISTRY AND MAXILLOFACIAL SURGERY

September 18-19, 2023 | Rome, Italy

Received Date: 09-02-2023| Accepted Date: 09-04-2023 | Published Date: 10-20-2023

Regenerative therapy for the treatment of Peri-Implantitis in patients with type 2 Diabetes Mellitus

Gagik Hakobyanl[1], Hakob Khachatryan[2]
[1]Yerevan State Medical University, Armenia
[2]Central clinical Military hospital, Armenia

Introduction: Rehabilitation of patients diagnosed type 2 diabetes mellitus complete and with partial adentia, dental implantation improves chewing function and quality of life. Diabetes has been considered a risky condition for dental implants with the fact that it is associated with delayed wound healing and impaired response to infection.

Due to the high risk of implant complications, past diabetes mellitus has made implant placement a relative contraindication because it is associated with delayed wound healing and impaired response to infection. Patients with diabetes mellitus have a high risk of peri-implantitis.

Various treatment methods are suggested in the treatment of peri-implantitis, non-surgical machining debridemen, chemotherapeutic disinfection, use of antibacterial agents, resective and regenerative surgical procedures, laser therapy, the employment of combination of lasers and surgical treatment. However, there is no standard approach for the treatment of peri-implantitis, since with any of the treatment options complete elimination of inflammation is not achieved.

The high prevalence of peri-implantitis reflects the lack of effectiveness of treatment methods, which makes the search for new therapeutic approaches relevant.

Objectives: To evaluate the outcome of regenerative therapy of peri-implantitis in patients with type 2 diabetes mellitus. Materials and methods;Study included 53 patients with type 2 diabetes mellitus diagnosed peri-implantis. 38 implants with early peri-implantitis, 23 implants with moderate peri-implantitis. The diagnostic parameters used for assessing peri-implantitis include clinical indices, Probing Pocket Depth (PPD), Bleeding On Probing (BOP), peri-implant radiography, data at the re-examination were retrospectively compared to baseline data.

Patients underwent treatment with HbA1c levels <7.2% or less than 154 mg/dL.

Treatment including systemic antibiotics (amoxicillin 500mg and metronidazole 200mg) with duration of 7-10 days.

Regenerative surgical procedures for treatment peri-implantitis including.

The flap of full thickness was raised to provide access to the defect of the peri-implant and the open surface of the implant. Granulation tissue was carefully removed in the bone defect with titanium instruments. The implant surface is decontaminated with successive topical applications of citric acid, 0.12% chlorhexidine, sterile physiological saline and adjunctive magneto-laser therapy with a wavelength of 810nm power density of 100mW during 30 seconds.

After degranulatin and antiseptic preparation, Bone loss was evaluated intrasurgically.

Bio-Oss had mixed with hyaluronic acid (Gengigel) and the periimplant bone defect was filled. A membrane Bio-Gide was placed over the filled defect, flaps were repositioned and sutured, wound healing was performed in a submerged.Local applications Elzylol dental gel.

Patients were instructed to rinse twice a day for 1 minute for 2-3 weeks with chlorhexidine 0.12%. Healing periods occurred

without complications, and with minimal postoperative discomfort. The sutures were removed 7-10 days after the surgery.

To monitor healing, patients were observed for the first 4 weeks, and then at a three-month interval. Cover plugs of the implants were replaced with prosthetic abutments after 3 months of submerged healing and prosthetic components were installed after 1 week of soft tissue healing. Professional hygiene was conducted every six months.

Effectiveness treatment was evaluated by the following criteria: (1) the absence of progressive loss of bone mass, (2) the absence of suppuration, (3) bleeding when probing for ≤ 50% of sites and (4) Probing pocket depth < 5mm.

The diagnostic parameters of the two groups were comparable at baseline and after treatment. Radiologically increased or stable levels of the marginal bone compared with the baseline periapical x-rays is considered to be a treatment success.

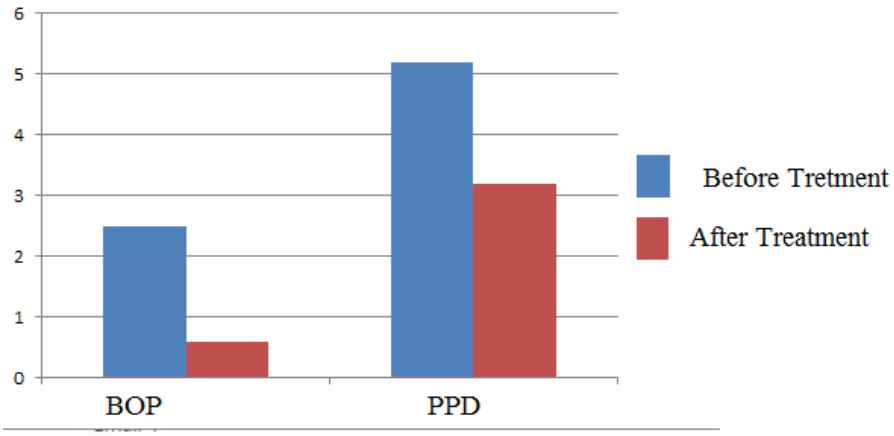
Results: A statistical significant reduction in both PPD and BOP were seen at all-time points as compared with the baseline clinical measurements. Stable clinical measurements PPD and BOP were demonstrated after 1 year the initial treatment, remaining stable during the following three years. The mean BOP in patients before treatment of peri-implantitis was 2.5 ± 0.31, after 6 months treatment month treatment 0.6 ± 0.1.

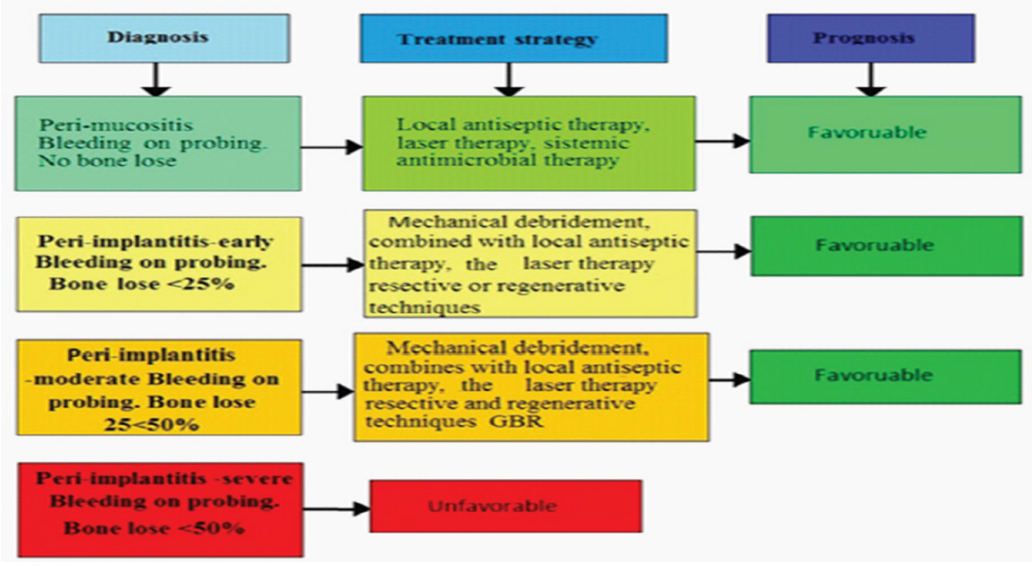
The mean PPD in patients before treatment of peri-implantitis was 5.2 ± 0.24. after 6-month treatment pocket was 3.2 ± 0.1.

DIAGRAM The mean BOP and PPD in patients before and after 6-month treatment treatment of peri-implantitis.

Based on the clinical experience developed by us Algorithm for the treatment of peri-implantitis at different stages.

Conclusion: Surgical regenerative treatment combined with systemic antibiotics, on pocket elimination, detoxification of the implants' surface, bone grafting with grafts materials and hyaluronic acid Gengigel, magnetolaser therapy was an effective therapy for treatment of peri-implantitis in patients with type 2 diabetes mellitus.





Recent publications

1. Gagik Hakobyan et al.Simultaneous endoscopic endonasal sinus surgery and sinus augmentation with immediate implant placement Journal of Cranio maxilla- facial Surgery https://doi.org/10.1016/j.jcms. 2019.04.004

2. Hakobyan Gagik, Jilavyan,Ashot,Khachatryan Gagik,Mathevosyan Davit,Tunyan Gekham,Ghambaryan Naira Gagik Hakobyan et al.Evaluation of the survival rate of short implants placed in the posterior atrophic mandible: 5-year clinical study;2022/06/08 Quintessence international ;DOI-10.3290/j.qi.b3095013

3. Hakobyan Gagik, Boyadjian Astghik, Boyadjian Mgrditch,Harutyunyan Armen, Tunyan Gegham, Khachatryan Gagik.Clinical advantages of improving the excessive gingival SSdisplay (EGD) by surgical repositioning of the upper lip;Clinical Oral Investigations 2022/08/20, VL - 26;DO - 10.1007/s00784-022-04687-4

Biography

Gagik Hakobyan, a Doctor of Medical Sciences and PhD holder, is a prominent figure in the field of dentistry. He completed his education at the Yerevan State Medical Institute, Faculty of Stomatology, from 1978 to 1983, where he developed a strong foundation in oral surgery, implantology, and general dentistry. Currently, Professor Hakobyan holds the prestigious position of Head of the Department of Surgical Stomatology and Maxillofacial Surgery at Yerevan State University after M. Heratsi. In this role, he not only imparts his extensive knowledge to the next generation of dental professionals but also plays a crucial role in shaping the future of dental medicine.

E: hakob.surgeon@gmail.com

PULSUS
WWW.PULSUSCONFERENCE.COM
39 YEARS IN ASSESSING THE IMPACT OF HEALTHCARE RESEARCH

5th World Congress on

DENTISTRY AND MAXILLOFACIAL SURGERY

September 18-19, 2023 | Rome, Italy

Received Date: 07-12-2023 | Accepted Date: 07-15-2023 | Published Date: 10-20-2023

"maxSALIVA-II"- Advancing a Nano-Sized Dual-Drug Delivery System for Salivary Gland Radioprotection, Regeneration and Repair in a Head and Neck Cancer Pre-Clinical Murine Model

ZS HAIDAR
Director BioMAT'X, Chile

Background: Saliva plays a major role in maintaining oral, dental, general health and well-being, where it normally bathes the oral cavity acting as a clearing agent. This becomes more apparent when the amount and quality of saliva is significantly reduced due to medications, salivary gland neoplasms, disorders such as Sjögren's syndrome, and especially ionizing radiation therapy for tumors of the head and neck, the 5th most common malignancy worldwide, during which the salivary glands are included within the radiation field/zone. Clinically, patients affected by salivary gland dysfunction often opt to terminate their radiotherapy course prematurely as they become malnourished and experience a significant decrease in their QoL. Accordingly, the formulation of a radio-protection/-prevention modality and development of an alternative Rx to restore damaged salivary gland tissue is eagerly awaited and highly desirable.

Objectives: Assess the pre-clinical radio-protective effect and reparative/regenerative potential of layer- by-layer self-assembled lipid-polymer-based core-shell nanocapsules designed and fine-tuned for the sequential (ordered) release of dual cytokines, following a single local administration (direct injection) into a murine sub-mandibular salivary gland model of irradiation.

Methods: The formulated core-shell nanocapsules were characterized physico-chemico-mechanically pre-/post-loading with the drugs, followed by optimizing the pharmaco-kinetic profile. Then, nanosuspensions were administered directly into the salivary glands, 24hrs pre-irradiation (PBS, un- loaded nanocapsules, individual and combined vehicle-free cytokines were injected into the control glands, for an in-depth comparative analysis). External irradiation at an elevated dose of 18Gy was exposed to the head-and-neck region of C57BL/6 mice. Salivary flow rate (un-stimulated) and salivary protein content/excretion were regularly assessed using an enzyme-linked immunosorbent assay (3- months period). Histological and histomorphometrical evaluation and apoptosis/proliferation analysis followed by local versus systemic bio-distribution and immuno-histochemical assays were then performed on all harvested major organs (at the distinct experimental end-points).

Results: Monodisperse, stable, and cytocompatible nanocapsules capable of maintaining the bioactivity of the encapsulant within the different compartments with the core and shell, and with controlled/customizable pharmaco-kinetics, resulted, as is illustrated in the graphical abstract (Figure) below. The experimental animals demonstrated significant increase in salivary flow rates when compared to the controls. Herein, salivary protein content was comparable to the pre-irradiation (baseline) level. Histomorphometry further confirmed the biocompatibility and localization of the nanocapsules, in vivo, into the site of injection. Acinar cells showed less vacuoles and nuclear aberration in the experimental group while the amount of mucin was higher in controls. Overall, less apoptotic activities were detected by a Terminal deoxynucleotidyl Transferase (TdT) dUTP Nick-End Labeling (TUNEL) assay and proliferative rates were similar to the controls, suggesting an interesting reparative and regenerative potential of irradiation-damaged/-dysfunctional salivary glands. The Figure below exemplifies some of these findings.

Conclusions: Biocompatible, reproducible, and customizable self-assembling layer-by-layer core-shell delivery system is formulated and presented. Our findings suggest that localized sequential bioactive delivery of dual cytokines (in specific dose and order) can prevent irradiation-induced damage via reducing apoptosis and also has the potential to promote in situ

proliferation of salivary gland cells; maxSALIVA is scalable (Good Manufacturing Practice or GMP production for human clinical trials) and patent-pending.

Recent publications

1. Haidar, Ziyad. (2023). Digital Dentistry: Past, Present, and Future. Digital Medicine and Healthcare Technology. 2. 10.5772/dmht.17.

2. Olate, Sergio & Ravelo S, Víctor & Alister, Juan & Netto, Henrique & Haidar, Ziyad & Sacco, Roberto. (2023). Early Treatment of Unilateral Condylar Hyperplasia in Adolescents: Preliminary Results. Journal of Clinical Medicine. 12. 3408. 10.3390/jcm12103408.

3. Haidar, Ziyad. (2023). Anti-Tumor Drug Resistance and Modern Oncologic Pharmaco-Therapy: RNA and DNA Methylation, Mechanisms and Histone Modification, Epigenetic Regulation and Targeting Epigenetic Modifiers in Contemporary Cancer Therapy. 10.5772/intechopen.111614.

Biography

Ziyad S. Haidar is a Professor of Biomaterials and BioEngineering and Scientific Director of Facultad de Odontología, Universidad de los Andes, Santiago de Chile. Concurrently, Prof. Dr. Haidar is the Founder/Head of the Biomaterials, Pharmaceutical Delivery and Cranio-Maxillo-Facial Tissue Engineering Laboratory (BioMAT'X Chile - HAIDAR LAB), at the Centro de Investigación e Innovación Biomédica (CiiB) and is a Faculty member in the Doctoral Program (BioMedicine) at Facultad de Medicina, Universidad de los Andes , Santiago de Chile. Also serves as Visiting Professor at MaxilloFacial Surgery Division of Universidad de la Frontera-Temuco. Haidar holds a PhD in BioEngineering from McGill University, Montréal-Canada with post-doctoral residency at the Montréal Shriners Hospital (Orthopedics), McGill University Health Center, Montréal-Canada. Before moving to Chile, he served as an Associate Professor of Bioceramics/Chair of Excellence in BioEngineering at Université de Limoges-France and was an Assistant Professor at Department of Pharmaceutics and Pharmaceutical Chemistry (cross-appointment/Department of BioEngineering), University of Utah-USA. Haidar served between 2010 and 2012 as Adjunct Professor of Head&Neck Surgery and the Scientific Director of the Research Center at Inha University Hospital, Seoul-South Korea. Haidar is an international speaker with >125 publications, conference proceedings, text-books, theses and patents and is an editorial board member of several national/international scientific journals and periodicals. He is a member of the International Bone and Mineral Society, Society for Biomaterials, Canadian Biomaterial Society as well as the Canadian and Lebanese Societies of Plastic Surgeons, to name a few.

E: zhaidar@uandes.cl

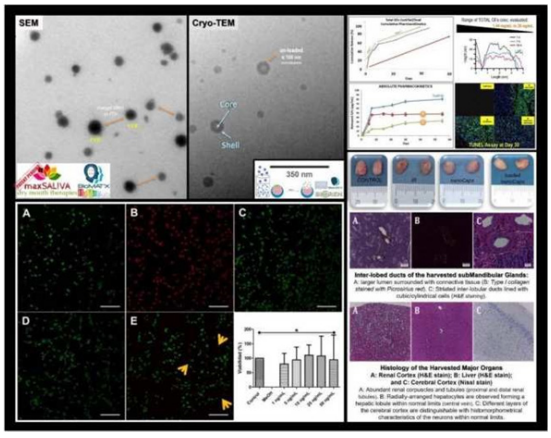


Figure: Graphical Abstract illustrating some of the physical, chemical, pharmacokinetic, cellular and biological (histomorphometrical) prperties of the formulated core-shell nanocapsules, unloaded and loaded with the drugs.

PULSUS
WWW.PULSUSCONFERENCE.COM
39 YEARS IN ASSESSING THE IMPACT OF HEALTHCARE RESEARCH

5th World Congress on

DENTISTRY AND MAXILLOFACIAL SURGERY

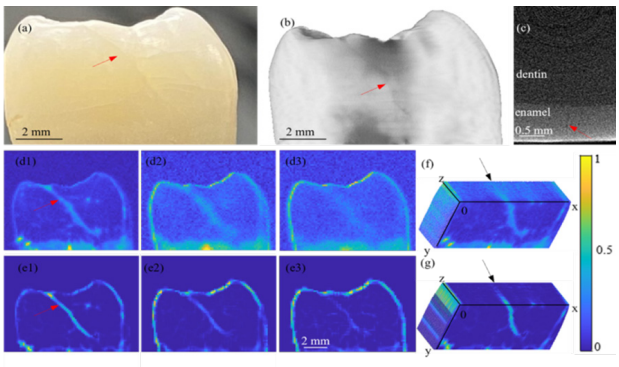
September 18-19, 2023 | Rome, Italy

Received Date: 06-04-2023 | Accepted Date: 06-07-2023 | Published Date: 10-20-2023

Three-dimensional thermophotonic super-resolution and multispectral truncated-correlation photothermal coherence tomography imaging methods for detection of dental subsurface defects and early-stage bacterial demineralization caries

Andreas Mandelis
University of Toronto, Canada

This talk will present a method to overcome the physics of lateral thermal diffusion in photothermal infrared-photon-mediated (thermophotonic) dynamic tomographic imaging that has greatly limited the use of thermal imaging (thermography), specifically, its application to dental diagnostic imaging to date. The method was developed using a spatial second derivative algorithm, combined with a modified spatiotemporal gradient adaptive filter, an experimentally developed photothermal point spread function (PPSF) for optimized diffusive image restoration (Richardson-Lucy deconvolution). When implemented through enhanced truncation-correlation photothermal coherence tomography (eTC-PCT) [1], the PPSF-mediated deconvolution corrects diffusion spread by reversing the effect of spatial convolution. A combination of these operations was applied to the conventional eTC-PCT images, and the results show that it restores the image resolution very close to the pre-diffusion optical resolution enhanced by thermal conversion immune to optical scattering. This is a breakthrough since traditional limitations caused by lateral and axial heat diffusion were overcome. A first study of highly optically scattering biological tissues such as human dental enamel shows that the unique combination of thermophotonic optical-grade restoration methods and rapid camera CCD or cMOS full pixel array image processing [2] reveals the true spatial extent of a hairline dental enamel crack, resolves finely patterned anatomical structures of a mouse brain in-vivo and ex-vivo, and monitors cancerous tumor growth in-vivo in a mouse thigh after cancer cell injection [3]. A multispectral (MS) eTC-PCT imaging modality will also be presented for the detection of bacterial-induced dental caries [4]. Compared with conventional TC-PCT [5], MS eTC-PCT was found to provide superior contrast and increased depth information about the state of defects in teeth. The experimental results were validated using micro-computed tomography (μCT). These are distinct advantages for dental imaging over conventional optical methods which cannot operate subsurface due to the high light scattering nature of soft and hard tissues, while X-rays exhibit lower contrast to early demineralization and compromised safety due to ionizing radiation.



a) A photograph of a tooth with a crack shown by the red arrow. (b) Reconstructed MicroCT image. (c) MicroCT slice of the tooth showing the depth of the crack in (b). (d1-d3) Conventional eTC-PCT images at delay times 0 ms, 200 ms, and 400 ms, respectively. (e1-e3) eTC-PCT images in (d1-d3) after applying super-resolution algorithms. Angled cross-section of the 3D volume from conventional eTC-PCT images (f) and filtered eTC-PCT images (g).

Recent publications

1. Tavakolian P, Sivagurunathan K, Mandelis A (2017) Enhanced truncated-correlation photothermal coherence tomography with application to deep subsurface defect imaging and 3-dimensional reconstructions. Journal of Applied Physics 122: 023103.

2. Kaiplavil S, Mandelis A (2014) Truncated-correlation photothermal coherence tomography for deep subsurface analysis. Nature Photonics 8: 635-642.

3. Tavakolian P, Roointan S, Mandelis A (2020) Non-invasive in-vivo 3-D imaging of small animals using spatially filtered enhanced truncated-correlation photothermal coherence tomography. Scientific reports 10: 1-10.

Biography

Andreas Mandelis has established the fields of diffusion waves and thermophotonics and has made seminal contributions to photoacoustic and photothermal sciences and technologies. He is the Director of the University of Toronto's Institute for Advanced Non-Destructive and Non-Invasive Diagnostic Technologies (IANDIT) and the Director of the Center for Advanced Diffusion-Wave and Photoacoustic Technologies (CADIPT). His current research interests are advanced instrumentation and metrology development for non-destructive and non-invasive imaging at the industrial – biodiagnostics-in-healthcare interface.

E: mandelis@mie.utoronto.ca

PULSUS
WWW.PULSUSCONFERENCE.COM
39 YEARS IN ASSESSING THE IMPACT OF HEALTHCARE RESEARCH

5th World Congress on

DENTISTRY AND MAXILLOFACIAL SURGERY

September 18-19, 2023 | Rome, Italy

Received Date: 06-09-2023 | Accepted Date: 06-11-2023 | Published Date: 10-20-2023

Near miss baby and Near miss mom - Important indicators of maternal and child care

Fernanda Achkar
Armound, Jane de Eston, Brazil

The term “near miss" is used as a tool to assess and improve the quality of care, first applied in the study of maternal health, however, it has recently been used in the neonatal context. There is a lot of correlation between the near miss mom and the near miss baby due to the maternal characteristics that are related to the incidence of neonatal morbidity. For this reason, the present study aimed to verify the characteristics of newborns who had serious complications due to pregnancy, delivery, or puerperium; and maternal variables associated with severe infant morbidity. Through a retrospective longitudinal observational case and control study, carried out through a survey of medical records at the Medical Archive and Statistics Service of the Hospital Maternidade de Interlagos, located in the southern region of the city of São Paulo, in the year 2019. After selecting the sample of interest, the data of interest for the research were collected, which addressed information regarding the mother and the newborn. Through the analysis carried out, it was possible to observe that the Apgar of 1st and 5th minute proved to be insignificant in individual values, however, performing the general analysis of the frequencies it was possible to conclude a significance in the results, as well as the outcomes of the newborns, adequate prenatal care and the normal labor and delivery. Neonatal complications such as fetal distress and bradycardia, ICU stay and growth restriction did not prove to be directly relevant, such as maternal comorbidities. Nevertheless, is still possible to conclude that there is a strong relationship between maternal and child health and greater care must be considered.

Figure 1: Main direct and indirect factors of importance for the Near Miss Baby and Mom.

Recent publications

1. Kale PL, et al. Pragmatic criteria for defining neonatal near miss: a comparative study. Journal of Public Health, v. 51, p. 111, 2017.
2. Shirley P, et al. Near miss Neonatal: integrative review. Research, Society and Development, vol. 9, no. 11, e5059119979, 2020.
3. Pileggi-Castro C, et al. Development of criteria for identifying neonatal near-miss cases: analysis of two WHO multicountry cross-sectional studies. BJOG: An International Journal of Obstetrics & Gynaecology, v. 121, p. 110–118, 2014.

Biography

Fernanda Achkar is a Fifth-year medical student at the UNISA, university in São Paulo, Brazil. She was vice president of the academic center at her university, created and organized volunteer work for the needy population of the state and published several articles in journals and conferences relevant to the medical field, mainly in concern about maternal and child health.

E: fernanda.achkar@hotmail.com