



MIDWEST SOCIETY OF PERIODONTOLOGY NEWSLETTER

**MIDWEST SOCIETY
OF PERIODONTOLOGY**
2015-2016
OFFICERS & EXECUTIVE
COMMITTEE

PRESIDENT

Dr. Diego Velasquez
Fenton, MI

PRESIDENT ELECT

Dr. Paula Weistroffer
Iowa City, IA

VICE PRESIDENT

Dr. Tae-Ju Oh
Ann Arbor, MI

SECRETARY

Dr. Darnell Kaigler
Detroit, MI

TREASURER

Dr. Paul Luepke
Highland Park, IL

PAST PRESIDENT

Dr. Paul Ricchetti
Mayfield Heights, OH

COUNCILMEMEN

Dr. Clark Barco
Indianapolis, IN

Dr. Nabil Bissada
Cleveland, OH

Dr. Megan Ratliff
Glenview, IL

CONTENTS

President's Message.....1
AAP Elections.....2
Meeting Sponsors.....2
Meeting Photos.....3
Research Forum
Abstracts.....4-6
Graduate Student
Research Forum.....7

PRESIDENT'S MESSAGE

Greetings and wishes for a happy Spring to all of you from Fenton, Michigan.

The 58th annual meeting of our society successfully embodied the ideal forum for the celebration of the mission and purpose of the Midwest Society of Periodontology: "To unite a group having a common interest in the science of periodontology". Congratulations to all parties involved that allowed for this event to happen on a job well done! Special mention to

Drs. Constantin Farrah and Paul Ricchetti for having put together an extraordinary scientific program emphasizing the special relationship between the periodontist and the restorative dentist.

It is not rare to hear people wonder what the allure is to travel to Chicago in the middle of winter, braving the low temperatures and penetrating wind in order to attend a meeting.

The answer is clear: the opportunity to spend time with friends, get access to world class speakers, visit multiple vendors under one roof and enjoy the entertainment and culinary stages of our host city. The Windy City is the ideal location offering a refuge within its gothic-revival architecture to nestle a group of passionate periodontists in their quest of advancing the science of periodontology.

It is this same spirit of collegiate altruism that sets up periodontology as a unique dental specialty by offering an exciting picture as we look into the future of our profession. The scope of our practice and services provided to our patients, the advancements in our field, the talent behind these advancements and the body of leadership guarding the interests of the periodontal community are but a few of the key elements that make our specialty strong and capable to surmount present and future challenges.

A good example of our brilliant future was showcased during the Graduate Student Research Forum chaired by Dr. Gustavo Avila-Ortiz. Three excellent oral presentations by Drs. Himabindu Dukka, Carlos Garaicoa and Juan Rodriguez were shared with a robust audience of early risers, rewarding Dr. Rodriguez with the top honors after a very tight deliberation by the judges.

The Midwest Society of Periodontology is strong and vibrant. It is very encouraging to see young and enthusiastic colleagues volunteering to serve and make our society more relevant and valuable by working selflessly to address the challenges of the periodontal community in the Midwest and anticipate its future needs. All of these efforts are cleverly coordinated by our Executive Director, Dr. Greg Fauth whose work behind the scenes is so vital for the proper functioning of this organization. Special compliments to Greg on being so instrumental in bridging the electronic gap by implementing web enabled-registration to our different events for the first time during the history of the MSP.

Recognition is due to our immediate past president, Dr. Paul Ricchetti. Paul is an innate and wise leader whose heart beats passionately for all things perio. We are fortunate to have leaders as dedicated as himself right in our own backyard!

Planning for our 2016 scientific meeting is underway. Here is a teaser: there will be a limited attendance workshop on provisionalization of dental implants; a pioneer on site augmentation procedures will be joining us from Milan, Italy; the chair of the periodontal program at the University of Bern in Switzerland will be sharing with us his cutting edge research on periodontal regeneration, and a fellow periodontist from "the trenches" of his private practice on the east coast will be enlightening us with his unique and successful practice management style that both established and newer practitioners will find not only engaging but very useful. It will definitely be one of those meetings loaded with pearls that you will not want to miss!!!

Lastly, I am honored and grateful for the opportunity to serve you as president of this prestigious organization. Following the footsteps of dedicated colleagues who have unselfishly volunteered their talents, knowledge, and skills to serve our periodontal community is a privilege that should not and will not be taken lightly!

Dr. Diego Velasquez





AWARD TO THE PAST PRESIDENT

Dr. Diego Velasquez (L), Fenton, MI, President Midwest Society of Periodontology presents Dr. Paul Ricchetti (R), Mayfield Heights, OH, Immediate Past President with a plaque of appreciation.

AAP ELECTIONS

The AAP Elections are during the month of June, 2015. District 4 ballots will have options for:

SECRETARY-TREASURER

Bryan Frantz from Pennsylvania
Richard Kao from California

ABP DIRECTOR (VOTE FOR TWO)

Mary E. Aichelmann-Reidy, Baltimore, MD
Donald S. Clem III, Fullerton, CA
Robert M. Eber, Ann Arbor, MI
James A. Katancik, Portland, OR

ABP NOMINATING COMMITTEE

Paul A. Ricchetti, Mayfield Heights, OH
Michelle N. Zmick, Long Grove, IL

GENERAL MEETING SUPPORT

We want to express our thanks to the exhibitors who support the Midwest Society of Periodontology by participating in our annual meeting. We appreciate their support of our Society.

SPONSORS

BioHorizons
Biomet 3i
BMT Medizintechnik GmbH
Boca Dental Supply
Community Tissue Services
ConeScan
DentiumUSA
Dentsply
DoWell Dental Products
G. Hartzell & Son
Geistlich
Hiossen
Millenium Dental Technologies
MIS Implants
NobelBiocare
Osada
Osteohealth
Predictable Surgical Technologies
Salvin
Snoasis Medical
Straumann
Sunstar
TePe Oral Health Care, Inc.
Thommen Medical
Treolar & Heisel
Zimmer
Adin Implants
Colgate Palmolive
Exactech, Inc./One Point Medical
GluStitch
Intra-Lock International, Inc.
HuberMed, Inc.
Keystone Dental, Inc.
Medtronic
Osstell, USA
Southern Anesthesia+Surgical
Piezosurgery

THANK YOU!

RESERVE THE DATE!
59th MSP Annual Meeting
February 26-28, 2016

RENAISSANCE HOTEL
Chicago, IL



Dr Stephen Chu presented all day on Saturday on Prosthetic Strategies in Peri-implant Mucosal Tissue Preservation of Immediate Implants: The Periodontal- Restorative Interrelationship in Combination Therapy



Dr. Daniel J. Melker spoke at the Friday Limited Attendance Lecture on "Ideal Periodontal Concepts for Comprehensive Perio-Restorative Cases".



On Sunday morning, Dr. Cary Shapoff presented, "Achieving Ideal Implant Esthetics-Managing the Hard and Soft Tissue Zones".



Dr. Joan Otomo-Corgel, current AAP President, addressed the Society at the beginning of Saturdays meeting.

RESEARCH FORUM ABSTRACTS

PROTEIN AND MICROBIAL BIOMARKERS IN PERI-IMPLANTITIS**DR. CARLOS GARAICOA-PAZMINO**

University of Michigan, Ann Arbor, MI

Background

Current clinical periodontal diagnostic criteria used in the practice setting have limited utility to predict future disease progression. The possibility to detect real-time disease activity or predict future disease progression around dental implants has potential for in-office decision-making of implant therapy.

Objective

The aim of the present cross-sectional study was to determine the profile of selected peri-implant crevicular fluid (PICF)-derived biomarkers paired with selected microbial profiles of healthy and peri-implantitis-affected implants.

Methods

Sixty-eight patients (one site per patient) were included in this study and classified into either healthy implant (control group) or peri-implantitis affected implants population (test group). Subgingival plaque biofilm was collected from the mesio-buccal surfaces (control group) and the deepest surface (test group) of implants to correlate bacterial profiles associated with peri-implantitis. DNA from the target bacterial species (*Aggregatibacter actinomycetemcomitans*, *Prevotella intermedia*, *Porphyromonas gingivalis*, *Tannerella forsythia*, and *Treponema denticola*) was tested. The PICF samples were collected from the deepest PPD of the peri-implantitis site (Test group) or the mesio-buccal aspect of the healthy implant site (Control group) respectively. Targeted biomarkers included pro-inflammatory and angiogenic biomarkers, Interleukin-1 beta

(IL-1 β), Vascular endothelial growth factor (VEGF), tissue resorptive matrix metalloproteinase-8 (MMP-8) and tissue inhibitor of metalloproteinase-2 (TIMP-2) and levels of bone turnover biomarker, osteoprotegerin (OPG). The individual and combined diagnostic ability of each biomarker and target bacterial species was analyzed.

Results

Concentration levels of IL-1 β (44.6 vs 135.8; $p < 0.001$), TIMP-2 (5488.3 vs 9771.8; $p < 0.001$) and VEGF (59.1 vs 129.0; $p = 0.001$) were increased in the test group. The expression levels of MMP-8 (6029.2 vs 5943.1; $p = 0.837$) and OPG (66.5 vs 111.7; $p = 0.184$) did not reveal a statistical significant difference among groups. All targeted microorganisms were found in increased percentages regarding their healthy or diseased status, however, only *Porphyromonas gingivalis* revealed a strong association with peri-implantitis (1.64 vs 5.40, $p = 0.029$). None of the odds ratios of all combinations of the PICF biomarkers and targeted microorganisms showed any increased effect over IL-1 β alone.

Conclusion

The present data suggests that PICF-derived biomarkers combined with site-specific microbial profiles have potential as possible indicators for the onset of peri-implant diseases.

RESEARCH FORUM ABSTRACTS

ROLE OF PEPTIDOGLYCAN RECOGNITION PROTEINS IN PATHOGENESIS OF PREECLAMPSIA AND PERIODONTITIS**DR. HIMABINDU DUKKA**

Indiana University, Indianapolis, IN

Background

Preeclampsia (PE) is a pregnancy related disease and is the leading cause of maternal and fetal morbidity and mortality. Its etiology is largely unknown. Recently, altered immune-inflammatory responses at the placental level in response to infectious agents have been proposed to be etiological for this pregnancy complication. Chronic infections at distant sites are potential sources for such infectious agents, e.g., chronic periodontitis. Oral pathogens such as *Porphyromonas gingivalis*, *Fusobacterium nucleatum* etc., and their components have been detected in chorioamnionitis. The immune-inflammatory responses to microbes are mediated by recognition of bacterial components called microbial associated molecular patterns (MAMPs) through conserved cognate receptors called pattern recognition receptors (PRRs). A new class of PRRs called peptidoglycan recognition proteins (PGLYRP) constituting four distinct molecules PGLYRP 1-4 is emerging as key player in modulating host responses to PGN and its breakdown products. Not much is known about the expression and function of these proteins in the maternal-fetal interface. Taken together, we propose that a critical knowledge gap exists on the role of PGLYRPs in the innate immune responses that occur at the maternal-fetal interface in response to pathogens and their components that may be present in maternal circulation secondary to chronic infections like gingivitis and periodontitis.

Objective

The aim of this pilot study is to investigate the expression PGLYRPs (1-4) in the placenta of pre-eclamptic women. Additionally, to explore the effect of oral bacterial pathogens and its components in modulating the expression of PGLYRPs in trophoblasts.

Methods

This case control study consisted of subjects with: (1) normal term pregnancies (n=20) (2) pre-eclampsia (n=20). A real time quantitative PCR was used to analyze the relative mRNA expression of the following pattern recognition receptors- TLR2, TLR4, NOD1, NOD2, PGLYRP1, PGLYRP2, PGLYRP3, and PGLYRP4. Cell culture and apoptosis assay were performed to investigate the response of trophoblasts to various oral bacteria and their cell wall components. Summary statistics (mean, standard deviation, range, 95% confidence interval for the mean) were calculated for PGLYRP 1-4 expression for each group. One-way ANOVA followed by pair-wise comparisons using Fisher's Protected Least Significant Differences was used to test for group differences in PGLYRP 1-4 expression.

Results

The placental samples had elevated mRNA expression of PGLYRP1(30 fold) and PGLYRP3 (400 fold) when compared with unstimulated trophoblast cell lines (Figure 1, unpublished data). Similarly, TLR2, TLR4 and NOD2 mRNA were elevated in placental samples. (Figure 1). We have noted significant increase in PGLYRP 1, 2 and 3 in gingival tissue of subjects with chronic periodontitis when compared to health (Figure 2, unpublished data). The robust elevation of PGLYRP2 in periodontal tissues maybe secondary to elevated levels in systemic circulation in response to oral infection or alternatively PGLYRP2 maybe elevated locally in periodontal tissue.

Conclusion

This study demonstrated that elevated levels of PGLYRPs 1 and 3 were expressed by the placental samples. Additionally, oral infections may elevate PGLYRP2 in the systemic circulation, having consequences at distant sites like the placenta when there is presence of coexisting infectious agents in the circulation. The results from this novel research could lead to development of salivary and/or plasmatic biomarkers for early detection of pre-eclampsia that warrants further investigation. Understanding the role of PGLYRPs at the maternal-fetal interface may also provide potential new therapeutic targets for treating pre-eclampsia.

RESEARCH FORUM ABSTRACTS

PERIOSTIN AND PERIODONTAL REGENERATION

DR. JUAN C RODRIGUEZ

University of Michigan, Ann Arbor, MI

Background

Periostin, a matricellular molecule highly expressed by periodontal ligament (PDL) fibroblasts, is implicated in the maintenance of proper periodontal integrity. It interacts with integrin receptors on target cells to modulate cell phenotype, matrix remodeling and collagen fibrillogenesis. We believe that periostin represents a novel biologic agent with significant diagnostic and therapeutic potential that could ultimately enhance patient care. In order to explore the relevance of periostin in periodontal healing and regeneration, the following specific aims will be addressed:

Aims

1: To Determine the Effect of Periostin in hPDL Fibroblast Proliferation and Migration. Hypothesis: Proliferation and migration are enhanced by periostin in PDL fibroblasts. 2: To Determine the Periodontal Regenerative Potential of Periostin. Hypothesis: The use of exogenous delivery of periostin at periodontal wound sites will promote predictable and complete regeneration.

Methods

Human PDL (hPDL) cells were isolated and cultured under ideal conditions as described previously by our group. Gene transfer for recombinant adenovirus-encoding periostin (POSTN) was performed and tested for ideal multiplicity of infection (MOI), determined for obtaining the higher

periostin expression with the lower cell toxicity in hPDL cell cultures. Cell migration and proliferation for hPDL cell cultures at different MOI were evaluated with the use of scratch assay and Ki67 proliferation marker. Synthetic collagen delivery scaffold with hPDL cells and adenovirus encoding POSTN were used at different MOI for in vivo murine model. ANOVA, Fisher LSD and t-tests were used to analyze statistical differences between groups ($p < 0.05$).

Results

In terms of transient adenovirus infection, an MOI of 800 was the more advantageous to produce better effects in terms of sustained production levels of periostin, release to the media and cell migration with the lower cell toxicity. The expression of periostin was even higher when infected cells were mechanically stimulated. These effects were maintained when the cells were co-incubated with a synthetic collagen delivery scaffold suitable for in vivo transplantation. The effect of Ad-CMV-POSTN hPDL cells delivered in a collagen scaffold appears safe and do not exert detrimental changes in an animal regeneration model at the micro-ct and histologic level.

Conclusion

Periostin is potentially applicable for the promotion of periodontal regeneration in vivo.

GRADUATE STUDENT RESEARCH FORUM

At the February meeting of the MSP in Chicago the finalists of the Graduate Student Research Forum were all presented plaques and \$500 checks at the awards ceremony and reception. The Research Forum and awards ceremony are supported by a generous grant from Sunstar Americas, Inc.

FIRST PLACE

Dr. Juan C Rodriguez

HONORABLE MENTION

Dr. Carlos Garaicoa-Pazmino
Dr. Himabindu Dukka



Mark Carlascio from Sunstar Americas stands next to Dr. Juan C Rodriguez, First Place Award Recipient. On the far right, is Dr. Carlos Garaicoa-Pazmino who stands next to Dr. Himabindu Dukka, both of whom were awarded Honorable Mentions.

THE MIDWEST SOCIETY WISHES
TO ACKNOWLEDGE SUPPORT
Thank you to Event Sponsors for the 2015 meeting.

SUNSTAR AMERICAS

Graduate Student Research Forum
Awards Ceremony

DENTSPLY IMPLANTS, NORTH AMERICA

Dr. Danny Melker, Friday's Scientific
Session Meeting Programs

BIOMET 3I AND DENTIUM USA

Dr. Stephen Chu, Saturday's
Scientific Sessions

BIOHORIZONS

Dr. Cary Shapoff, Sunday's
Scientific Session

GEISTLICH

Meeting Notebooks



SAVE THE DATE!

59th MSP Annual Meeting, February 26-28, 2016

RENAISSANCE HOTEL

Chicago, IL

NEW MEMBERS

Pamela Amundson, Richfield, OH
Nabil Beaini, Columbia, MO
Derek Borgwardt, Iowa City, IA
Alavania Branko, South Bend, IN
Eric Browning, Muncie, IN
Juzer Chinwalla, Bloomingdale, IL
Thomas Clifford, Westlake, OH
Joe Cristoforo, Middleton, WI
Charles C. DiFranco, Park Ridge, IL
Waeil Elmisalati, Milwaukee, WI

Konstantin Gromov, Chicago, IL
Arndt Guentsch, Milwaukee, WI
Dawlat Hasso, Troy, MI
Amon Holt, Kansas City, MO
Thomas Jackson, Barrington, IL
Truman Johnson, Cedar Rapids, IA
Grace Kunst, Pleasant Prairie, WI
Suzanne Mason, Traverse City, MI
Andrew Monestero, St. Louis, MO
Eddie Morales, Greenfield, WI

Jeffrey Naylor, Marywood, IL
Andre Paes DaSilva, Cleveland, OH
Brooke Pancer, Toronto, ON
John Picard, Bay City, MI
Kate Quinlin, Chicago, IL
Kimberly Sheppard, Hoffman Estates, IL
Spencer Shoff, Peoria, IL
Ryan Shure, Toronto, ON

1ST CLASS
U.S. POSTAGE
PAID
Glenview, IL 60025
Permit No. 72

MIDWEST SOCIETY OF PERIODONTOLOGY
1940 W. Galena Blvd.
Aurora, IL 60506

