Research & Table Clinic Day 2020 Structured Abstract

Click on "Choose an item" then the down arrow, to reveal the various options

TITLE:

Periodontal pathogens and vision loss?! Systematic Review.

PRESENTER:

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Level: **OTHER**

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MAJOR ADVISOR

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Department: **DCG FACULTY - PERIO**

IS THIS A COMPETING PRESENTATION: YES

SELECT RESEARCH / SCHOLARLY TOPIC: LITERATURE REVIEW(systematic review, etc)

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TITLE:
Periodontal pathogens and vision loss?! Systematic review.

OBJECTIVES:
Over the years, epidemiological studies have brought evidences that links oral diseases especially periodontal with many systemic diseases including cardiovascular disease, respiratory infection, diabetes, adverse pregnancy outcomes, neurodegenerative disease including cancers. Recent limited evidence indicates correlation between eye diseases and Periodontal diseases (PD). Our objective is to systematically review the association of Periodontitis and Age-related macular degeneration (AMD), the prominent cause of vision loss in elderly.

METHODS:
Electronic literature search of PubMed, Cochrane, Web-of-Science, ScienceDirect, Wiley Online Library and TRIP databases performed with the key words: periodontitis, periodontal disease, age-related macular degeneration, association, risk factors, combination phrases, limited to articles published since 1900 to date.

RESULTS:
Five results including two epidemiological surveys indicate that in a study done in 56 patients (age 45 to 90 years), suffering from AMD, most of the patients with AMD had inflammatory lesions in the oral cavity, particularly the periodontium. In another logistic regression model, alveolar bone loss was associated with AMD in males with an odds ratio of 4.3. National health and nutrition examination survey-III in a population-based study concludes that PD is independently associated with AMD in those aged 60 years or younger (total 52.30% had PD with prevalence of 11.45% AMD). Korean NHNES shows that middle-aged participants with severe PD were 1.61 times more likely to have AMD.

CONCLUSIONS:
Our findings indicate that very limited observations imply the association of PD and AMD, nonetheless, no reports on the mechanisms underlying this physiological relevance interlinking these two chronic diseases. Since the oral cavity is considered the window of general health, a complete understanding of the association and risk factors needs to be evaluated to formulate appropriate preventive measures for individuals at the risk of AMD. Currently, the mechanistic and clinical study is underway in our laboratory to unveil if periodontal lesions are predictive of AMD risk.

LEARNING OBJECTIVES:
1. To understand the pathophysiological link between PD and AMD.
2. To learn about the role of PD as a risk factor promoting AMD.
3. To consider preventive and therapeutic measures in patients with AMD and co-existing PD.

TITLE: Limited to 10 words

Commercial Post-Cure unit and a UV Hand-gel Light Irradiance Differences

OBJECTIVES:

3D printing users often use off-brand devices for providing post-cure polymerization of 3D photo-fabricated devices: such as inexpensive UV hand-gel lights. This project sought to determine differences in spectral irradiance between two types of post-curing devices.

METHODS:

A commercial 3D post-curing unit (Pro-Cure, SprintRay) and a commonly used hand-gel photo-polymerizer (2 units taped together to provide 360 deg of light coverage) (DR-301C, Melody-Susie) were tested. A small spectroradiometer (calibrated to methods traceable to a NIST standard) (STS-VIS-L-100-400-SMA with CC-3-DA detector) as placed into each unit, with the detector end positioned within the center of the unit volume. Calibrated spectra were obtained at each 45 deg position in that central position to obtain information simulating exposure of an as-printed specimen being post-cure irradiated. Five replications were made at each radiometer position. Within each unit, a 1-way ANOVA was performed to determine differences in irradiance values among the various measurement locations. An unpaired, 2-tailed Student's t-test was performed between total irradiance values of both units.

RESULTS:

The commercial device emitted radiation in two strong wavelength peaks: 369 and 402 nm. The UV unit produced one very strong emission: 370 nm, plus a variety less strong peaks. 2-way ANOVA indicated significant differences ($p<0.001$) in irradiance values among various positions within each post-curing device, with many more differences in locations seen in the commercial unit. The t-test indicated significant difference in irradiance between the two units ($p<0.001$): Commercial 14.8 (+/-4.2) mW/cm^2; UV unit 5.5 (+/-4.2) mW/cm^2.

CONCLUSIONS:

Personnel fabricating 3D photo-cured devices need to be aware of the significant differences in delivered irradiance to objects being post-cured in commercial and non-commercial devices for this treatment. Such differences could significantly impact the final properties of the fabricated part.

From OBJECTIVES through CONCLUSIONS – limited to 304 words
Use abbreviations, hyphenation, space placement after units to help reduce overall word count.

LEARNING OBJECTIVES:

1. To understand the purposes of post-curing 3D-printed resins

2. To become familiar with different types of post-curing units

3. To appreciate differences in/implications of spectral distribution and specimen incident irradiance values from different post-curing units

DO NOT EXCEED ONE PAGE IN LENGTH!