

4<sup>th</sup> Asia Pacific Congress & Expo on

# Dental and Oral Health

July 27-29, 2015 Brisbane, Australia

## Evaluation of antimicrobial effect of ozonated water, chlorhexidine, amoxicillin, metronidazole and amoxicillin-metronidazole on *Porphyromonas gingivalis*: An *in-vitro* study

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**Background:** The use of ozone in dentistry has been proposed due to its antimicrobial, disinfectant, biocompatibility and healing properties. Gingival and periodontal diseases play a key role in dentistry. The development of periodontal diseases has been thought to be associated with the presence of several anaerobic bacteria. These species mainly include *Porphyromonas gingivalis* and *Actinobacillus actinomycetemcomitans*, in the subgingival environment. The primary objective of the present study was to evaluate the antimicrobial effect of ozonated water, chlorhexidine, amoxicillin, metronidazole and amoxicillin-metronidazole on *Porphyromonas gingivalis*.

**Materials & Methods:** Double-blind *in-vitro* study was performed to investigate the effect of different concentrations of ozonated water, chlorhexidine, amoxicillin, metronidazole infusion, metronidazole suspension and amoxicillin-metronidazole suspension on the *Porphyromonas gingivalis* (n=840) growth. The minimum inhibitory and bactericidal concentrations of these materials were measured and data were statistically analyzed by two-way ANOVA and LSD methods.

**Results:** Based on the results ozonated water, chlorhexidine and amoxicillin-metronidazole suspension have significantly higher antimicrobial effect than metronidazole suspension, metronidazole infusion and amoxicillin on *Porphyromonas gingivalis* (p<0.05)

**Conclusion:** Due to the strong antimicrobial effect of ozonated water on *Porphyromonas gingivalis*, it can be use as an adjunct antiseptic in periodontitis therapy. Although more clinical and *in-vitro* studies are in demand to standardize indications and treatment protocols of this promising medical agent in dentistry.

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## Osteogenic differentiation of rabbit adipose-derived stem cells: A histomorphometry study

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Adipose tissue is an easily obtainable and robust source of adipose-derived stem cells (ADSC) which their role in regenerative process has been demonstrated in several studies. In this study ADSCs of intra scapular subcutaneous adipose tissue of rabbit had derived, then the possibility of their differentiation to the osteoblasts was evaluated by histomorphometrical analyses. Adipose tissue of intra scapular region of 12 male New Zealand rabbits was harvested during the direct surgery or liposuction. After stem cell preparation, they were culturing in a mixture of a kind of phosphate-based differentiation cocktail and growth media. Presence of osteocyte was evaluated via alizarin red staining and histomorphometry analyse. This study showed the differentiation of ADSCs to osteoblast in a phosphate-based matrix. However, more studies about the differentiation of ADSCs to variant cell lines and the essential matrix are necessary.

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