

# 20<sup>th</sup> European **Cardiology** Conference

October 16-18, 2017 | Budapest, Hungary

## Hemodynamic changes during dental procedures suggest a trigeminocardiac reflex

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**Background/Purpose:** Trigemino-cardiac reflex (TCR) is a unique clinical incident of acute change in hemodynamic balance, which may lead to hypotension, bradycardia, and even clinical crisis. To date, no study evaluated the impact of non-surgical root canal treatment (NSRCT) of irreversible pulpitis teeth, cavitory filling, or implantation under either local infiltration or block anesthesia on hemodynamic changes.

**Methods:** We enrolled 111 patients with 138 irreversible pulpitis teeth that were treated by two sessions of NSRCT. The first session involved mainly the removal of vital pulp tissue with the direct stimulation of the dental branches of the trigeminal nerve, and the second session included the root canal enlargement and debridement with minimal disturbance to the dental branches of the trigeminal nerve. Vital signs mainly the blood pressure were recorded during both NSRCT sessions.

**Results:** The incidences of NSRCT patients with MABP decrease  $\geq 10\%$ ,  $\geq 15\%$ , or  $\geq 20\%$  were all significantly higher in the first NSRCT session than in the second NSRCT session (all the P-values  $< 0.001$ ). In the first NSRCT session, the incidence of patients with MABP decrease  $\geq 10\%$  was significantly associated with tooth type. For both upper and lower teeth, the patients with premolars treated by NSRCT had significantly higher incidences of MABP decrease  $\geq 10\%$  than those with either anterior or molar teeth treated by NSRCT (all the P-values  $< 0.05$ ).

**Conclusion:** We conclude that vital pulp extirpation may lead to a substantial drop in patient's blood pressure possibly related to TCR.

### Biography

James I-Sheng Huang received his DDS degree at Chung Shan Medical University, with more than 30 years of experience in clinical dentistry, specializing in implantology. He was the former president of Taiwan Dental Association and contributed in dental health care by implementing a global budget in Taiwan National Health Insurance. In recent years, the occurrence of syncope in clinical cases marked his interest in the trigeminocardiac reflex (TCR), and subsequently received his PhD at Chung Shan Medical University researching the relationship and between TCR and dental reflexes.

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