

# Dentistry and Oral Health

June 12-13, 2017 London, UK

## Correlation between Expression of Cyp24, Cyp27 and Translocation of VDR in to the Nucleus of Aggressive Periodontitis Patients

**Rajashree Dasari**

Panineeya Institute of Dental Sciences and Research Centre, India

Generalized aggressive periodontitis exhibits severe inflammation and alveolar bone loss. 1, 25-dihydroxyvitamin D<sub>3</sub> (1, 25(OH)<sub>2</sub>D) is the active form of vitamin D<sub>3</sub>, which plays an important role in calcium and bone metabolism. Vitamin D receptor regulates both bone metabolism and inflammation related genes. It plays a key role in oral homeostasis and its dysfunction may lead to periodontal disease. 1,25(OH)<sub>2</sub>D activity is regulated by three genes, 25-hydroxyvitamin D-1 $\alpha$ -hydroxylase (CYP27), 25-hydroxyvitamin D-24-hydroxylase (CYP24) and vitamin D receptor (VDR). The aim of the present study is to analyze the role of these enzymes in expression of VDR receptor in the nucleus of gingival tissue cells of aggressive periodontitis patients. This study included 31 systemically healthy subjects with aggressive periodontitis and 30 healthy individuals. The level of expression of the above genes was estimated by polymerase chain reaction and the nuclear expression of vitamin D receptor by immunohistochemical analysis. Individuals of both the groups expressed CYP 24 and CYP 27 with medium to low intensity. There was no statistical difference in overall degree of expression of CYP 24 between control and test group. CYP 27 was expressed less in aggressive periodontitis patients than the healthy group [0.461, p>0.01]. VDR expression in the nucleus was more in the healthy patients than the test group. The local tissue specific synthesis of 1,25(OH)<sub>2</sub>D<sub>3</sub> is important as it plays a key role in disease progression. Cyp 24 and Cyp 27 functions in vitamin D target tissues to degrade and generate 1,25(OH)<sub>2</sub>D<sub>3</sub> respectively. Thus the concentration of this enzyme and regulation of its expression is a primary determinant of the overall biological activity within the cells. The factors affecting these enzymes also play an equal role and should be considered. And it can also use as a marker for disease progression.

### Biography

Dr.Rajashree Dasari has completed her postgraduation from NTR University of health sciences and currently working as Associate professor at Panineeya Institute of Dental Sciences, India. Her Passion for research and understanding the pathogenesis of periodontal disease creates a new pathways for improving the ability of treating, maintaining the oral health. She also won the best paper award for the research done related to the role of vitamin D receptor at Hongkong International conference, Hongkong in 2014.

drrajashree21@gmail.com

### Notes: