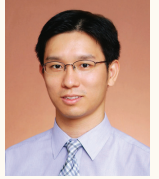




Non-surgical periodontal therapy with adjunctive chlorhexidine in Down syndrome adults

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Background

Early development of periodontal disease is common among Down syndrome (DS) individuals. Management of the disease is regarded to be a challenge for oral health care providers.

There is no unanimous understanding regarding the reasons for early onset of periodontal disease in DS subjects. It may be due to the presence of particular periodontopathic bacteria, viruses, or the contribution from unfavourable host factors (Reuland-Bosma & van Dijk 1986, Cichon et al. 1998, Hanookai et al. 2000).

Studies have reported that in DS subjects, subgingival debridement and a frequent recall program with adequate plaque control could reduce probing depths and modify the subgingival microbiota such that the putative periodontal pathogens are reduced. (Yoshihara et al. 2005, Zaldivar-Chiapa et al. 2005). However, reports on the adjunctive use of chlorhexidine in the management of periodontal disease in DS subjects are lacking.

Objective

To characterize 12 months healing response after non-surgical mechanical periodontal therapy with adjunctive chlorhexidine in Down syndrome adults suffering moderate to severe chronic periodontitis.

Materials and Methods

21 Down syndrome subjects (7 females, aged 25.3± 5.5 years), with mild to moderate mental handicap and having chronic periodontitis were recruited.

All subjects received

- oral hygiene instructions,
- scaling and root debridement under local anaesthesia,
- 1 % w/w chlorhexidine digluconate gel for twice daily toothbrushing,
- 0.2 % w/v chlorhexidine digluconate for twice daily mouthrinsing,
- monthly recalls for oral hygiene reinforcement, scaling and prophylaxis.

Full-mouth clinical parameters

- Supragingival plaque (PI%)
- Bleeding on probing (BOP%)
- Probing pocket depth (PPD)
- Probing attachment level (PAL)

at six sites per tooth using the manual probe (PCP-UNC 15, HuFriedy Manufacturing Co., Chicago, IL) and a custom-made soft acrylic stent as reference guide were recorded at baseline and at 3-, 6-, 9- and 12-months after non-surgical therapy.

Statistical analysis

Changes in mean PI%, mean BOP%, mean PPD and mean changes of PAL were analyzed by paired t-test or Wilcoxon signed rank test, whichever was appropriate. Level of significance was adjusted to $\alpha = 0.005$ for multiple comparisons between baseline and 3-, 6-, 9-, 12-months.

Calibration

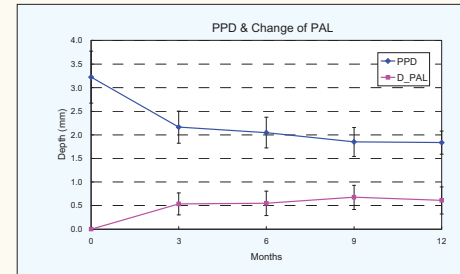
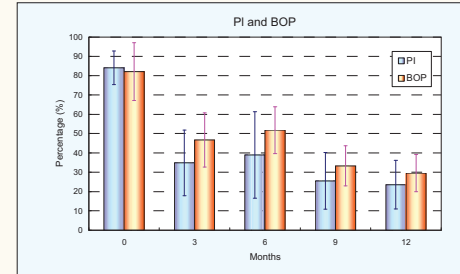
Repeated measurements of PPD and PAL gave a weighted kappa score of >0.75.

Results

At 12 months, PI% reduced from 84.1% to 23.6% and mean BOP% changed from 82.1% to 29.6% ($p < 0.001$).

Mean PPD was reduced from 3.2mm to 1.8mm with a PAL gain of 0.61mm ($p < 0.001$).

Statistically significant differences were found in the changes of PI%, BOP% and PPD, PAL, at 3-, 6-, 9- and 12-month time points compared to baseline ($p < 0.001$).



Discussion and Conclusion

The present study showed that mild to moderately mental handicapped Down syndrome adults with chronic periodontitis could achieve reasonable healing responses following routine non-surgical mechanical periodontal therapy and intensive plaque control involving daily use of chlorhexidine and frequent reviews.

References

- Reuland-Bosma & van Dijk (1986) *J Clin Periodontol* **13**:64-73
- Cichon et al. (1998) *Ann Periodontol* **3**:370-380
- Hanookai et al. (2000) *J Periodontol* **73**:376-384
- Yoshihara et al. (2005) *J Clin Periodontol* **32**:556-560
- Zaldivar-Chiapa et al. (2005) *J Periodontol* **76**:1061-1065