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Oral manifestations, salivary flow rates and *Candida* species in Thai HIV-infected patients

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Abstract

Background: Effects of various Highly Active Antiretroviral Therapy (HAART) regimens on oral health are unclear. **Objectives:** We aimed to evaluate effects of HAART on oral manifestations, salivary flow rates (SFR) and *Candida* species in HIV-infected patients who took mostly non-protease inhibitor-based HAART regimens.

Material and Methods: A cross-sectional study was performed on HIV-infected patients taking and never taken HAART who attended Thai Red Cross AIDS Research Centre (n = 48). Non-HIV subjects were recruited as control (n = 20). Oral conditions and salivary flow rates were evaluated using oral examination and measurement of unstimulated and stimulated saliva. In addition, *Candida* colonization counts (colony forming units; CFUs) and *Candida* species from the collected saliva were evaluated using CHROMagar.

Results: The most common oral manifestation in HIV-infected subjects taking HAART was hyperpigmentation. Unstimulated and stimulated SFR among the three groups were not statistically significant. *Candida* colonization was detected in 64%, 65% and 35% of HIV-infected subjects taking HAART, HAART-naïve, and non-HIV subjects, respectively. While 20% and 35% of HIV-infected subjects with and without HAART, respectively, had *Candida* CFUs higher than 500/ml, all non-HIV carriers had *Candida* CFUs lower than 500/ml. The most common *Candida* colonization species was *C. albicans* in HAART and non-HIV groups. Interestingly, HAART-naïve group was colonized more by non-albicans species.

Conclusions: HAART has minimal effects on oral health. While HAART may not prevent *Candida* colonization, it might lead to reduction of non-albicans species. Because maintaining low *Candida* counts is important, HAART administration and antifungal sensitivity test should be considered in HIV-infected patients.

Key words: HIV, *Candida*, HAART, Oral manifestation, Salivary flow rates.