



MICRO LABS LIMITED



SMART DENTAL UPDATES

Dear Doctor,

Greetings from Micro Labs Limited. We are happy to bring you “**SMART DENTAL UPDATES**” which contains latest and interesting news in the field of Dentistry.

This issue contains

- Silver diamine fluoride on plaque microbiome in Paediatric Dentistry Practice
- Diagnostic accuracy of IL1 β in saliva of non-smokers and smokers
- Secondary oral squamous cell carcinoma after allogeneic hematopoietic stem cell transplantation: A Case Report

Should you require any specific article or medical information, please feel free to contact us at medicalservices@microlabs.in

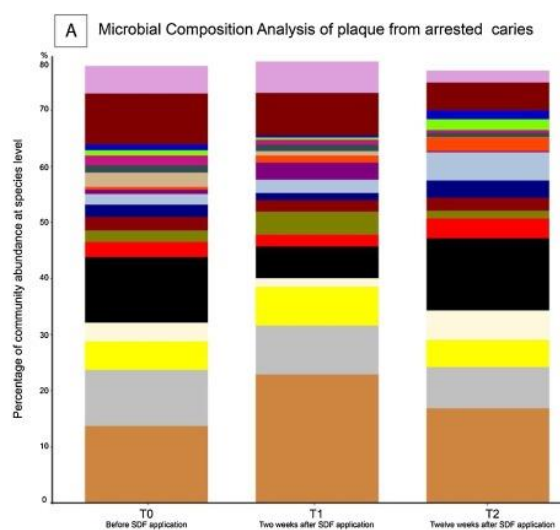
Looking forward to your valuable feedback

Best Regards,
Medical Team, Micro Labs Limited

Silver diamine fluoride on plaque microbiome in Paediatric Dentistry Practice

Silver diamine fluoride (SDF) is a topical fluoride solution for managing caries. This study investigated the microbiome profile and relative abundance changes of the plaque on silver diamine fluoride (SDF)-treated caries in children with early childhood caries.

The investigator assessed the caries as being arrested or active and then collected plaque samples from the caries lesions from fourteen 5-year-old children immediately before, 2 weeks after, and 12 weeks after a one-off application of 38 % SDF.



Mei ML *et al.* assigned 16S rRNA gene sequences to operational taxonomic units (OTUs) using a 98.5 % identity cut-off. They also used a variety of taxonomy- and phylogeny-based statistical approaches to compare the biodiversity and relative abundance among different groups.

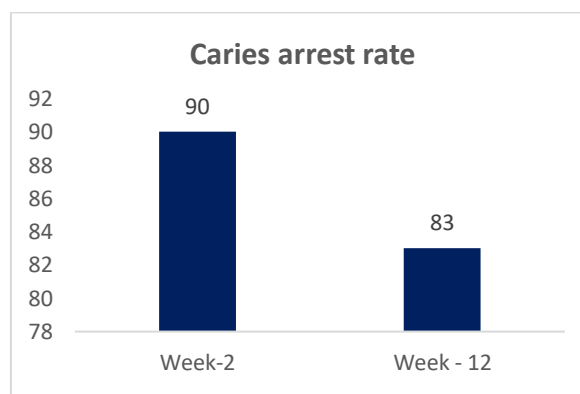
The caries arrest rate were 90 % and 83 % after 2 and 12 weeks, respectively. We studied 46 plaque samples and identified 388 OTUs

(254 identified at the species level, 129 identified at the genus level, and 76 identified at the family level). There was no significant change in the diversity in the arrested caries

before and 12 weeks after SDF treatment

($p=0.71$). The diversity in active caries reduced significantly 12 weeks after SDF treatment ($p=0.006$). The relative abundance of certain caries-related species (e.g., *Streptococcus mutans* and *Lactobacillus* sp.) was reduced in arrested caries but was increased in active caries after SDF treatment.

There was no overall microbiome changes in the caries arrested by SDF.



There was no overall microbiome changes in the caries arrested by SDF. The relative abundance of some caries-related species is reduced in arrested caries, while increased in active caries.

Source: Mei ML *et al.* Dentistry: X Available online. 2020 March. 100016. <https://doi.org/10.1016/j.jjodo.2020.100016>

Silver diamine fluoride on plaque microbiome in Paediatric Dentistry Practice

Periodontitis is a significant health burden and it is one of the Sixth Most prevalent condition across the globe. Studies have shown that saliva is an indicator for oral health. As it can be collected easily and non-invasively, could be valuable for screening and monitoring periodontitis.

Many researchers are currently focusing their efforts on identifying objectively quantifiable biomarkers in saliva that can reliably reflect the oral health. The objective of the current study was to obtain salivary interleukin (IL) 1 β -based models to predict the probability of the occurrence of periodontitis, differentiating by smoking habit.

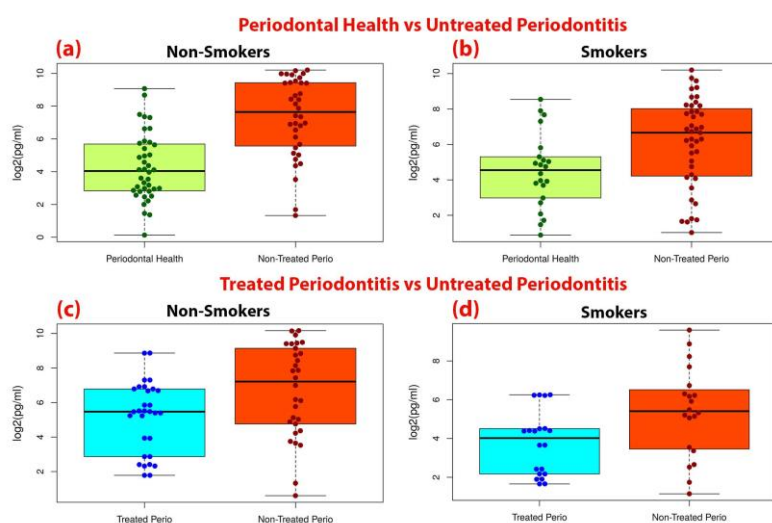
In the present prospective case-control study, a convenience sample of 141 eligible participants, comprising 62 periodontally healthy controls (control group) and 79 subjects affected by untreated periodontitis (untreated perio group), were recruited from

320 consecutive patients in the general population. IL1 β was measured in the salivary samples using the Luminex instrument. Binary logistic regression models were obtained to differentiate untreated periodontitis from periodontal health (first modelling) and untreated periodontitis from treated periodontitis (second modelling), distinguishing between non-smokers and smokers. The area under the curve (AUC) and classification measures were calculated. IL1 β -based predictive model associated with the non-smoking condition revealed higher AUC values (0.830 versus 0.689) in the first phase of modelling; in the second phase, the predictive models presented AUC values in non-smokers and smokers of 0.671 and 0.708, respectively

The diagnostic threshold values of salivary IL1 β in smokers are lower than in nonsmokers.

The salivary levels of IL1 β in the treated periodontal patients were significantly lower than those in these same patients before periodontal treatment, again in both non-smokers and smokers (respectively, IL1 β median: 44.34 and 16.74 pg/ml; and IL1 β median: 150.35 and 42.50 pg/ml: $p < 0.001$ (Figure). Salivary IL1 β has a good diagnostic capability for distinguishing between untreated and treated periodontitis.

Source: Arias-Bujanda N et al. *J Clin Periodontol.* 2020;10.1111/jcpe.13285



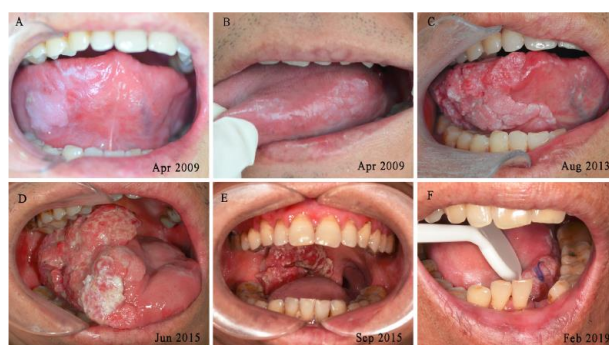
Secondary oral squamous cell carcinoma after allogeneic hematopoietic stem cell transplantation: A Case Report

In December 2005, a 35-year-old Female, who had been diagnosed with chronic myelocytic leukemia, was treated with allogeneic hematopoietic stem cell transplantation (HSCT), which was donated by his human leukocyte antigen-identical sibling. The patient received preoperative chemotherapy before HSCT, and had no history of tobacco or alcohol consumption.

In June 2006, the patient developed oral ulceration and lichenoid lesions on the oral mucosa diagnosed as chronic graft-versus-host disease (GVHD). Cyclosporine (200 mg/day) was used to treat GVHD, and prescribed at a monthly reduced dose of 50 mg from the 18th month of post-transplantation. In April 2009, an asymptotically ill-defined white plaque (2 cm * 1 cm) (Fig. 1A) was observed at the right ventral of his tongue, combined with lichenoid lesions at the left tongue (Fig. 1B). Biopsy was refused by the patient. No special treatment was used and intensive follow-up was emphasized, but the patient showed poor compliance. In August 2013, A cauliflower-like neoplasm (3 cm * 2 cm * 2 cm) was detected at the position of previous ill-defined white plaque (Fig. 1C). Meanwhile, lichenoid lesions were observed at the right palate and the left tongue. The patient rejected surgery. In June 2015, the cauliflower-like neoplasm of his tongue extended to 7 cm * 3 cm * 2 cm (Fig. 1D) with a complaint of mild limitation of tongue mobility, but without numbness. We encouraged the patient to receive surgery. Finally, he was treated with tumor extended resection, partial mandibulectomy, radical neck dissection and tongue reconstruction with an anterolateral thin cutaneous flap. The

pathological diagnosis was oral squamous cell carcinoma (OSCC) with lymph node metastasis (T4N2M0). Two months after the surgery, the patient was satisfied with the reconstruction of his tongue, but with mild limitation of mouth opening. In September 2015, an exophytic tumor (3 cm * 3 cm * 2 cm) was found at his right palate, but no distinct change was observed in the lichenoid lesions of his left tongue.

Routine oral examinations are suggested to monitor the oral health of the patient



The palatal neoplasm was totally resected and diagnosed as OSCC. In February 2019, the patient suddenly presented to the clinic with a chief complaint of left tongue mass for one month. Papilloma (3 cm * 2 cm * 2 cm) and white patches were found at the left tongue (Fig. 1F), and moderate restriction of mouth opening was observed. The papilloma was resected extensively and was histologically confirmed as OSCC. All resected neoplasms showed negative for human papillomavirus (HPV) and p16 by immunohistochemical analyses.

Source: Liu Z et al. [published online ahead of print, 2020 Mar 9]. Oral Oncol. 2020;104629



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