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The effect of atmospheric pressure cold plasma on cariogenic bacteria (*Streptococcus mutans* and *Lactobacillus acidophilus*) isolated from saliva

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The use of atmospheric pressure cold plasma takes into account to be used as sterilizer for several species of bacteria. The main objective the study is to investigate the efficiency of atmospheric pressure cold plasma as an inactivation technique to the cariogenic bacteria. Saliva samples (4 ml) from children aged 9-12 years were collected at two intervals, one at early morning and after 2 hrs after chewing sugar free gums. Bacteria were isolated in petri dishes containing nutrient agar medium and were incubated at 37°C for 24-48 hours. The grown bacterial colonies were counted and multiplied by reverse of dilution to count the bacterial number per ml. The treated samples were exposed to plasma jet placed at 1.5 cm distance above the samples for 2 min. The bacterial colonies were counted again in the same manner as described above. The total bacterial count before gumming was more than the bacterial count after gumming in both the sexes. In boys, the bacterial count before gumming ranged from <10 to 5000 CFU/ml while in girls it reached up to 18400 CFU/ml. The bacterial colony treated with atmospheric pressure air cold plasma jet led to 86.7% to 98.0% drop in bacterial count as listed in the representative saliva samples. Results demonstrated the efficiency of cold plasma jet as bacterial decontaminating agent. Therefore, air cold plasma jet is a promising technique to reduce cariogenic bacteria which can initiate and promote dental caries

Biography

Mousa Abdelmalek Tourky has completed his PhD from Al Azhar University, Cairo, Egypt in 2009, in addition to a Diploma in Oral Surgery from the same university in 1990. He worked at the Faculty of Oral and Dental Medicine, Al Azhar University, Cairo, Egypt. He is currently working is an Assistant Professor of Pediatric Dentistry at the College of Dentistry, Taibah University, KSA. He has published more than 8 papers in reputed journals. He is offering courses also for undergraduate dental students in Ethics of Dental Practice in addition to Dental Public Health.

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