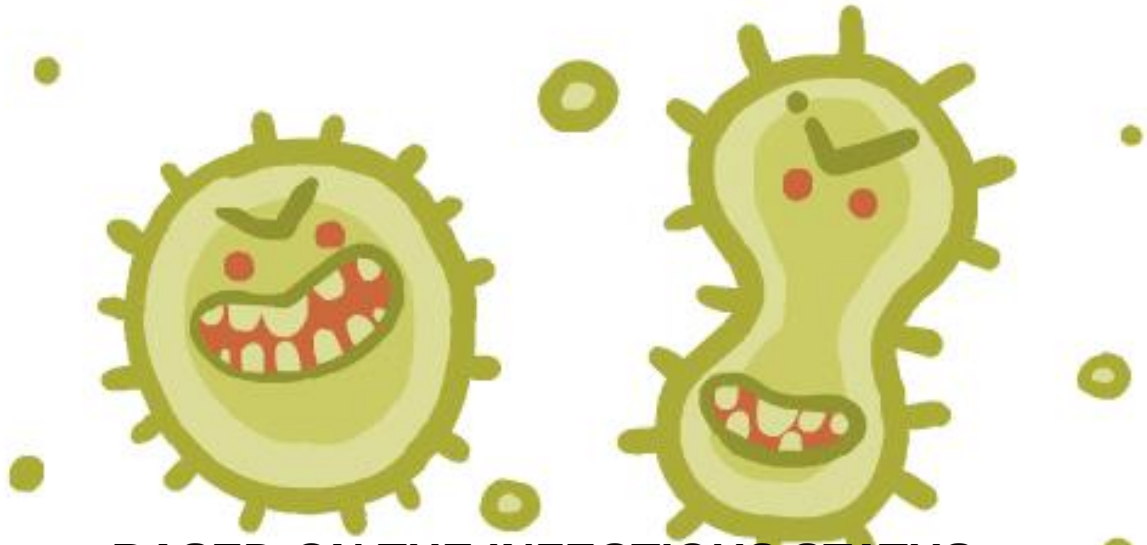
AEROSOL THE NEGLECTED ENEMY OF THE DENTAL SQUAD

INTRODUCTION

THE HUMIDITY AND TEMPERATURE OF THE ORAL CAVITY CREATE A WIDE RANGE OF MICROBIAL HABITATS WITH DIFFERENT ENVIRONMENTAL CONDITIONS SUITABLE FOR GROWTH AND COLONIZATION OF VARIOUS TYPES OF MICROORGANISMS (MARSH & MARTIN 2009)

ORAL MICROBES COMPRISE VARIOUS GROUPS OF MICROORGANISMS INCLUDING BACTERIA, FUNGI, MYCOPLASMA, PROTOZOA, AND VIRUSES

DENTAL HEALTH PROFESSIONALS ARE AT HIGH RISK FOR DEVELOPING INFECTIOUS DISEASES BECAUSE OF THE REPEATED EXPOSURES TO THESE MICROORGANISMS WHILE WORKING IN A DENTAL CLINICAL SETTING (KING ET AL. 1997)



BASED ON THE INFECTIOUS STATUS OF A PERSON, THE BIOAEROSOLS ARE PROVEN TO CONTAIN INFLUENZA OR RHINOVIRUSES, MYCOBACTERIUM TUBERCULOSIS, STAPHYLOCOCCUS AUREUS, VARICELLA ZOSTER VIRUS, STREPTOCOCCUS SPP. (ZEMOURI ET AL. 2017).

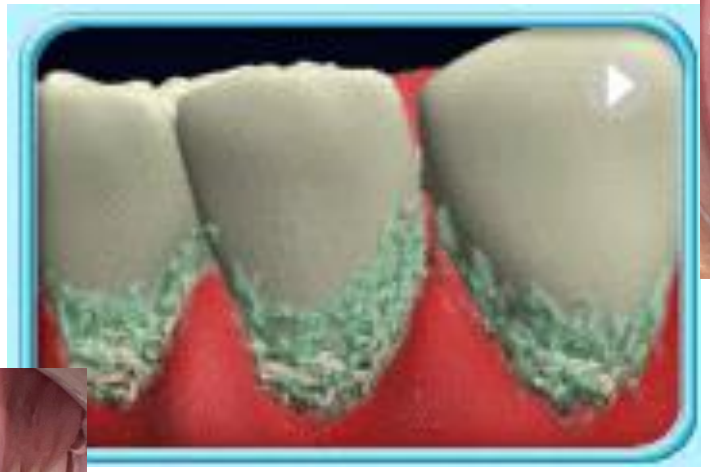
PRE-PROCEDURAL RINSING ARE USED REDUCING AEROSOL CONTAMINATION IN A DENTAL CLINICAL SETTING DURING DENTAL PROCEDURES

DENTAL PLAQUE

DENTAL PLAQUE IS DEFINED CLINICALLY AS A STRUCTURED, RESILIENT, YELLOW-GREYISH SUBSTANCE THAT ADHERES TENACIOUSLY TO THE INTRA ORAL HARD SURFACES, INCLUDING REMOVABLE AND FIXED RESTORATION. (CARRANZA 10th ed)

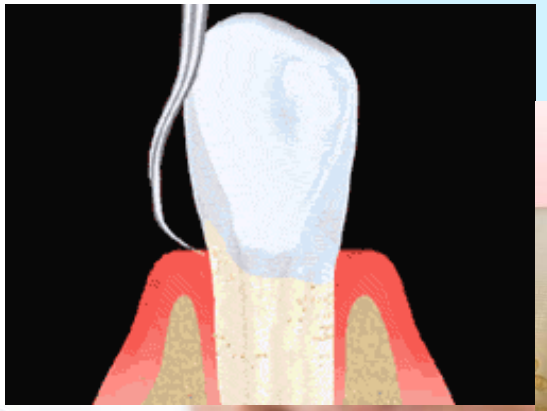
BEWARE OF PLAQUE!

GINGIVITIS



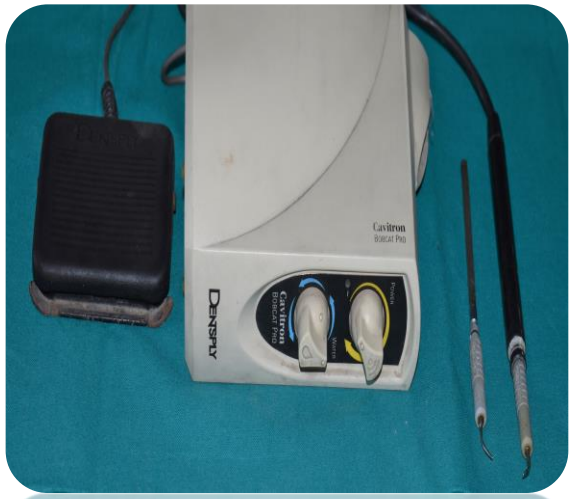
PERIODONTITIS

MICROBIAL PLAQUE BIOFILM CONTROL IS AN EFFECTIVE WAY OF TREATING AND PREVENTING GINGIVITIS AND IS AN ESSENTIAL PART OF ALL THE PROCEDURES INVOLVED IN THE TREATMENT AND PREVENTION OF PERIODONTAL DISEASES



ULTRASONIC SCALERS

- INTRODUCED IN 1955 BY ZINNER



MAGNETOSTRICTIVE SCALER

PIEZOELECTRIC SCALER

DOES NOT NEED SHARPENING

REDUCED CHAIR TIME

ACOUSTIC STREAMING

LUBRICATING EFFECT

CAVITATION EFFECT

ACOUSTIC TURBULENCE

LESSER FINE CONTROL

HIGH COOLANT FLOW

DISCOMFORT DURING SCALING

REDUCED TACTILE SENSITIVITY


AEROSOL PRODUCED
DURING ULTRASONIC
SCALING -POTENTIAL
HEALTH HAZARD

THE CDC NOTED IN 2003 THAT PRE-PROCEDURAL RINSING WITH AN ANTIMICROBIAL PRODUCT CAN REDUCE THE MICROBIAL LOAD IN AEROSOLS AND SPLATTER.

PRE-PROCEDURAL MOUTHRINSE HAS BEEN USED IN REDUCING SARS-COV-2 VIRAL LOADS OR TRANSMISSION SPECIFICALLY.

Determination of efficacy of pre-procedural mouth rinsing in reducing aerosol contamination produced by ultrasonic scalers

Reema M. Rao[1], Nina Shenoy [2] & Veena Shetty [3]

[1]Postgraduate, [2]Professor, Department of Periodontics, A. B. Shetty Memorial Institute Of Dental Sciences, [3]Professor, Department of Microbiology, K.S. Hegde Medical Academy, Nitte University, Mangalore, Karnataka, India.

CHLORHEXIDINE IS CONSIDERED AS THE "GOLD STANDARD" OF ANTIMICROBIAL RINSE .

30 SUBJECTS WERE SELECTED. GROUP I INCLUDED 15 SUBJECTS UNDERGOING ULTRASONIC SCALING WITHOUT PRE PROCEDURAL RINSING AND GROUP II INCLUDED 15 SUBJECTS UNDERGOING ULTRASONIC SCALING WITH PRE PROCEDURAL RINSING WITH (10 ML OF UNDILUTED 0.2% OF CHLORHEXIDINE MOUTH WASH).

RINSING FOR THE DURATION OF 60 SECONDS CAN CAUSE SUBSTANTIAL REDUCTION IN BACTERIAL COUNTS

0.2 % OF CHLORHEXIDINE HAD A SIGNIFICANT EFFECT AS AN ANTIMICROBIAL PRE-PROCEDURAL MOUTH RINSE IN REDUCING THE NUMBER OF MICROORGANISMS IN THE AEROSOL PRODUCED BY THE ULTRASONIC SCALING UNITS.

Effectiveness of Pre-Procedural Rinsing with Essential Oils-Based Mouthrinse to Reduce Aerosol Contamination of Periodontitis Patients

Sadun A.S., Taiyeb-Ali T.B., +4 authors Che Ab Aziz Z.A. • Published 31 January 2020 • Medicine • Sains Malaysiana

30 PATIENTS SUBJECTS ASSIGNED TO PRE-RINSE WITH EITHER 20 ML OF TEST MOUTHWASH (LISTERINE®) OR 20 ML OF PLACEBO MOUTHWASH (COLORED DISTILLED WATER).

EVERY SUBJECT WAS INSTRUCTED TO GARGLE USING THE MOUTHWASH FOR 1 MIN PRIOR TO DENTAL SCALING TREATMENT PROCEDURE.

SALIVA SAMPLES WERE TAKEN PRIOR AND AFTER THE RINSING AND AEROSOL WERE SAMPLED FROM THREE DIFFERENT POINTS

IN THIS STUDY, PRE-PROCEDURAL RINSING USING THE ESSENTIAL OILS-BASED MOUTHWASH LISTERINE® WAS EFFECTIVE TOWARDS REDUCING THE SPREAD OF MICROORGANISMS IN ORAL BIOAEROSOL GENERATED DURING DENTAL TREATMENT PROCEDURES. 89.33% REDUCTION IN MICROBIAL CONTAMINANT LEVEL IS OBSERVED.

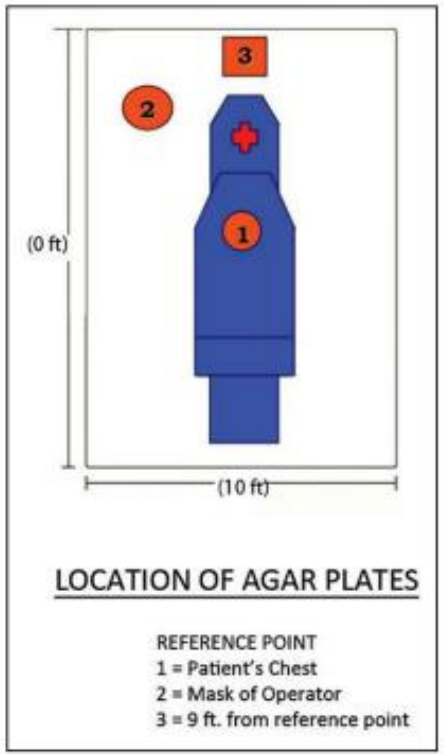
Efficacy of preprocedural mouth rinsing in reducing aerosol contamination produced by ultrasonic scaler: a pilot study

Gunjan Gupta, Dipika Mitra, K P Ashok, Arun Gupta, Sweta Soni, Sameer Ahmed, Ashtha Arya

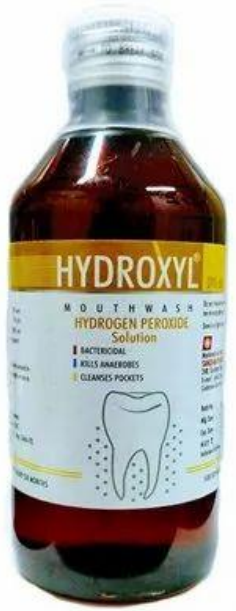
Journal of Periodontology 2014, 85 (4): 562-8

40PATIENTS SUBJECTS ASSIGNED TO PRE-RINSE WITH EITHER 20 ML OF TEST MOUTHWASH 1% PI OR 20 ML OF PLACEBO MOUTHWASH (COLORED DISTILLED WATER).

RINSINGWITH 1% PI FOR 1 MIN PERIOD PRIOR TO SCALING



THIS STUDY INDICATES THAT A PREPROCEDURAL RINSE with PI CAN SIGNIFICANTLY REDUCE 73% OF THE VIABLE MICROBIAL CONTENT OF AEROSOLS GENERATED DURING SCALING.


HYDROXYL
MOUTHWASH
HYDROGEN PEROXIDE
Solution
BACTERIODAL
KILLS ANAEROBES
CLEANSES POCKETS


Bexident
Triclosan
Encías
Colutorio
Gingiprotector
barcino
PG
INTENSA


No Alcohol
Colgate
Plax
FRESHMINT
FRESHNESS

CONCLUSION

PRE-PROCEDURAL RINSING HAS SHOWN REDUCTION IN THE SPREAD OF MICROORGANISMS IN ORAL BIOAEROSOL GENERATED DURING DENTAL TREATMENT PROCEDURES

REDUCTION IN THE NUMBER OF AEROSOLIZED BACTERIA MAY REDUCE THE RISK OF CROSS-CONTAMINATION IN THE DENTAL OFFICE, THUS HELPING PROTECT DENTISTS, DENTAL OFFICE PERSONNEL, AND PATIENTS.


thank
you