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Pre-procedural rinsing, Bacteremia, And Hypertension

According to the Centers for Disease Control and Prevention (CDC), aerosol is a suspension of atmospheric atoms or molecules, such as airborne dust, mists, fumes, or smoke. Aerosols present health and safety issues at work and are used in a wide range of industrial sectors. Particles can enter the body through the mouth, nose, or skin. Workers may experience unfavorable health effects depending on the particles' size, substance, form, and concentration. Both immediate and long-term detrimental health effects exist (Aerosols | NIOSH | CDC). Standard dental operations such as non-surgical prophylaxis are carried out with water and a rotating tool that produces aerosols. Numerous hazardous viruses, bacteria, and fungi are present in these aerosols. Pre-procedural rinsing with rinses such as chlorohexidine has been proven to reduce the bacterial contamination of aerosols during standard dental procedures as supported in the article 'Preprocedural mouth rinses can reduce bacterial contamination in aerosols during periodontal prophylaxis' by Erfan Shamsoddin. Pre-procedural rinsing is important, particularly in dentistry where procedures are known to produce large amounts of aerosols containing pathogens that could be harmful to the clinician and patients. Reducing these oral microorganisms in aerosols makes the environment safer for both the clinician and the patients.

Pre-procedural rinsing can be explained to a patient in several ways. For example, I might explain that while our office works hard to avoid cross-contamination, everything we use on our patients is either sterile or disposable. However, bacteria in the air are the one item that we are powerless to regulate. Through spatter produced during dental cleanings and other procedures, bacteria enter the air. The patient's mouth, which contains microorganisms like bacteria and fungi, is where these splatters are coming from. Pre-procedural rinses are utilized to reduce the number of bacteria in our mouths so that if spatter is formed, it is less dangerous to the clinicians and the patients. Although there is no set quantity or duration for a pre-procedure rinse, I would advise using fifteen milliliters (15ml) for thirty (30) seconds as this is the recommended dosage and duration for using chlorhexidine as a regular mouthwash (Chlorhexidine (Oral Route)).

As we have established pathogens can enter our body indirectly through aerosols however another way for bacteria to enter your body is directly through your system, this is called bacteremia (BAC). Bacteremia is bacteria being present in your blood (Cleveland Clinic,2023). Bacteria can enter your bloodstream through scrapes, cuts, burns, and dental procedures, including teeth cleanings or tooth extraction. Bacteremia is not dangerous for patients in good health however it is especially dangerous for patients who are ill and immunocompromised. This is because their immune system may not be able to handle the bacteria and symptoms, causing bacteremia which can lead to septic shock, a life-threatening condition. Due to this, “pre-medication is required in two groups of patients: those with heart conditions that may predispose them to infective endocarditis; and those who have a prosthetic joint(s) and may be at risk for developing hematogenous infections at the site of the prosthetic” stated by the American Dental Association and supported by the article Bacteremia and Oral Health by Dimensions of Dental Hygiene. Premedication's main objectives in these situations are

to lessen the risk of infection, protect the patient's safety and well-being, and treat any potential consequences.

In addition to bacteremia and pre-medications affecting a patient's health at the dentist's office, blood pressure is another essential screening for a patient's health in relation to both dental operations and the patient's general health. As this screening becomes more common, patients frequently have queries, such as "Why do you need to take my blood pressure when this is just a dental exam and cleaning procedure?" One approach I would take to this issue is to explain to the patient that we take your blood pressure as part of your dental exam for a few reasons. One of these reasons is that high blood pressure, also known as hypertension, is the greatest cause of mortality worldwide; it is known as the "silent killer" because it frequently goes unnoticed ("Hypertension | What We Do | World Heart Federation"). People typically visit their primary care physician once a year, but the dentist twice. We evaluate your blood pressure as part of our professional care for your health, and we care about more than just your dental health. Another reason blood pressure is measured during dental appointments is to prevent medical emergencies while the patient is seated. Most individuals are affected by a condition known as white coat syndrome; some are aware, while others are not. Patients with white-coat hypertension who were not treated had a 36% increased risk of heart attack, stroke, and other heart-related events. In addition, they were twice as likely to die from heart disease (Harvard Health Publishing, 2019). If the clinician is oblivious to the patient's condition and continues with treatment, the patient may have a dental emergency. Furthermore, a simple trip to the dentist can affect a patient more than they realize, regardless of whether that person has white coat syndrome. Checking the patient's blood pressure can assist the clinician in becoming aware

of the patient's discomfort and initiating measures to help relax the patient to avoid further issues.

Finally, oral healthcare providers are critical in hypertension screening. Regular dentist appointments allow for more frequent monitoring of patients' blood pressure. Early detection of hypertension can lead to more prompt referrals, further examination, and management, perhaps preventing major cardiovascular consequences. They can offer instructional materials and advice to encourage individuals to contact their primary care physicians. According to Dimensions of Dental Hygiene, "the new lower threshold is evidence-based with the intention of increasing blood pressure awareness, prevention, treatment, and control." Overall, this proactive approach not only supports better oral health but also contributes to the overall well-being of patients.

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