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Pre –Medication before Periodontal Surgery

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Premedication
It is the medication given prior to an operation. Systemically healthy patients .Medically compromised patients

- ANTIBIOTICS
- NSAIDS
- CHLORHEXIDINE MOUTHWASH
- AXIOLYTICS
- SEDATIVES

SURGICAL SITE SKIN PREPARATION
The aim is to reduce the microbial load on patient's skin as much as possible before incision of skin barrier .The most common agents used are chlorhexidine gluconate and povidone iodine in alcohol based solutions.
Systemically healthy patients

ANTIBIOTICS
For patients who are not medically compromised, the value of administering antibiotics routinely for periodontal surgery has not been clearly demonstrated. Some studies have reported reduced postoperative complications, including reduced pain and swelling, when antibiotics are given before periodontal surgery and continued for 4 to 7 days after surgery. The prophylactic use of antibiotics in patients who are otherwise healthy has been advocated for bone-grafting procedures enhance the chances of new attachment. In the presence of a complex wound, such as GBR or sinus augmentation, a pre-operative dose of amoxicillin or clindamycin in penicillin-allergic patients may be given 60 minutes prior to incision. If the procedure is to last more than 3 hours, an additional dose may be given.

Use of NSAIDS
Study demonstrated that dosing with 600 mg Ibuprofen either immediately before periodontal surgery or immediately after periodontal surgery significantly delays the onset of pain as compared to placebo and that the onset of pain is delayed for a greater period of time when dosing immediately postsurgically as compared to dosing presurgically. Dosing immediately postsurgically significantly decreases pain intensity for a combined 8-hour period following periodontal surgery as compared to placebo. This study illustrates a significant increase in intraoperative bleeding during periodontal surgery in patients with preadministered ibuprofen. Increase in bleeding time was noted but within normal limits, and all the patients reported lesser pain and more comfort when ibuprofen was taken prior to surgery.Beneficial effects of ibuprofen, including being a good anti-inflammatory and analgesic, decreased alveolar bone resorption, and enhanced healing, outweigh its adverse effect of minimal increase in bleeding during periodontal surgery.Considering the favorable and undesirable effects of ibuprofen, the authors conclude that temporary discontinuation of ibuprofen prior to periodontal surgery is not mandatory. Further studies are required to know whether it would be appropriate to discontinue the drug compromising its favorable effects in different types of periodontal surgeries

0.12% Chlorhexidine gluconate
Antimicrobial mouthrinse such as 0.12% chlorhexidine gluconate (e.g., Peridex or PerioGard)is used to reduce the microbial load.

SEDATION
The most reliable means of providing painless surgery is effective administration of local anesthesia.Patients who are apprehensive may require treatment under mild or moderate sedation. Routes of administration for sedation agents include

- Inhalation
- Oral
- Intramuscular
- Intravenous

Oral Sedation

Oral sedation can help reduce anesthetic failures and decrease anxiety in a large percentage of dental patients. Oral premedication is cost-effective, has few complications, and requires minimal monitoring when correct doses are used. Although there are a large number of oral sedative agents available by prescription, dental literature have concentrated on the use of

- Zaleplon
- Diazepam,
- Triazolam,
- Lorazepam.

Zaleplon is a short-acting hypnotic in the pyrazolopyrimidine class. Its onset of action is usually within 30 minutes, and it is rapidly eliminated, with a half-life of approximately 1 hour. **Triazolam** and **lorazepam** are benzodiazepines, and the main difference is the effective time of sedation.

Comparison of Zaleplon, Triazolam, and Lorazepam

Characteristic	Zaleplon	Triazolam	Lorazepam
Available dosages	5- and 10-mg capsules	0.125- and 0.25-mg tablets	0.5-, 1-, and 2-mg tablets
Onset of hypnotic effect	15–30 min	30 min	30–60 min
Peak plasma concentration	1 hr	<2 hr	1–6 hr
Duration of action	1 hr	2–4 hr	4–8 hr
Mean half-life	1 hr	2–5 hours	12–16 hr

Inhalation Sedation

In 1844, Dr. Horace Wells of Hartford, Connecticut, was the first to recognize and introduce the use of N2O as an analgesic-sedative agent for performing dental surgical procedures. Advantages of N2O are **rapid onset of action** and **rapid recovery.**There are few contraindications (e.g., chronic obstructive pulmonary disease, severe emotional disturbance, early pregnancy). N2O/O2 inhalation sedation is divided into **three phases**. The technique begins with an induction phase, which leads to a treatment phase and ends with a recovery phase.

Induction Phase

1. A flow rate of 100% oxygen is started, and a nasal hood is placed on the patient and adjusted. The correct flow rate is established while the patient is breathing 100% oxygen. The N2O flow is started, usually at 20%, and titrated in 10% increments every 60 seconds until the patient states that he or she feels relaxed and displays the signs of relaxation.

Treatment Phase

After the ideal level of sedation is achieved, local anesthetic can be given and the dental procedure can be started. The flow of N2O can be reduced when the patient is comfortable with the procedure or increased if more local anesthetic is required (and the patient has not been given any other sedative).

Recovery Phase

When the patient no longer requires sedation, the N2O flow is terminated and the patient is given 100% oxygen for 5 minutes or until he or she is recovered from the sedation. The patient can leave the office unescorted if he or she is completely recovered from the sedative effects of the N2O.

Intravenous Sedation

An initial test dose of 0.2 mg is given, and then midazolam is titrated at a rate of 0.5 mg per minute until the desired level of sedation is achieved. The effective loading dose (ELD) is defined as the dose required to reach the level of moderate sedation. Additional intravenous midazolam can be administered as needed during the surgical procedure up to a maximum dose of 10 mg.

Intravenous Midazolam and Diazepam

Characteristic	Midazolam	Diazepam
Average dose, periodontal patients[63]	3.3 mg	12.1 mg
Average dose, dental patients[47,71]	2.5–7.6 mg	10 mg
Maximum dose	10 mg	20 mg
Duration of action	20–45 min	30–60 min
Half-life	1.7-2.4 hr	31.3 hr
Active metabolites	No	Yes
Anterograde amnesia	Good	Fair
Ease of titration	Good	Very good
Recovery	Abrupt	Slow/smoother
Phlebitis potential	Minimal/water soluble	High/not water soluble

PREMEDICATION IN SYSTEMICALLY COMPROMISED PATIENTS

Infective Endocarditis

Infective endocarditis (IE) is a disease in which microorganisms colonize damaged endocardium or heart valves. The organisms most often encountered in IE are α-hemolytic streptococci (e.g., Streptococcus viridans). The updated American Heart Association (AHA) guidelines on the prevention of infective endocarditis (IE) were published in a 2008 report. The guidelines recommend that prophylaxis should be provided only for cardiac conditions with the highest risk of adverse outcomes from IE

BOX 37-1 Cardiac Conditions Associated with the Highest Risk of Adverse Outcome from Endocarditis for Which Prophylaxis with Dental Procedures Is Recommended*

Previous history of infective endocarditis
Prosthetic cardiac valves or prosthetic material used for cardiac valve repair
Congenital heart disease (CHD), with the following conditions:
- Unrepaired cyanotic CHD, including palliative shunts and conduits
- Completely repaired congenital heart defect with prosthetic material or device, whether placed by surgery or by catheter intervention, during the first 6 months after the procedure
- Repaired CHD with residual defects at the site or adjacent to the site of a prosthetic patch or prosthetic device (which inhibit endothelialization)

Cardiac transplantation recipients who develop cardiac valvulopathy

*Recommendations by the American Heart Association.[33]

Recommended Antibiotic Prophylaxis Regimens for Periodontal Procedures in Adults at Risk for Infective Endocarditis

Regimen	Antibiotic	Dosage[a]
Standard oral regimen	Amoxicillin	2.0 g 30–60 min before procedure
Alternate regimen for patients allergic to amoxicillin or penicillin	Clindamycin	600 mg 30–60 min before procedure
	Azithromycin or clarithromycin	500 mg 30–60 min before procedure
	or	
	Cephalexin or cefadroxil[b]	2.0 g 30–60 min before procedure
Regimen for patients unable to take oral medications	Ampicillin	2.0 g intramuscularly or intravenously within 30 min before procedure
Regimen for patients unable to take oral medications and allergic to penicillin	Clindamycin	600 mg intravenously within 30 min before procedure (must be diluted and injected slowly)
	or	
	Cefazolin[b]	1.0 g intramuscularly or intravenously within 30 min before procedure

[a]Adult dosages are listed. Children's dosages are lower.
[b]Cephalosporins should not be used in patients with immediate-type hypersensitivity reactions to penicillins (e.g., urticaria, angioedema, anaphylaxis).

Preventive measures to reduce the risk of IE consist of the following:

- Define the susceptible patient.
- Provide oral hygiene instruction.
- Recommended antibiotic prophylactic regimens should be practiced with all high-risk patients during periodontal treatment
- Periodontal treatment should be designed for susceptible patients to accommodate their degree of periodontal involvement.

The following guidelines can aid in the development of periodontal treatment plans for patients susceptible to IE:

For patients at risk for IE, effort should be made to eliminate the infection. Teeth with less severe involvement in a motivated patient should be retained, treated, and maintained closely. All periodontal treatment procedures (including probing) require antibiotic prophylaxis; gentle oral hygiene methods are excluded. Pretreatment chlorhexidine rinses are recommended before all procedures, including periodontal probing. Allow at least 7 days between appointments (preferably 10 to 14 days). If not possible, select an alternative antibiotic regimen for appointments within a 7-day period. Evidence does not support a need to place patients at risk for IE on extended antibiotic regimens after treatment. Patients who have had periodontal surgery are not usually placed on antibiotics for the first week of healing unless there are specific indications to do so. If patients are placed on these regimens, the dosages are inadequate to prevent endocarditis during ensuing appointments. The standard prophylactic antibiotic dose is still needed. Regular recall appointments, with an emphasis on oral hygiene reinforcement and maintenance of periodontal health, are extremely important for patients susceptible to IE.

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