

Important notes on antibiotics:-

Antibiotics are chemicals virtually always derived naturally with the exception of sulfonamides, fluoroquinolones and oxazolidinones. These drugs act on the microorganisms to effect their viability hence they can be either bactericidal (inducing cell death) or bacteriostatic (preventing cell growth or replication) .

Antibiotics with activity against a wide range of disease-causing bacteria are termed as broad-spectrum antibiotics. It also means that it acts against both Gram-positive and Gram-negative bacteria. This is in contrast to a narrow-spectrum antibiotic which is effective against only specific families of bacteria .

Of these, tetracyclines and clindamycin are accepted by the Council on Dental therapeutics, American Dental Association. Other antibiotics appropriate for use in Dentistry include penicillin, erythromycin, cephalosporins and bacitracin .

Oral infections are usually caused by aerobic gram-positive cocci (*Staphylococcus aureus*) and anaerobic microorganisms (*Peptostreptococcus*) and the use of antibiotics in dentistry is to either treat these or as a prophylaxis to prevent bacterial endocarditis that is caused by α hemolytic streptococci.

Most acute oral infections respond well to one of the oral penicillin preparations. However Penicillin can cause few adverse side effects, and allergic reactions. A true allergic reaction usually manifests as an irritating rash. Anaphylactoid reactions though rare, occur in susceptible patients within 30 seconds of an intramuscular injection.

Signs and symptoms of anaphylaxis include oral paresthesia, cold hands and feet, bronchospasm and wheezing, circulatory collapse, and unconsciousness.

Alternatives to penicillin include Erythromycin, Cephalosporins, Clindamycin, and Tetracycline but Cephalosporins should not be used in a person with a history of anaphylaxis, angioedema or urticaria with penicillins or ampicillin.

Erythromycin estolate and Erythromycin ethylsuccinate are contraindicated in the presence of liver dysfunction as they can cause cholestatic hepatitis.

The use of Tetracyclines should be avoided during pregnancy and in children below 8 years because permanent staining of deciduous and permanent teeth and retardation of bone growth may occur.

Other adverse effects include gastrointestinal upset, hepatotoxicity, nephrotoxicity, photosensitivity and impaired calcium absorption.

Similarly, quinolones should be avoided in children, pregnant or nursing women, and in epileptics .

Antibiotic prophylaxis is recommended for dental procedure in patients with prosthetic cardiac valve, previous infective endocarditis, cardiac transplantation recipients who develop cardiac valvulopathy and during the first six months following any procedure to treat congenital heart .

Prophylactic use of antibiotics in conjunction with dental treatment should be avoided unless there is a clear indication since unwarranted overuse of antibiotics can lead to development of resistant strains of microorganisms .