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REPUBLIC OF MACEDONIA

ANTIBIOTIC TREATMENT IN CHILD DENTISTRY



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Introduction: A children is not a men in small version, but an organism in the phase of intense growing and differentiation. The child has series of differential characteristics and this facilitate faster diffusion of infection: the greater proportion of water in the tissues, and their increased bone sponginess.

Microbiology of odontogenic infections: Odontogenic infections usually are cause of the oral bacteria. The present microbiology is characteristically mixed, with multiple organisms, anaerobic and aerobic bacteria, with different characteristics. The main aerobic bacteria are streptococci, but the anaerobic bacteria show greater variety of species. Two main groups, however, dominate, gram-positive cocci (Streptococci and Peptostreptococcus) and gram-negative rods (Bacteroides and Fusobacterium).

Odontogenic infections in children: Acute odontogenic orofacial infections usually are self-limiting, and may drain spontaneously. A child with a facial swelling or facial cellulitis should receive prompt dental attention and emergency treatment.

Pediatric patients with aggressive periodontal diseases may require antimicrobial therapy in conjunction with local treatment, if is present signs of systemic involvement (fever, asymmetry, facial swelling, regional lymphadenitis), with the use of mechanical debridement.

Use of antibiotics should be given in cases of nonodontogenic bacterial infections such as staphylococcal mucositis and facial skin infection. Antibiotic therapy is recommended in status of chronic recurrent juvenile parotitis, generally occurs prior to puberty. For acute submandibular sialadenitis, antibiotic therapy is included as part of the treatment.

Selection of an antibiotic: The orally administered antibiotics are effective against odontogenic infections include: Phenoxymethylpenicillin (penicillin V) is the penicillin of choice for odontogenic infections. It is bactericidal and although its spectrum is relatively narrow, it is appropriate for the treatment of odontogenic infections. *Amoxicillin* is the first choice antibiotic, especially amoxicillin-clavulonate. An alternative antibiotic for use in penicillin-allergic patient is *clindamycin*, who is also clinically with the usual recommended doses bactericidal. The newer macrolides: *clarithromycin* and *azithromycin* may also be used if the child is allergic to penicillin. The cephalosporin *cefadroxil* may be a useful drug when a large antibacterial spectrum is necessary. *Metronidazole* is useful only against anaerobic bacteria and additional fungal infection, and should be reserved for situations in which only anaerobic bacteria are suspected.

As a prophylaxis against infection: Antibiotics are indicated when the primary barrier is corrupted of trauma, (skin, mucosa), but in cases with significant soft-tissue or dentoalveolar injuries and have an increased risk of infection. Patients with facial lacerations, open fractures, should be covered with antibiotics and additional topical antibiotic agents. Antibiotic coverage should also be given when an avulsed tooth is replanted, since the use of systemic antibiotics may decrease the incidence of external root resorption. The use of antibiotics may be justified after extraction of many teeth under general anesthesia, with possible of transitory bacteriemia, because single tooth extraction results in bacteriemia in 40 to 50% of the children. Contrary to healthy children, factors related to host risk: systemic illness, malnutrition and immunosuppressed patients must be evaluated when determining the risk for infection, and need antibiotics even if infection is only suspected. Antibiotic coverage is required in patients with reduced neutrophil counts, children undergoing chemotherapeutic treatment, children who have deficiency in humoral or T-cell mediated immunity, children who receive immunosuppressive medication, or an autoimmune disease, children infected with the human immunodeficiency virus (HIV) and AIDS, children with diabetes (especially the insulin-dependent type), children with cardiovascular diseases, or hematology diseases, congenital neutropenia, leukocyte deficiency. Therefore antibiotic coverage is recommended for invasive dental procedures when their condition is poorly controlled or uncontrolled. For the prophylaxis against the endocarditis and associated rheumatoid diseases, every procedures with suspect bacteriemia, must be covered with antibiotic treatment.

Conclusion: To avoid the growing problem of drug resistance, the clinician should consider adequate completion of a full course of antibiotic therapy. Our reason is: do not duplicate optimal dozes, especially in the bone, but do elongated the time of antibiotic treatment, minimum 7 days, and maximum 14 day.