УДК [579.61:616.31]:616.716.1/.4-002.3

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MANAGEMENT OF ODONTOGENIC INFECTIONS AND SEPSIS

Introduction

Odontogenic sepsis is a severe, potentially life-threatening infection originating from dental or periodontal sources. It typically results from bacterial invasion secondary to untreated dental caries, pulpitis, periodontal diseases, or post-procedural complications. This condition caused by body's immune system responding in abnormal way. This can lead to tissue damage, organ failure and death. A patient with non-odontogenic related infection could also present with sepsis at a dental practice. The morbidity and mortality rate of odontogenic infections dropped significantly over the past 70 years. This dramatic drop is undoubtedly linked to the discovery of antibiotics, The improvement of the general population health standards, and a better understanding of appropriate medical and surgical management of these cases. The infection is primarily caused by polymicrobial flora,including : Anaerobes: Fusobacterium, Prevotella, Porphyromonas Facultative anaerobes: Streptococcus viridans, Staphylococcus. Bacteria from infected dental tissues or periapical areas invade surrounding soft tissues, leading to cellulitis or abscess formation. If not treated the infection can spread to facial spaces (buccal,submanidibular), deep neck spaces,thoracic cavity (mediastinitis), systemic circulation (bacteremia,septic shock).

Goal

The purpose of this study was to provide a characterisation of the incidence and management measures of odontogenic infections and sepsis.

Material and methods of research

The generalization and analysis of the scientific article (WHO, NCBI, NICE, Europe PMC) on this topic.

The results of the research and their discussion

In this study, 10 scientific articles were studied. Odontogenic infecions pass through 3 key stages. Stage 1 – 1-3 days; softand mildly tender swelling stage 2 – 2-5 days; hard, red and severely sore swelling stage 3; 5-7 days; abcess formation. Seven principles have been proposed to achieve the best outcome in managing odontogenic infections:

1. Esablish the severity of the infection;
2. Asses host defences;
3. Elect the setting of care;
4. Surgical intervention;
5. Medical support;
6. Antibiotic therapy;
7. Frequently evaluate the patient.

In healthy and systemically well patients without trismus, infections of low-risk spaces can be initially treated in a primary care dental practice, while infections spreading to higher risk spaces should be managed more aggressively and may need to be treated in a secondary care center. Clinical features can be local: facial swelling, erythema, pain, pusdischarge,

toothmobility, trismus, Systemic: fever, malaise, tachycardia, hypotension (in sepsis). Severe cases: dysphagia, respiratory distress, altered mental status. Diagnosis are clinical examination, imaging: orthopantomogram, CT scan, blood tests: CBC, CRP, blood cultures if systemic signs present. As treatments early airway assessment, prompot source control (drainage/ extraction), appropriate empiric antibiotics and sepsis care when systemic involvement is present. Airway compromise signs: rapidly progressive swelling severe trismus, dysphagia, systemic toxicity esc. Ludwig's angina: urgent surgical drainage multiple drains, frequent irrigation. Performe source control within 6–12 hours from diagnosis in sepsis. In antibiotic therapy first line Amoxicillin-clavulanate 875/125 mg or Amoxicillin 500 mg + Metronidazole 500 mg. Penicillin allergy (anaphylaxis): Clindamycin 300 mg. Alternatives: Cefuroxime 500 mg + Metronidazole 500 mg.

Conclusion

Odontogenic infections can lead to sepsis, which can result in tissue damage, organ failure and death. Annually there are approximately six million deaths from sepsis worldwide. A careful history and through clinical examinations are essential to determine the serverity of any infection. History taking will highlight factors like immune system competence and the level of systemic reserves to fight infections. A physical examination can identify clinical observations outside normal limits. Odontogenic infections with fulminant progression should be treated based on clinical and imaging data with immediate surgical incision and drainage including elimination of odontogenic foci as well as intensified intra- and postoperative irrigation. If needed, repeat imaging followed by further incisions should be performed. Immediate antibiotic treatment adapted to the antibiogram is of utmost importance.

LITERATURE

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УДК 616.936(540)

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PREVALANCE OF MALARIA IN INDIA

Introduction

Anopheles mosquitoes are the primary vectors of malaria, which is mostly caused by Plasmodium falciparum and Plasmodium vivax. The prevalence of malaria in India has fluctuated dramatically over the years, reaching a high death rate of 75 million cases in the 1950s before sharply declining as a result of control efforts. However, there have been sporadic