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DENTAL CARIES : A REVIEW OF CURRENT CONCEPTS

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ABSTRACT

Dental caries is considered to be the oldest oral disease that presents significant financial and public health problems, as indicated by historical accounts. Dental caries is a simple process in concept, but complicated in detail. The changes in the homeostasis of the oral cavity with an overgrowth of *Streptococcus mutans* is recognized as the primary cause of the disease. Most treatments are now aimed at either elimination of this bacterium or suppression of its virulence.

INTRODUCTION

Definition

Dental caries is a complex disease that afflicts a large proportion of the world population, regardless of gender, age and ethnicity, but tends to affect those with a low socioeconomic status to a greater extent ⁽¹⁾. It is a bacterially-based disease, where acid produced by bacterial action on dietary fermentable carbohydrates diffuses into the tooth and dissolves the carbonated hydroxyapatite mineral via a process known as demineralization ⁽²⁾.

Etiology

The traditional model of caries is that decay is a one-way process of acidic demineralization of a susceptible tooth surface. The process is initiated

by a combination of plaque deposition and frequent consumption of refined carbohydrates. While the current concept considers caries as a dynamic and reversible process. In this concept, caries activity is considered to be a result of the interplay of a number of etiologic factors. Some of these factors cause demineralization, while others promote remineralization of the tooth. Demineralization occurs several times a day following each period of fermentable food consumption. Usually demineralization is limited and quickly reversed by the effect of fluoride and the buffering and repair actions of saliva. Where this does not occur, progressive demineralization causes porosities to develop in enamel, forming the 'sub-surface' incipient or early lesion. If the demineralization process continues, cavitations will eventually

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