Individualized caries risk assessment and management: A change in paradigm for dealing with dental caries in young children

Advancements in the awareness of dental caries and the introduction of innovative techniques have led to the evolution of a new approach or paradigm. The management of dental caries with usual restorative treatments alone is inadequate, especially in large and developing nations like India, where we have a shortage of free access to dental facilities and an adequate workforce. Not all patients can easily afford dental expenditure, thus putting financial strains on patients. Henceforth, there is a dire need for dentistry to shift from the usual worn-out dental care, where the aim is treating the disease outcome, to a prevention-oriented form of care, where child-centered management strategies are implemented for the prevention and arrest of dental caries.[1]

We are aware of the fact that dental caries is prevalent globally. It is an infectious microbial disease caused by particular bacteria present in the oral cavity and is a multifactorial reversible process before it turns into frank cavitation. In addition, two traits, caries activity and caries risk, give us an idea of the prognosis demanding a complex treatment plan. At the individual patient level, we can effectively "control" the physiologic balance of the intraoral environment with topical fluorides, dietary monitoring, "plaque control," etc., but some patients seek much more and "closer" monitoring than others to avoid the occurrence of newer carious lesions. It is because caries risk varies from person to person, also, dental caries management can be difficult and more demanding for patients with complex pathologic caries risk factors.[2]

Caries risk is the possibility of a person developing new caries lesions, whether noncavitated or active in the near future. Caries risk assessment (CRA) should be an integral component of a suitable treatment plan in young children so that a successful outcome for caries management can be achieved as they grow into adults.[3] Dental caries treatment based on the patient's risk can be considered a crucial step in achieving improved results in oral health. With the help of a pediatric patient's baseline CRA, we can easily anticipate the development of dental caries in the near future and can instill better treatment and monitoring strategies to promote favorable oral health end results.[4] The CRA tools are based on personal risk assessment since each individual has their own unique pathologic and protective factors. The etiologic and protective factors are evaluated at an individual level and, the risk for future disease is established, followed by a patient-centric caries management plan.[2] Based on the published literature, four recognized CRA tools that are available are CAMBRA, Cariogram, the American Dental Association, and the American Academy of Pediatric Dentistry CRAs. Frequently used CRA tools are the CAMBRA and Cariogram. Many authors have studied their clinical efficiency on a mass level globally.[5] Depending on the stage of the carious lesion, we can incorporate strategies that will control the transmission of cariogenic microflora and infection, remineralization of the incipient carious lesions, and efficiently treat the advanced stages of cavitation. CAMBRA endorses the remineralization of early precavitated lesions by chemical agents and the use of pit and fissure sealants, for occlusal noncavitated surfaces, along with minimally invasive restorative techniques as and when required.[6] Since these CRA tools are based on clinical trials and successes, patient preferences, and requirements, enforcement of these innovative protocols will provide better patient care with maximum tooth protection.[3]

Because of its complex nature, we never prevent dental caries either in a patient or at a community level. However, with CRA tools such as CAMBRA, we can evaluate every patient according to their disease markers, risk factors, and protective factors for existing and imminent caries in life ahead and plan successfully.

Amina Sultan
Professor and Incharge, Department of Pediatric and Preventive Dentistry, Faculty of Dentistry, Jamia Millia Islamia, New Delhi, India.
E-mail: asultan@jmi.ac.in

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