

**Minimal Invasive Dentistry: Benefits and Challenges****Anuradha P, Ranjana Yadav<sup>1</sup>**

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**ABSTRACT:**

When first introduced the term minimal intervention dentistry referred to the use of smaller and more conservative cavity preparations. Today the concept is much broader, nowadays treatment philosophy is more patient centred approach mid should be the standard of care in modern restorative dentistry, as it avoids over- zealous restorative interventions as well as supervised neglect.

**Keywords:** Advantage, Air abrasion, Conservative, Risk assessment, Technologies.

**INTRODUCTION**

Basically, MID for dental caries can be divided into two main areas the first being Caries Risk Assessment (CRA), which focuses on disease causing factors and other component is restorative which focuses on conserving and preserving tooth structure, in order to minimize the irreversible consequences of caries in terms of breakdown of tooth structure.<sup>1</sup> As early we are able to detect caries as much we can restore and preserve through a minimalist approach in all the restorative phases. Processes aiming to detect carious lesions in the initial stage with optimum sensitivity and specificity employ a variety of technologies, such as a caries detector dye, CaMBRA risk assessment tool, plaques and saliva test, with loupes, laser fluorescence and auto fluorescence, electric current/ impedance, tomography imaging, and image processing.<sup>2</sup> As it is an important step of the MID clinicians should give enough time for complete assessment.

Patients come to a dental clinic in expectation of some work i.e. drilling, cleaning etc. being performed in their mouth, hence a dentist should be able to prevent and explain the idea to present and explain the idea of caries risk assessment as it is an important step of the procedure it should be given sufficient time.<sup>3</sup>

Rather than using a separate appointment, some steps of the risk assessment can be done in same appointments given for restorations or prophylaxis.

There is much advancement and researches nowadays in area of minimally invasive dentistry but still it could not become very popular in most of private practioners because of cost- effectiveness, attitude of patients and technique sensitive tools. There are revolutionary advance technologies and tools are present for detecting caries at early stage but these various kinds of means are technique sensitive so decisions from these tools may vary from clinician to clinician. Before air abrasion had many disadvantages due to lack of advanced technologies such as it was not able to prepare cavities with well defined walls, absence of high suction, inadequate evacuation. But in nowadays it is being used for early caries detection. It is also showing better enamel bonding.<sup>4</sup> Preparation that extends into dentin also can be done without the use of local anaesthesia. It also causes less anxiousness in the patients due to least sound and vibrations.<sup>5</sup> Air abrasions are not suitable for conventional cavity preparations for amalgam, gold restorations or composite inlays or porcelain inlays because it produces round cavosurface margins. Air abrasion does

not cut soft and resilient substances so it may lacerate soft tissues exposed in gross cavities.

Abrasive particles which are used are aluminium oxide which may cause respiratory problems sometimes hence it makes use of rubber dam compulsory in patients with respiratory diseases.

Adhesive dental materials make it possible to conserve tooth structure using minimally invasive cavity preparation because these materials do not require the incorporation of mechanical retention features. The advantage of GICs includes adhesion to tooth and release of fluoride and other ions. On other hand its brittle property demise using it alone. Combination of resin based composites and GICs called as lamination or sandwich technique takes advantage of physical properties of both.

#### CONCLUSION

Since our permanent restorations often lead to dislodgment, tooth fracture, endodontic treatment and crown and occasionally extraction of the tooth we should change our treatment approach to minimal invasive dentistry. Dental caries needs to be viewed as a bacterial disease which can be reversed before occurring or at a very early stage by caries risk assessment, diet counselling, remineralizing the demineralised tooth. And when caries process cannot be interrupted minimally invasive techniques, tools and materials should be used. Despite some

obstacles i.e., technique sensitivity, expense related and patient's psychology and attitude conventional dentistry can be change to the minimal invasive dentistry by consistent practice and knowledge of minimal invasive dentistry among practioners so that they can counsel their patients too and can play a good role of dental physician as well as a good dental surgeon.

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