

CAMBRA Caries Management by Risk Assessment – is a Current Concept in Carious Prevention Cases Studies

Dr. Tahani Rashad Jamal*

Consultant in ARD, Umm All Qura University Makkah.

*Correspondence:

Tahani Rashad Jamal, Consultant in ARD, Umm All Qura University Makkah, ID:4200049, Tel: 0555526115.

Received: 14 November 2021; Accepted: 10 December 2021

Citation: Jamal TR. CAMBRA Caries Management by Risk Assessment – is a Current Concept in Carious Prevention Cases Studies. Oral Health Dental Sci. 2021; 5(4); 1-5.

Introduction

Everything you do to the tooth has consequence; short term or long, its cascade of events determines the survival of the tooth.

Operative dentistry not only requires technical expertise and an in-depth understanding of materials science, but knowledge in cariology and pulp biology is also essential.

Treatment Goals

Eliminate Disease, Restore Occlusion, Esthetics and Function

Treatment Designed to Decrease Long Term Risk and Treatment with Dental Materials that have Proven Long Term Survival.

Build Your Practice in Powerful Way: You Are not Just A Dentist. You Are A D M D. A Doctor of Medicine in Dentistry.

Dental caries is a biofilm-mediated, diet modulated, multifactorial, non-communicable dynamic disease resulting in net mineral loss of dental hard tissues It is determined by biological, behavioral, psychosocial, and environmental factors.

As a consequence of this process a caries lesion develops. The Contemporary view of Management of the caries disease:

Prevent disease.

Treat disease separated from function.

Restore full function after treating disease.

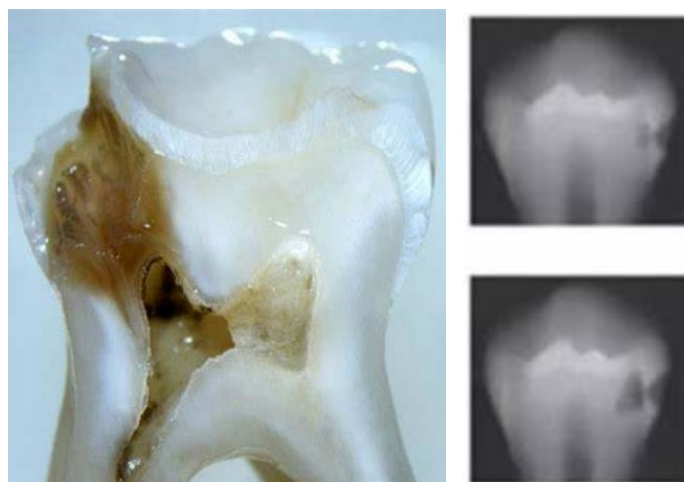
Create basis for long-lasting function.

Reduce risk for setbacks during or after treatment

Maintain as comfortable patient experience as possible throughout entire treatment.

Secure patient compliance Maintain cost-effectiveness

Dental caries is a common, but preventable disease (World Health Organization 2017).



Detection-diagnosis-decision making, Sound or diseased, Degree(severity)of disease, Initial D1,D2,D3 and Treatment.

Factors to take into consideration when deciding upon treatment: Caries activity, Future caries risk, Cavity formation, Progression rate, Expected cooperation and possibilities for follow-up.

Treatment of deep caries lesions approaching a healthy pulp presents a significant challenge to the practitioner the traditional management of carious lesions of any kind dictates the removal of all infected and affected dentin to prevent further cariogenic activity and provide a well mineralized base of dentin for restoration.

The primary outcome

Overall success of maintaining pulpal health (both clinically and radiographically) An important priority in the treatment of deep caries lesions is to preserve pulp vitality.

The goal of this study is to clarify the Contemporary operative caries management by consensus recommendations on minimally invasive caries removal.

CAMBRA PROTOCOL is an evidence-based approach to preventing and managing cavities at the earliest stages. The risk of nonselective removal of carious tissue in comparison with selective removal and stepwise. Stop the disease process and maximizing the healing potential of the teeth according to systematically review & meta-analysis.

Current Concepts in Carious Tissue Removal Which technique should be used?

Current concept: Dental caries is a biofilm-based and lifestyle-mediated disorder.

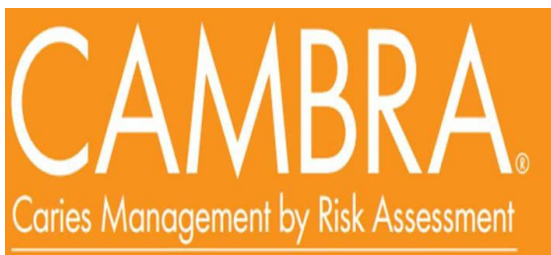
Dentists should not attempt to “heal” carious teeth by removing bacteria and should not manage carious lesions by invasively removing all presumably infected (contaminated) dental hard tissues.

The aim is to control the composition and activity of the dental biofilm within the cavity.



The activity at the tooth surface can be controlled through regular biofilm removal (tooth brushing) supported by dietary sugar regulation.

The importance of managing the cause of the disease at a patient level and managing the carious lesion at the tooth level, cannot be overemphasized and must be part of the overall treatment plan.



The most Common reason for treatment failure is not the quality of the treatment, it is the Incorrect Diagnosis.

The philosophy of Caries Management by Risk Assessment, or CAMBRA®, represents a paradigm shift. Integrating Caries Management by Risk Assessment (CAMBRA) and Prevention Strategies into the Contemporary Dental Practice.

In many dental practices throughout the world, the CAMBRA philosophy has been completely incorporated into the practice routine and embodied by the entire patient care team, including dental assistants and hygienists.

This guide was originally published in the January 2019 issue of the Journal of the California Dental Association.

CAMBRA protocols facilitate integration of caries management by risk assessment into everyday practice.

The CAMBRA concept provides the dental professional with scientific, evidence-based solutions to approach treatment of dental caries disease. Understanding of the caries balance, the process of demineralization and remineralization of tooth structure, caries risk assessment, and the different levels of caries risk.

CAMBRA Treatment Recommendations Based on Risk Assessment Level

Low Risk	Moderate Risk	High Risk	Extreme Risk
<ul style="list-style-type: none">OTC toothpaste with fluoride (1,000 to 1,100 ppm fluoride), 2x daily	<ul style="list-style-type: none">OTC toothpaste with fluoride (1,000 to 1,100 ppm fluoride), 2x dailyOTC fluoride rinse (0.05% NaF), dailyXylitol candies or gums, 4x dailyAlternative regimen: Xylitol candies or gums, 4x daily Plus: Prescription 5,000 ppm fluoride toothpaste, 2x daily	<ul style="list-style-type: none">Xylitol candies or gums, 4x dailyPrescription 5,000 ppm fluoride toothpaste, 2x dailyChlorhexidine gluconate (0.12%) rinse 1x daily for 1 week, every month until the next POE, then reassessFluoride varnish applied at first visit and at each POE/CAMBRA recall	<ul style="list-style-type: none">Xylitol candies or gums, 4x dailyPrescription 5,000 ppm fluoride toothpaste, 2x dailyChlorhexidine gluconate (0.12%) rinse 1x daily for 1 week, every month until the next POE, then reassessFluoride varnish applied at first visit and at each POE/CAMBRA recallBaking soda rinse, 2 tsp. in 8 oz. of water, 4x to 6x daily

CAMBRA = Caries Management by Risk Assessment; NaF = sodium fluoride; OTC = over-the-counter; POE = periodic oral examination

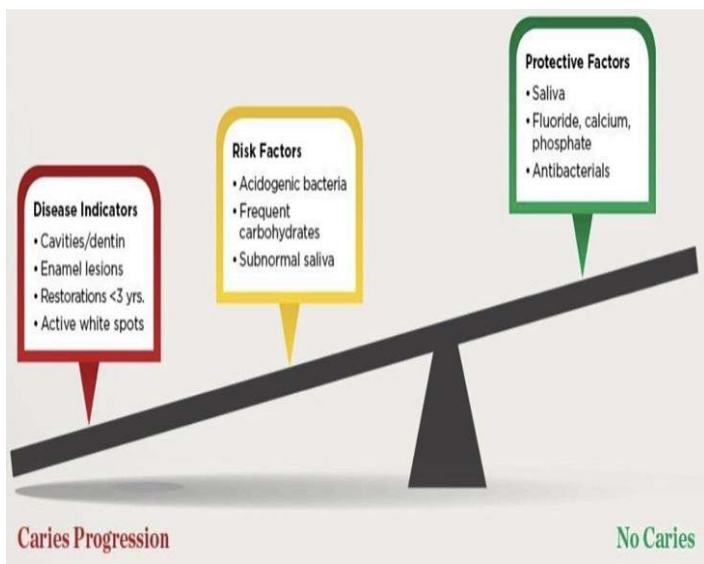
The CAMBRA system has been shown to be highly predictive

Clinical study on application of CAMBRA Protocol in group of students in 6-month follow-up shown is a conservative and evidence-based approach to preventing or treating dental caries at the earliest stages.

Aim of study

It's a Proven method for preventing decay, protecting teeth and developing treatment preventing plans for managing and early on, the cavities Imbalance Caries uses the model “SAFE” to acronym the following describe protective four Saliva and factors: sealants.

Antimicrobials or antibacterial (including xylitol), Fluoride and other products that enhance remineralization and Effective lifestyle habits.



Materials and Methods

Female patients age 18-45 years old, inclusion criteria: Examination & history of complains caries risk assessment is a valuable tool for the prevention and management of dental caries.

50 cases (high caries risk patient) follow up for 6 months implement CAMBRA Protocol: Take a dental and medical history and conduct a clinical exam to assess caries risk factors.

The assessment tool is a part of an overall approach to prevent and treat the caries infection and is composed of the following sections Caries disease indicators – low SES (socioeconomic status); development problems; and presence of cavities, white spots, and restorations placed in the previous 3 years.

Caries risk factors – type and quantity of Mutans streptococci (MS) and lactobacilli (LB); visible plaque; exposed roots; saliva reducing factors and inadequate saliva flow; frequent snacks; deep pits and fissures; and orthodontic appliances.

Caries protective factors – systemic and topical fluoride sources; adequate saliva flow; and regular use of chlorhexidine, xylitol, and calcium and phosphate paste.

Clinical examination – presence of white spots, decalcification, restorations, and plaque; and bacterial culture and saliva flow tests

In corporation with Person-centered care in health care, person-centered care is where the patients actively participate in their own medical treatment in close cooperation with the health professionals. Sometimes relatives are also included in creating the health plan. The person-centered model of health care is used both for in and out patients, emergency care, palliative care as well as in rehabilitation.

Factors	High Risk	Moderate Risk	Low Risk
Biological			
Patient is of low socioeconomic status	Yes		
Patient has >3 between meal sugar-containing snacks or beverages per day	Yes		
Patient has special health care needs		Yes	
Patient is a recent immigrant		Yes	
Protective			
Patient receives optimally-fluoridated drinking water			Yes
Patient brushes teeth daily with fluoridated toothpaste			Yes
Patient receives topical fluoride from health professional			Yes
Additional home measures (e.g., xylitol, MI paste, antimicrobial)			Yes
Patient has dental home/regular dental care			Yes
Clinical Findings			
Patient has ≥ 1 interproximal lesions	Yes		
Patient has active white spot lesions or enamel defects	Yes		
Patient has low salivary flow	Yes		
Patient has defective restorations		Yes	
Patient wearing an intraoral appliance		Yes	

Circling those conditions that apply to a specific patient helps the practitioner and patient/parent understand the factors that contribute to or protect from caries. Risk assessment categorization of low, moderate, or high is based on preponderance of factors for the individual. However, clinical judgment may justify the use of one factor (e.g., ≥ 1 interproximal lesions, low salivary flow) in determining overall risk.

Overall assessment of the dental caries risk: High Moderate Low

carries risk factors, which include acid-producing bacteria, frequent eating/drinking of fermentable carbohydrates, and abnormal saliva flow and function.

Manage caries risk factors by optimizing protective factors using both behavioral approaches and chemical treatments. The treatment plan might include

Remineralization through the use of fluoride and/or antibacterial therapies such as chlorhexidine and xylitol minimally invasive restorative procedures to conserve tooth structure and regular patient follow-up.

Results

91% of high caries risk patients reduced caries risk and give them instructions of moderate and low caries risk patients these findings would imply that by application of CAMBRA® protocol, represents a paradigm shift.

The CAMBRA concept provides a scientific, evidence-based solutions with which to approach treatment of dental caries disease. Products to treat the caries infection.

Fluorides OTC and prescription toothpastes, 0.2% and 0.05% sodium fluoride rinse, CariFree maintenance rinse, 5% sodium

CAMBRA Protocol (Caries Management by Risk Assessment) Patient work sheet

High Caries Risk Patient (Visiting a Dental Clinic For a Periodic Checkup& evaluate the improvement of oral health of the patient)POE (Periodic Oral Examination)			
	ANTIMICROBIAL	PROTECTIVE FACTORS	DIET ANALYSIS &MODIFICATION
1	Chlorhexidine gluconate (0.12%)mouth wash 2x daily for one week ,every month until the next POE	Baking soda rinse,2tsp.in 8 oz of water4xto 6x daily	Reduce sugar and carbohydrates intake, Increase vegetables, reduce snacks between meals, In case of snacks ,safe food are better to eat as nuts ,cheese and vegetables
2	OTC (Over –The- counter) fluoride rinse NaF0.05%)daily don't use it at the same time with Chlorhexidine gluconate mouth wash	Alternative regimen :Xylitol candies or gums,4x daily Xylitol-based product	Increase consumption of drinking water to dilute viscous saliva
3	OTC toothpaste with fluoride(1,000to 1,100 ppm fluoride),2x daily	Brush teeth twice a day and flossing as an adjunct to routine tooth brushing	Avoid consumption of energy and sports drinks

Moderate Caries Risk Patient	Low Caries Risk Patient
OTC toothpaste with fluoride (1000to1,100ppm Fluoride)2xdaily	OTC toothpaste with fluoride (1000to1,100ppm Fluoride)2xdaily
OTC Fluoride rinse (0.05%) daily	POE (Periodic Oral Examination)
Alternative regimen :Xylitol candies or gums,4x daily	

fluoride varnish, Sealants resin-based or glass ionomer, Saliva tests Caries Risk Test (CRT) bacteria, CRT buffer, Bacteria tests Caries Risk Test (CRT) bacteria, CariScreen Caries Susceptibility Test, XylitolEpic, Spry, Omni Theragum, Ice Breakers Cubes, Buffering products – sodium bicarbonate toothpastes, mouthwash and gum, CariFree boost breath spray, Chlorhexidine gluconate – Peridex, Periogard, Palliative products for xerostomia – Salivart, Optimoist and Probiotics.

This study represents the current understanding of the caries balance, the process of demineralization and remineralization of tooth structure, caries risk assessment, and the different levels of caries risk. Adequate treatment protocols specifically related to the remineralization of non-cavitated lesions.

This study supports the implementation of the current caries risk assessment and management protocol (CAMBRA). It details the current risk factors, techniques and devices for assessing them and, interventions that should be considered in order to address the risk. Study shown that one CAMBRA treatment can reverse many roots caries lesions, cavities on the root surface of teeth, usually below the gums and which occur more frequently in patients.

Conclusion

Modern dental care focus on patients as a whole rather than just their teeth. CAMBRA caries management by risk assessment – is a Current Concept in Carious Tissue Management.

We Practice at the belief level. We are A D M D. A Doctor of Medicine in Dentistry.

Preventing carious lesions means managing the disease, the caries process with inputs from both the oral healthcare team and the patient. For existing lesions, dentists, alongside and leading their oral healthcare teams, should work with the patient to manage oral health and as a consequence to control disease activity.

CAMBRA protocol Proven method for preventing decay, protecting teeth

A research-based strategy for assessing risk factors and developing treatment plans for preventing and managing cavities early on Minimally invasive, evidence-based processes of care have been identified as key strategies to prevent disease life-long and include the following aspects: Assessment; Determination of Risk; and Formation of Treatment/Prevention Strategies.

Risk assessment and disease management are considered standard of care, and therefore an ethical and legal requirement for today's dental providers. The CAMBRA approach is a scientifically proven, evidence-based approach to the assessment, prevention, and treatment of dental caries that is patient specific it is a Current Concept in Carious Tissue Management.

References

1. Featherstone J.D, Adair S.M, Anderson M.H, et al. Caries management by risk assessment: consensus statement, April 2002. Journal of the California Dental Association. 2003; 31: 257-269.
2. Ramos-Gomez F.J, Crall J, Gansky S.A, et al. Caries risk assessment appropriate for the age 1 visit (infants and toddlers). Journal of the California Dental Association. 2007; 35: 687-702.
3. Kidd EAM. How clean must cavity be before Restoration? Caries Research. 2004; 38: 305-313.
4. Loesche WJ. Clinical and microbiological aspects of chemotherapeutic agents used according to the specific plaque hypothesis. J Dent Res. 1979; 58: 2404-2412.
5. Gutkowski S, Gerger D, Creasey J, et al. The role of dental hygienists, assistants, and office staff in CAMBRA. Journal of the California Dental Association. 2007; 35: 786-793.
6. Featherstone J.D. Caries prevention and reversal based on the caries balance. Pediatric Dentistry. 2006; 28: 128-132.
7. Featherstone J.D.B. Delivery challenges for fluoride, chlorhexidine, and xylitol. BMC Oral Health. 2006; 6: S8.