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1.Harold Jan R. Terano

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SELECTING MINIMALLY INVASIVE TREATMENT FOR ROOT CARIES IN OLDER ADULTS WITH MEDICATION INDUCED HYPOSALIVATION

Odiljonova Muqimaoy Savlatovna
Assistant, Department of Dentistry, ZARMED University, Uzbekistan
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Introduction

Root caries management in an older adult with reduced salivary flow requires a decision about the lesion and a practical plan for continuing care. The presence of a cavity alone does not describe whether the surface can be cleaned, whether the lesion remains active, or whether the tooth has pulpal complications. These distinctions determine the role of nonrestorative treatment and the need for restoration.

The objective is to examine the contribution of fluoride intensity to tissue-preserving care and to define when additional intervention is justified. The analysis connects published treatment outcomes with the practical limitations of daily care in older adults exposed to medications that reduce salivary flow.

Materials and methods

A targeted narrative synthesis considered nonrestorative guidance, a systematic review of root caries interventions, information on silver diamine fluoride, and restorative guidance [1–4]. Published mean active-lesion counts from an eight-month randomized trial were extracted at baseline and follow-up [5]. Absolute within-group changes were calculated by subtraction. These descriptive comparisons were interpreted together with lesion accessibility and feasibility of assisted care; no pooled effect estimate was calculated.

Results: fluoride intensity and lesion activity

In the trial by Ekstrand et al., 176 nursing-home residents were randomized and 125 completed follow-up. Staff brushed participants' teeth twice daily. Mean active root caries counts changed from 2.61 to 1.05 in the 5000 ppm group and from 2.67 to 2.55 in the 1450 ppm group [5]. These correspond to decreases of 1.56 and 0.12 lesions per participant. Figure 1 displays the published means at the two assessments. The difference between these descriptive changes is 1.44 lesions; it is not a covariate-adjusted treatment effect.

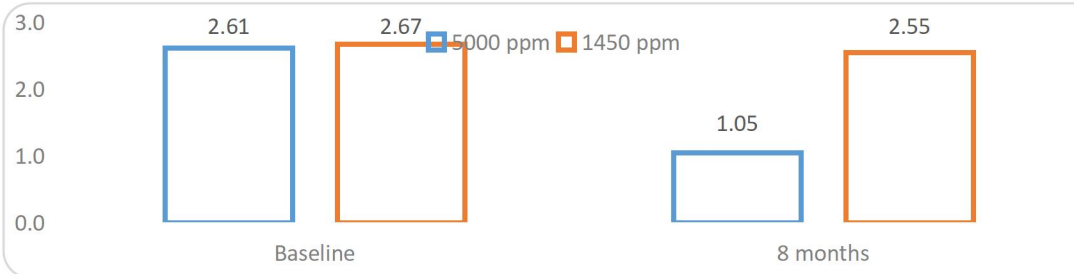


Figure 1. Mean active root caries lesions per participant at baseline and eight months with 5000 ppm and 1450 ppm fluoride toothpaste. Data: Ekstrand et al. [5].

The ADA nonrestorative guideline includes toothpaste or gel containing 5000 ppm fluoride for root surface lesions [1]. Prescription should be accompanied by instruction and assessment of the patient's ability to use the product safely. In the

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proposed pathway, the clinician asks the patient or caregiver to demonstrate the intended cleaning technique. This makes the daily regimen part of the treatment decision rather than a separate recommendation.

Professional silver diamine fluoride application may be considered according to lesion characteristics, patient preferences, local availability, and the product instructions. The possibility of permanent dark staining of carious tissue should be discussed before treatment; repeat application may be needed to sustain benefit [3]. Clinical reassessment remains necessary because colour change alone does not establish complete disease control.

Restoration is considered when a defect cannot be kept clean, compromises function, or cannot be controlled adequately through nonrestorative care. Root caries evidence does not support selecting one restorative material for every patient and every site [2]. Isolation, defect location, loading, and access for later maintenance should inform the choice. The broader restorative guideline supports case specific decisions about tissue removal and direct materials for vital teeth [4].

Table 1. Clinical variables guiding treatment selection

Clinical finding	Treatment direction	Review crite
Active, cleansable lesion without pulpal disease	Nonrestorative control with daily plaque removal	Activity and texture
Daily care requires assistance	Caregiver support and professional measures when indicated	Feasibility continuity of care
Uncleansable cavity or impaired function	Consider conservative restoration	Function restoration integrit
Pulpal or periapical complication	Diagnostic clarification and definitive treatment	Symptoms clinical findings

Table 1 translates the reviewed evidence into treatment choices [1, 2, 4]. Pain or signs of pulpal or periapical disease require diagnostic assessment and definitive care before a routine arrest regimen is selected.

Discussion: translating evidence into daily care

The numerical comparison supports considering fluoride intensity as part of nonrestorative management. Its applicability depends on the delivery conditions: the trial involved staff-assisted brushing in nursing homes [5]. Older adults living independently may differ in adherence, dexterity, exposed root surfaces, and severity of salivary dysfunction. Medication induced hyposalivation should therefore be assessed individually rather than inferred from age or residential status.

The regimen should also reflect who performs daily care. Difficulty holding a toothbrush, limited access to the affected surface, or dependence on another person may change the implementation plan. When the intended regimen is not feasible, the response should be to simplify the plan, provide assistance, or reconsider treatment. Recording the reason for a change enables meaningful continuity between appointments.

Follow-up should distinguish three outcomes: lesion status, restoration condition, and delivery of daily care. A stable restoration does not exclude new disease elsewhere, and improvement in oral comfort does not establish arrest of an active

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lesion. Review therefore includes the original site and other exposed root surfaces. New symptoms prompt reassessment of the diagnosis rather than automatic repetition of the same intervention.

The trial was not restricted to patients with confirmed medication induced hyposalivation, which limits direct extrapolation to this subgroup [5]. The chart shows mean lesion counts, without confidence intervals, and does not quantify a change in salivary secretion. The broader evidence also varies in dependency, lesion definitions, and follow-up duration [2]. Treatment assessment should consequently record lesion activity and functional benefit separately from relief of dry-mouth symptoms.

Conclusions

Published trial data support integrating higher fluoride intensity with assisted daily plaque control when clinically appropriate. In medication induced hyposalivation, this approach should be combined with medication review, symptom management, and lesion-level reassessment. Restoration is indicated by cleansability, function, and disease control. The proposed clinical application therefore links comparative evidence to a feasible care regimen and explicit reasons for escalation.

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