

IN BRIEF A Summary of the Evidence

Silver Diamine Fluoride for the Prevention and Arresting of Dental Caries or Hypersensitivity: A Review

Key Messages

- Silver diamine fluoride appears to be effective for the arrest and prevention of dental caries (tooth decay) in children and elderly patients; however, the evidence is limited.
- Two systematic reviews on the use of silver diamine fluoride reported tooth discolouration, whereas a primary study involving elderly patients found no adverse effects; however, adverse events associated with silver diamine fluoride are generally not well reported in the literature.
- One study found that children experience less discomfort with silver diamine fluoride treatment compared with resin infiltration treatment.
- A study conducted in Germany found silver diamine fluoride to be more cost-effective than fluoride rinses and chlorhexidine for the prevention of dental caries in the elderly, but this finding might not be applicable to a Canadian context.
- One clinical guideline suggests that silver diamine fluoride treatment may benefit the dental health of children and youth; however, it was unknown whether the benefits would outweigh potential harms, so no recommendation on its use could be provided.
- Another guideline states that silver diamine fluoride can irritate the gums and darken and discolour teeth but appears to be well-tolerated overall, and recommended that it could be a useful agent in populations that would benefit from a less-invasive approach than traditional surgical treatment (dental fillings) or who have trouble accessing dental care.
- No evidence was found on the use of silver diamine fluoride for tooth hypersensitivity.

Context

The conventional method of treating dental caries involves surgically removing the infected and softened dental tissue from the tooth and then filling the resulting hole with restorative material. The invasive nature of this treatment can make it difficult for some patients – for example, children and those with special needs – to tolerate. Silver diamine fluoride has, therefore, been developed as a potential non-surgical alternative to conventional restorative treatment.

Technology

Silver diamine fluoride is a liquid treatment that is applied to the teeth, making it less invasive than traditional procedures for treating dental caries. It has been used for many decades in Japan and other countries for the prevention and arrest of dental caries. In February 2017, 38% silver diamine fluoride was approved for use in Canada. Silver diamine fluoride is thought to have antimicrobial properties and to promote remineralization. It is also thought to cause relatively minimal adverse events, such as tooth discolouration and irritation to the gums.

Issue

A review of the clinical effectiveness, cost-effectiveness, safety, and guidelines related to silver diamine fluoride for the prevention and arrest of dental caries or hypersensitivity will help guide decisions regarding its use.

Methods

A limited literature search was conducted of key resources, and titles and abstracts of the retrieved publications were reviewed. Full-text publications were evaluated for final article selection according to predetermined selection criteria (population, intervention, comparator, outcomes, and study designs).

Results

The literature search identified 500 citations, with 16 additional articles identified from other sources. Of these, 11 met the criteria for inclusion in this review: 5 systematic reviews, 3 randomized controlled studies, 2 guidelines, and 1 economic evaluation.

Read more about CADTH and its review of silver diamine fluoride for the prevention and arresting of dental caries or hypersensitivity at:



cadth.ca/silver-diamine-fluoride-prevention-and-arresting-dental-caries-or-hypersensitivity-review-clinical

Questions or comments about CADTH or this In Brief?



Learn more:
cadth.ca



Contact us:
requests@cadth.ca



Follow us on Twitter:
[@CADTH_ACMTS](https://twitter.com/CADTH_ACMTS)



Subscribe to our E-Alert and *New at CADTH* newsletter:
cadth.ca/subscribe

DISCLAIMER

This material is made available for informational purposes only and no representations or warranties are made with respect to its fitness for any particular purpose; this document should not be used as a substitute for professional medical advice or for the application of professional judgment in any decision-making process. Users may use this document at their own risk. The Canadian Agency for Drugs and Technologies in Health (CADTH) does not guarantee the accuracy, completeness, or currency of the contents of this document. CADTH is not responsible for any errors or omissions, or injury, loss, or damage arising from or relating to the use of this document and is not responsible for any third-party materials contained or referred to herein. This document is subject to copyright and other intellectual property rights and may only be used for non-commercial, personal use or private research and study.

ABOUT CADTH

CADTH is an independent, not-for-profit organization responsible for providing Canada's health care decision-makers with objective evidence to help make informed decisions about the optimal use of drugs and medical devices in our health care system.

CADTH receives funding from Canada's federal, provincial, and territorial governments, with the exception of Quebec.

Ce document est également disponible en français.

August 2017