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This series is coordinated by Corey D. Fogleman, MD, Assistant Medical Editor.

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Author disclosure: No relevant financial affiliations.

### Antiviral Therapy for Bell Palsy

DEAN A. SEEHUSEN, MD, MPH, and ELIZABETH A. EGITTO, DO, *Dwight David Eisenhower Army Medical Center, Fort Gordon, Georgia*

#### Clinical Question

Are antivirals effective therapy for Bell palsy?

#### Evidence-Based Answer

The combination of antiviral agents and corticosteroids is more effective than corticosteroids alone for the complete recovery of patients with Bell palsy (number needed to treat [NNT] = 15) and for the resolution of motor synkinesis and excessive tear production (NNT = 12). (Strength of Recommendation [SOR]: B, based on inconsistent or limited-quality patient-oriented evidence.) Antivirals should not be used alone to treat Bell palsy. (SOR: A, based on consistent, good-quality patient-oriented evidence.)

#### Practice Pointers

Untreated idiopathic facial paralysis, or Bell palsy, leaves up to 30% of patients with some level of permanent facial asymmetry or pain.<sup>1</sup> Previous meta-analyses have demonstrated the effectiveness of corticosteroids at reducing the rate of long-term disability.<sup>2</sup> Some evidence suggests that recurrent viral infections, including herpes simplex virus and varicella zoster virus, are common causes of Bell palsy. This review evaluated the effectiveness of antiviral agents alone or in combination with corticosteroids for the treatment of Bell palsy. An earlier version of this review, which included two low-quality studies judged to be at high risk of bias, concluded that the combination of antivirals and corticosteroids was no more effective than corticosteroids alone for the treatment of Bell palsy.<sup>3</sup>

This Cochrane review included 10 trials with a total of 2,280 participants. The authors used meta-analysis to compare several treatment regimens and a variety of outcomes. Complete recovery rates of facial nerve function in patients with Bell palsy

were improved by treatment with corticosteroids plus antivirals vs. corticosteroids alone at six months (relative risk [RR] = 0.61; 95% confidence interval [CI], 0.39 to 0.97; NNT = 15 [95% CI, 10 to 200]; n = 1,315). A subgroup analysis of patients with severe Bell palsy (i.e., House-Brackmann index of 5 or 6 out of 6) found that more patients achieved complete recovery when the combination of antivirals and corticosteroids was used vs. corticosteroids alone (RR = 0.64; 95% CI, 0.41 to 0.99; n = 478).

The combination of corticosteroids and antivirals also improved long-term motor synkinesis and excessive tear production (so-called “crocodile tears”) over corticosteroids alone (RR = 0.56; 95% CI, 0.36 to 0.87; NNT = 12 [95% CI, 8 to 40]; n = 469). Treatment with antivirals alone was associated with higher rates of residual symptoms vs. treatment with corticosteroids alone (RR = 1.52; 95% CI, 1.08 to 2.12; n = 472). The rate of adverse effects was similar among all of the treatments compared.

The results of this review differ slightly from another meta-analysis that found that the routine addition of antivirals to corticosteroid therapy did not improve at least partial recovery.<sup>4</sup> In that meta-analysis, the authors found that adding antivirals to corticosteroid therapy benefits only patients with severe Bell palsy. In subgroup analyses, the type of antiviral administered did not change outcomes. However, this meta-analysis included only one-half as many patients as the current Cochrane review, which may have led to a lack of statistical power.

Guidelines on Bell palsy from the American Academy of Otolaryngology–Head and Neck Surgery Foundation currently recommend prescribing oral corticosteroids within 72 hours of symptom onset (grade A) and recommend against the use of antiviral monotherapy (grade A).<sup>5</sup> These guidelines state that physicians may opt to prescribe antiviral therapy in addition to corticosteroid therapy (option, grade B) because studies do not exclude a small effect. The

American Academy of Neurology provides similar recommendations, stating that physicians should routinely prescribe corticosteroids to patients with Bell palsy and that they may consider offering antivirals in addition, although there may be no benefit (level C).<sup>6</sup>

SOURCE: Gagyor I, Madhok VB, Daly F, et al. Antiviral treatment for Bell's palsy (idiopathic facial paralysis). *Cochrane Database Syst Rev*. 2015;(11):CD001869.

The practice recommendations in this activity are available at <http://summaries.cochrane.org/CD001869>.

EDITOR'S NOTE: The numbers needed to treat reported in this Cochrane for Clinicians were calculated by the AFP medical editors based on raw data provided in the original Cochrane review.

The views expressed in this article are those of the authors and do not reflect the official policy or position of the U.S. government, the Department of the Army, or the Department of Defense.

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## Fluoride Varnish for Preventing Dental Caries in Children and Adolescents

KARLYNN SIEVERS, MD, *University of Wyoming—Casper Family Medicine Residency Program, Casper, Wyoming*

HUGH SILK, MD, MPH, *University of Massachusetts Medical School, Worcester, Massachusetts*

### Clinical Question

Are topically applied fluoride varnishes safe and effective in preventing dental caries in children and adolescents?

### Evidence-Based Answer

Topically applied fluoride varnishes are safe and effective in preventing dental caries in children and adolescents. There is little information about adverse effects or treatment acceptability. Family physicians should consider incorporating fluoride varnish into childhood preventive care visits. (Strength of Recommendation: A, based on moderate-quality evidence with significant heterogeneity.)

### Practice Pointers

A significant health problem among children is dental caries; 20% of children five to 11 years of age have untreated dental caries, and 39% have had dental restoration.<sup>1</sup> Only 42% of all persons older than 24 months visited a dentist in 2011.<sup>2</sup> Fluoride varnish is inexpensive (approximately \$1 per application) and can be applied easily to teeth by physicians to prevent decay. This updated Cochrane review was originally published in 2002 based on seven trials.

The authors reviewed 22 trials that included 12,455 patients 16 years or younger. Patients were treated with fluoride varnish two to four times per year vs. either placebo gel or no treatment. Study duration was one to five years. The primary outcome measured was the number of decayed, missing/extracted, and filled (DMF) permanent or primary tooth surfaces. The incidence of DMF surfaces in the control group vs. the treatment group was analyzed and used to calculate a prevented fraction percentage. Thirteen trials looked at children and adolescents with permanent teeth. Pooled data showed that patients treated with varnish experienced a 43% reduction in DMF tooth surfaces (95% confidence interval [CI], 30% to 57%;  $P < .0001$ ). Ten studies that analyzed the effect on primary teeth demonstrated a 37% reduction in DMF surfaces in those treated with fluoride varnish (95% CI, 24% to 51%;  $P < .0001$ ). All studies showed a benefit of fluoride varnish in caries prevention.

The authors also reviewed whether the effectiveness of fluoride varnish was influenced by initial caries severity, background exposure to fluoride (e.g., water), concentration of fluoride varnish, frequency of applications, and whether a professional dental

cleaning was provided before varnish application. There was no variation in prevented fraction percentage based on these factors; however, only a few trials reported these data.

The evidence was assessed to be of moderate quality rather than high quality because many of the studies were noted to have an unclear or high risk of bias in at least one of eight bias domains. No adverse effects were noted.

In 2014, the U.S. Preventive Services Task Force gave a grade B recommendation to the following statement: Apply fluoride varnish periodically to the primary teeth of all children starting at primary tooth eruption through age five years.<sup>3</sup> This review supports that recommendation and suggests that the benefit of fluoride application may exist beyond five years of age. Medicaid currently reimburses physicians in 49 states (all but Indiana) for the service; all insurances under the Affordable Care Act must cover the service for patients until six years of age.<sup>4</sup>

SOURCE: Marinho VC, Worthington HV, Walsh T, Clarkson JE. Fluoride varnishes for preventing dental caries in children and adolescents. *Cochrane Database Syst Rev*. 2013;(7):CD002279.

The practice recommendations in this activity are available at <http://summaries.cochrane.org/CD002279>.

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