



Pediatric Pearls

Should we use steroids to treat children with Bell's palsy?

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ABSTRACT

QUESTION A healthy 6-year-old boy came to my office with severe Bell's palsy that had lasted for 24 hours following an upper respiratory tract infection he had had a little over a week ago. Should I treat him with steroids?

ANSWER While there is currently no definitive answer, the risk that Bell's palsy will become permanent seems exceptionally small in children (even smaller than in adults), and the best evidence demonstrates no benefit from steroids. Until a large randomized controlled trial can prove benefit, these patients should not be treated with steroids. The vast majority will recover fully without treatment.

RÉSUMÉ

QUESTION Un garçon de 6 ans autrement en santé m'a consulté pour une grave maladie de Bell qui a duré 24 heures à la suite d'une infection des voies respiratoires supérieures dont il avait souffert une semaine auparavant. Me faudrait-il le traiter aux stéroïdes?

RÉPONSE Même s'il n'existe actuellement pas de réponse définitive, le risque que la maladie de Bell devienne permanente semble exceptionnel chez les enfants (encore moins fréquent que chez l'adulte) et les meilleures données scientifiques ne font pas valoir d'avantages à utiliser des stéroïdes. Jusqu'à ce que des bienfaits soient prouvés à la suite d'une étude contrôlée randomisée de grande envergure, ces patients ne devraient pas être traités avec des stéroïdes. La grande majorité d'entre eux guériront complètement sans traitement.

Bell's palsy is an acute peripheral facial nerve paralysis that usually affects only 1 side of the face. The seventh cranial nerve carries predominantly motor fibres, but also supplies some autonomic innervation, sensation to part of the ear, and taste to the anterior two thirds of the tongue.¹ It is responsible for facial expression, hearing, and lacrimation.¹ Associated symptoms of Bell's palsy, therefore, can include pain around the ear, an altered sense of taste, impaired noise tolerance, and decreased tearing.²

The etiology of Bell's palsy is unknown; viral infection, vascular ischemia, and autoimmune disorders have all been postulated as possible mechanisms.^{1,2} Viral infection became the most widely accepted theory when isolates of *Herpes simplex* and varicella zoster viruses were found in many affected patients.³ The virus is presumed to cause inflammation of the facial nerve, which then becomes compressed by the bony facial canal, and palsy ensues.² Researchers hypothesize, therefore, that anti-inflammatory medications could minimize the ensuing paralysis.

Studies of steroid use

More than 200 studies have examined the usefulness of steroids in treatment of Bell's palsy.⁴ The studies have serious limitations, such as small sample size and lack of randomization, controls, and blinding,⁵ so there is still considerable controversy over use of steroids for Bell's palsy in adults. There is even less evidence for using steroids to treat Bell's palsy in children.⁶

Before diagnosing Bell's palsy, physicians should consider other causes of acute facial paralysis because some require specific therapies. Infection, trauma, central nervous system disease, and stroke can all present with similar symptoms.^{1,7} Etiologies such as otitis media, mastoiditis, Hunt's syndrome (where vesicles seen in the ear are caused by varicella zoster virus), meningitis, Lyme disease, Guillain-Barré syndrome, myasthenia gravis, head trauma, neoplasm (eg, lymphoma and leukemia), hypertension, diabetes mellitus, and toxicity should all be considered.^{1,8} Bell's palsy is uncommon in children younger than 2 years and should prompt a meticulous search for a cause.^{8,9}

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Facial paralysis due to Bell's palsy can range from minimal to complete and can improve up to a year later. Patients with incomplete paralysis have a better prognosis than those with complete paralysis,^{2,10} and the younger the patient, the better the prognosis.¹⁰⁻¹² Most children's palsy resolves within 6 months.¹⁰⁻¹² Possible sequelae of Bell's palsy are paresis, contracture, facial spasms, autonomic dysfunction (decreased tearing), corneal abrasion, and the psychosocial effects of facial deformity.¹⁰

Most studies conducted exclusively in children are retrospective chart reviews that include 48 children or fewer.¹³⁻¹⁵ Bouloche et al¹³ did a retrospective review of 40 patients aged 1 to 16 years with acute facial nerve palsy. Their study found that patients who received steroids had no better outcomes than patients who did not, although recovery was earlier if steroids were administered by day 3. A review of 47 children aged 2 to 16 with Bell's palsy by Dhiravibulya¹⁴ found no difference in outcomes between 39 children who received steroids and 8 children who did not. All patients in this series recovered completely or nearly completely by 7 months. Inamura et al¹⁵ reviewed 58 children younger than 6 years with acute facial nerve palsy, including 48 with Bell's palsy. They found that 9 patients treated with steroids did no better than patients receiving placebo; 97% of patients made a good recovery, leading the authors to conclude that the prognosis was good regardless of treatment.

A recent Cochrane review found that, when the results of the 3 best randomized controlled trials (2 adult and 1 pediatric) were combined, steroid therapy provided no benefit over placebo for recovery of motor function.⁸ A recent review of controlled trials that included children evaluated the results of 8 studies, 5 of which were randomized trials.⁹ While 4 studies found a benefit of steroid therapy, the methods of randomization and allocation concealment were poor, so their conclusions are limited. The authors of the review concluded that routine use of steroids for children with Bell's palsy was not indicated.

Currently, there is only 1 randomized controlled trial of steroid therapy for Bell's palsy in children.⁵ Using the Jadad score of methodologic quality,¹⁶ a Cochrane review⁸ graded this trial 3 on a scale of 0 (poor) to 5 (good). Forty-two children aged 2 to 6 years with onset of Bell's palsy up to 3 days earlier were randomized to receive either oral methylprednisolone (1 mg/kg for 10 days), gradually tapering over 3 to 5 days, or placebo. Using a 6-level grading system of facial nerve paralysis, the authors performed unblinded assessments for asymmetry, spasm, tone, and child's ability to move forehead, eyes, and mouth. The study reported no benefit of treatment with methylprednisolone over placebo, but the

sample might have been too small to detect a difference. While not specific in its evaluation of adverse effects of steroids, this study encountered none. Interestingly, all 42 patients had fully recovered by 12 months. The findings contradicted the hypothesis that steroids benefit patients with severe paralysis,¹⁷ since subjects in this study all had the most severe form of Bell's palsy.

Conclusion

Given the natural history of spontaneous recovery in most pediatric patients, steroid therapy is currently not indicated. A large randomized controlled trial is needed to establish whether steroids benefit children with Bell's palsy. Family physicians and pediatricians should consider referring these patients to neurologists and instituting supportive measures that protect the cornea, such as daytime eye drops, nighttime eye ointment, and avoiding placing eye patches and tape directly on the eyelid.⁷ 🌿

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