

American Family Physician

A peer reviewed journal of the American Academy of Family Physicians

[March 1, 2007 Table of Contents](#)

FPIN's Clinical Inquiries

Treatment of Impetigo

David Price, m.D., and Victoria Betancourt, M.D.,
Eastland Family Practice, Carolinas Medical Center, Charlotte, North Carolina

Leonora Kaufman, M.L.I.S., AHEC Library, Carolinas Medical Center, Charlotte, North Carolina

Clinical Commentary by José E. Rodríguez, M.D., Florida State University College of Medicine, Tallahassee, Florida

Clinical Question

What are the best treatments for impetigo?

Evidence-Based Answer

Topical mupirocin (Bactroban) and fusidic acid (not available in the United States) are more effective than placebo and at least as effective as oral antibiotics for the treatment of limited impetigo, and are better tolerated. (Strength of recommendation [SOR]: A)

Based on the available evidence on effectiveness, no clear preference can be given for any one oral antibiotic over another. (SOR: A)

Limited evidence does not support the use of topical antiseptics in the treatment of impetigo. (SOR: B)

There is insufficient evidence to compare the effectiveness of topical versus oral antibiotics in widespread impetigo.

Evidence Summary

Impetigo is the most common skin infection in children two to five years of age, although it can occur in patients of any age.¹ There has been a shift in the major etiologic agent of this disease over the past 40 years from group A beta-hemolytic streptococcus (i.e., *Streptococcus pyogenes*) to *Staphylococcus aureus*.^{1,2} Few data are available on the natural course of impetigo. The

sequelae of streptococcal infections (e.g., glomerulonephritis) do occur, although they are rare. There is no evidence that treatment of impetigo prevents these complications.³

Two recent systematic reviews have cast doubt on the traditional role of oral antibiotics as first-line therapy for impetigo. The first, a meta-analysis of 57 trials including 3,533 patients, studied varying comparisons of 20 oral and 18 topical treatments for impetigo.⁴

Topical antibiotics had better cure rates than placebo (odds ratio [OR] = 6.5; 95% confidence interval [CI], 3.9 to 10.7), and there was no significant difference between the two most studied topical antibiotics, mupirocin and fusidic acid. Ten of these trials compared mupirocin with oral erythromycin and showed significantly better cure rates with mupirocin (OR = 1.8; 95% CI, 1.1 to 3.0). Six of the studies comparing topical to other oral antibiotics (i.e., dicloxacillin [Dynapen], cephalexin [Keflex], ampicillin, and penicillin) found no differences among cure rates. Twenty-five of the studies, most commonly comparing two oral antibiotics, also showed little difference in cure rates between antibiotics. Cephalosporins and macrolide antibiotics, usually erythromycin and azithromycin (Zithromax), were most often studied.

Oral antibiotic therapy caused more side effects than topical therapy. Topical antiseptic agents (e.g., hexachlorophene [Phisohex], hydrogen peroxide), which have traditionally been used either alone or in conjunction with other therapies, have not been adequately studied or have not been compared with placebo treatment. Two older studies were found comparing topical antibiotics with antiseptic treatment; pooled data favored topical antibiotic therapy.⁴

Another meta-analysis of 16 trials indicated that topical antibiotics are more effective than placebo (number needed to treat = 5; OR = 2.7; 95% CI, 1.5 to 4.9).⁵ There was no significant difference found between the two topical antibiotics, mupirocin and fusidic acid. The review included three trials comparing oral erythromycin with these topical antibiotics and found weak evidence favoring topical therapy (OR = 0.5; 95% CI, 0.2 to 1.0). From the limited high-quality evidence available, the authors recommended a seven-day course of topical therapy for healthy patients with limited disease.

Widespread infection can be difficult to treat topically, so oral therapy is often used. A practice guideline from the Infectious Diseases Society of America (IDSA)⁶ recommends oral therapy in this situation despite a lack of evidence comparing oral and topical treatment for this subset of disease.⁴⁻⁶ The term "widespread" is not clearly defined in most trials.⁴ Many of the outcomes that form the basis for these reviews date back more than 10 years and may not be applicable to the current prevalence of infecting agents or resistance patterns against antibiotics. It is unclear how the rise of community-acquired methicillin-resistant *S. aureus* should affect treatment choices for impetigo.⁶

Recommendations from Others

The American Academy of Family Physicians and the American Academy of Pediatrics have accepted the IDSA guidelines⁶ but made no unique recommendations themselves. All three recommend topical treatment for limited infection and consideration of systemic penicillinase-resistant antibiotics in more widespread disease.⁶

Clinical Commentary

Impetigo is a common condition seen by most family physicians. Although the evidence shows that topical treatment is as good as oral therapy, patient situations still need to be taken into consideration. Some patients apply pressure for physicians to prescribe oral antibiotics. Topical mupirocin is easy to use but must be applied three times per day and can cost about \$70 for a 30-gm tube. For the uninsured and underinsured, a less expensive course of treatment with an oral antibiotic may be preferred; it is all many patients can afford. On occasion, the oral antibiotic may be what the patient prefers even if he or she can afford topical treatment.

Copyright Family Physicians Inquiries Network. Used with permission.

Address correspondence to David Price, M.D., at David.price@carolinashealthcare.org. Reprints are not available from the authors.

Author disclosure: Nothing to disclose.

REFERENCES

1. Bruijnzeels MA, van Suijlekom-Smit LWA, van der Velden J, van der Wouden JC. The Child in General Practice: Dutch National Survey of Morbidity and Interventions in General Practice (in Dutch). Rotterdam, Denmark: Erasmus Universiteit Rotterdam, 1993.
2. Dagan R. Impetigo in childhood: changing epidemiology and new treatments. *Pediatr Ann* 1993;22:235-40.
3. Baltimore RS. Treatment of impetigo: a review. *Pediatr Infect Dis* 1985;4:597-601.
4. Koning S, Verhagen AP, van Suijlekom-Smit LW, Morris A, Butler CC, van der Wouden JC. Interventions for impetigo. *Cochrane Database Syst Rev* 2004;(2):CD003261.
5. George A, Rubin G. A systematic review and meta-analysis of treatments for impetigo. *Br J Gen Pract* 2003;53:480-7.
6. Stevens DL, Bisno AL, Chambers HF, Everett ED, Dellinger P, Goldstein EJ, et al., for the Infectious Diseases Society of America. Practice guidelines for diagnosis and management of skin and soft-tissue infections [Published corrections appear in *Clin Infect Dis* 2005;41:1830; *Clin Infect Dis* 2006;42:1219]. *Clin Infect Dis* 2005;41:1373-406.

Clinical Inquiries provides answers to questions submitted by practicing family physicians to the Family Physicians Inquiries Network (FPIN). Members of the network select questions based on their relevance to family medicine. Answers are drawn from an approved set of evidence-based resources and undergo peer review. The strength of recommendations and the level of evidence

for individual studies are rated using criteria developed by the Evidence-Based Medicine Working Group (http://www.cebm.net/levels_of_evidence.asp).

The complete database of evidence-based questions and answers is copyrighted by FPIN. If interested in submitting questions or writing answers for this series, go to <http://www.fpin.org> or e-mail: questions@fpin.org.