Erythrasma Treated With Single-Dose Clarithromycin

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REPORT OF CASES

Three patients presented to our clinic with erythrasma. The results of the clinical examination of each patient showed bilateral patches of erythema in the plicae inguinalis with minimal fine scaling and no central clearing. One patient also had a small superficial erosion in the right plica inguinalis. The results of an examination using Wood light showed coral red fluorescence in each patient. Potassium hydroxide preparations were negative for hyphae or yeast and bacterial cultures grew normal skin flora.

THERAPEUTIC CHALLENGE

Traditionally, erythrasma has been treated with oral erythromycin or various topical regimens. Single-dose clarithromycin holds the potential to be a safe, cost-effective, well-tolerated alternative to a more lengthy course of erythromycin.

SOLUTION

Each patient was given a single 1-g dose of clarithromycin. One patient who had multiple recurrent episodes of erythrasma was also instructed to wash with dilute chlorhexidine gluconate solutions twice daily. Two weeks later the results of an examination using Wood light were negative in each patient and no residual erythema was present. The superficial erosion healed completely in the third patient. Symptoms of pruritus generally resolved within 48 hours of taking the clarithromycin. One patient noted mild cramping of the gastrointestinal tract the evening he took the clarithromycin but stated that he had caught a cold and had experienced similar cramping prior to taking clarithromycin as well. He was not taking any other medications and no other adverse effects from the single-dose regimen were noted.

COMMENT

Erythrasma is a superficial bacterial skin infection of intertriginous sites caused by Corynebacterium minutissimum. It presents as pruritic, well-demarcated erythematous patches. The surface is often smooth or covered by a fine scale and the resemblance to cutaneous dermatophytosis often leads to its misdiagnosis. A potassium hydroxide preparation often helps to avoid this confusion. Atypical presentations that lack symptoms or show variations in color or texture are common. Chronic infection is seen more frequently when moisture, obesity, and underlying diseases, such as diabetes, exist.1,2 Porphyrin production is responsible for the characteristic coral red fluorescence under Wood light and is clinically useful. Other superficial infections caused by Corynebacterium species include trichomycosis axillaris and pitted keratolysis.

Corynebacterium minutissimum is a short gram-positive diphtheroid that is notoriously difficult to culture. Optimal growth is obtained under aerobic conditions on tissue culture media supplemented with bovine serum, agar, and tromethamine. Porphyrin production becomes evident within 12 to 48 hours.1,2 Our laboratory was unable to culture C minutissimum from our patients. Inquiry revealed that an improper culture medium had been used in each case.

Erythromycin is the treatment of choice for erythrasma. One gram in divided doses is usually given daily for 5 days. Other multiple therapies have proven effective. These include topical 10% to 20% aluminum chloride, 2% clindamycin hydrochloride solution, 2% fusidate sodium ointment, miconazole cream or Whitfield ointment, and other systemic antibiotics, such as tetracycline.2

Clarithromycin, a semisynthetic macrolide, is structurally identical to erythromycin except for a hydroxy to O-methyl substitution at position 6 on the lactone ring. The result is better gastric acid stability, higher bioavailability, a longer half-life, and a broader spectrum of antimicrobial activity than erythromycin. This allows a decrease in both the frequency and overall dosage and fewer adverse effects in the gastrointestinal tract.3,5
Clarithromycin has a broad spectrum of activity and exerts its antibacterial effect by reversibly binding the 50S-ribosomal subunit of bacteria. Serum half-life is 4.6 hours and metabolism is primarily via the hepatic cytochrome p450 hydroxylase. If given concomitantly with food, the absorption will be delayed but bioavailability is unchanged. The parent drug and its metabolites are excreted in both the urine and feces.3

Drug interactions include carbamazepine, theophylline, oral contraceptives, and an enhancement of glucocorticosteroid effects. Activity against many gram-positive aerobic cocci and bacilli, gram-negative bacteria, some anaerobes, and *Chlamydia* has led to widespread clinical usefulness.3-5 Clarithromycin is generally bacteriostatic but has proven bactericidal against *Streptococcus pyogenes*, *Streptococcus pneumoniae*, and *Haemophilus influenzae*.4 Because higher drug concentrations are often achieved in macrophages, it is particularly effective against intracellular pathogens, such as *Mycobacterium*, *Chlamydia*, and *Legionella*.3

We chose to give our patients a single 1-g dose of clarithromycin to treat their erythrasma. All patients tolerated this well with 1 patient experiencing mild abdominal cramping. Their symptoms resolved in approximately 48 hours. The results of an examination using Wood light remained negative 14 days after treatment and no patients had a recurrence of their symptoms. All our patients had erythrasma limited to the groin and perineum. Whether interdigital erythrasma, which is often complicated by fungal and gram-negative organisms, will be as responsive to single-dose therapy remains to be seen.

At our pharmacy 1 g of clarithromycin was comparable in price with a course of erythromycin, 500 mg 4 times daily, and less expensive than topical clindamycin. We propose that a single 1-g dose of clarithromycin is an efficacious treatment for erythrasma with fewer adverse effects than erythromycin, better tolerance, better compliance, and comparable cost. Other macrolides may prove similarly efficacious. It is important to note that this is a single report with a limited number of patients and that a controlled trial comparing single doses of clarithromycin, oral erythromycin, and topical clindamycin is warranted.

**REFERENCES**


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