

If You Can't Stand the Rash, Get Out of the Kitchen: An Unusual Adverse Reaction to Ciprofloxacin

Adam Jaffé, MRCPCH,* and Andrew Bush, MD

Summary. Ciprofloxacin, a quinolone antibiotic, is used to treat a wide variety of infections including *Pseudomonas aeruginosa* in patients with cystic fibrosis (CF). Photosensitivity is a well-known complication of treatment with this group of antibiotics, and it is more common in patients with CF. We report on a case of photosensitivity induced by indoor fluorescent strip-lighting (spectral range, 295–760 nm) in a 12-year-old girl with CF treated with ciprofloxacin. This type of lighting emits UVA rays (320–400 nm) which cause skin damage in the presence of sensitizing agents. Patients taking ciprofloxacin are usually advised to protect their skin from direct sunlight. We suggest that more attention should be paid to indoor sources of UV light. *Pediatr Pulmonol.* 1999; 28:449–450. © 1999 Wiley-Liss, Inc.

Key words: cystic fibrosis; ciprofloxacin; photosensitivity; indoor lighting.

INTRODUCTION

Ciprofloxacin, a quinolone antibiotic, is used to treat a wide variety of infections, including *Pseudomonas aeruginosa* pulmonary exacerbations in patients with cystic fibrosis (CF).¹ Although not licensed for use in children under 12 years of age due to reports of arthropathy in young animals, it is often prescribed in this age group, particularly in children with CF; few safety problems have been reported.² Photosensitivity is a well-known adverse reaction and has been documented previously.¹ We report on an unusual variant.

CASE REPORT

A 12-year-old girl with CF became increasingly short of breath, associated with increased coughing. She produced purulent sputum which grew *Pseudomonas aeruginosa*. The diagnosis of a respiratory infective exacerbation was made, and she was started on ciprofloxacin 750 mg twice daily for 2 weeks. Ten days after commencing treatment, while walking in the sun, she noticed a pruritic erythematous rash developing on exposed skin areas of her legs, face, and arms which spontaneously resolved later that day. That evening, a few minutes after entering the warm kitchen, her exposed arms and face again became red and intensely itchy, described as resembling sunburn. Her family practitioner treated the

rash with a soothing cream. The rash abated after the end of the course of ciprofloxacin.

DISCUSSION

Adverse reactions affecting the skin due to fluoroquinolones have been estimated to occur in 0.5–10% of patients taking the drug, and these reactions tend to be reversible.¹ It has been suggested that CF patients are at greater risk, with more than 50% experiencing ciprofloxacin-associated phototoxicity.³ This photosensitivity is secondary to long-wave ultraviolet (UV) irradiation.

The girl's kitchen was lit by fluorescent strip-lights (Osram, Ltd., Middlesex, England) spectral range 295–760 nm, data from manufacturer, and we believe that the UV rays emitted were responsible for the renewed photosensitivity. The most frequently used source of indoor lighting is the fluorescent tube, which emits more UV light than standard tungsten household lights.⁴ UV rays are classified according to their wavelength. UVA (320–400 nm) usually causes skin damage in the presence of

Department of Respiratory Paediatrics, Royal Brompton Hospital, London, UK.

*Correspondence to: Dr Adam Jaffé, Department of Respiratory Paediatrics, 4th Level Chelsea Wing, Royal Brompton Hospital, Sydney St., London SW3 6NP, UK. E-mail: Adjaffe@aol.com

Received 11 September 1998; Accepted 24 June 1999.

sensitizing agents such as drugs and porphyrins. UVB (290–320 nm) is of high energy and causes sunburn. UVC is the shortest (200–290 nm) and is the cause of skin damage from some ultraviolet lights, especially those used in sterilization.

The diagnosis of UV skin damage comes from recognizing the distribution of the rash. Rare cases of exposure to UVA and UVB light from fluorescent lights causing contact photosensitivity and solar urticaria have been previously reported.⁴ Fluorescent lamps emitting UVB radiation induced disease activity in 13 of 30 patients with photosensitive systemic lupus erythematosus.⁵ We are unaware of any report of ciprofloxacin-induced photosensitivity to fluorescent lights. It is thought that the abnormal skin reaction seen in patients treated with ciprofloxacin is caused by a phototoxic mechanism induced by UVA.⁶ Clinical improvement is obtained by reducing the dosage or stopping the drug. The skin should return to normal within 2 weeks. Sunscreens provide protection against UVA and will prevent recurrence in patients who have previously developed a photosensitivity reaction.

Patients taking ciprofloxacin are usually advised to protect their skin from direct sunlight. Perhaps more attention should be paid to indoor sources of UV light.

REFERENCES

1. Jensen T, Pedersen SS, Nielsen CH, Hoiby N, Koch C. The efficacy and safety of ciprofloxacin and ofloxacin in chronic *Pseudomonas aeruginosa* infection in cystic fibrosis. *J Antimicrob Chemother* 1987;20:585–594.
2. Chysky V, Kapila K, Hullmann R, Arcieri G, Schacht P, Echols R. Safety of ciprofloxacin in children: worldwide clinical experience based on compassionate use. Emphasis on joint evaluation. *Infection* 1991;19:289–296.
3. Burdge DR, Nakielna EM, Rabin HR. Photosensitivity associated with ciprofloxacin use in adult patients with cystic fibrosis. *Antimicrob Agents Chemother* 1995;39:793.
4. Harber LC, Whitman GB, Armstrong RB, Deleo VA. Photosensitivity diseases related to interior lighting. *Ann NY Acad Sci* 1985;453:317–327.
5. Rihner M, McGrath H Jr. Fluorescent light photosensitivity in patients with systemic lupus erythematosus. *Arthritis Rheum* 1992;35:949–952.
6. Ferguson J, Johnson BE. Ciprofloxacin-induced photosensitivity: *in vitro* and *in vivo* studies. *Br J Dermatol* 1990;123:9–20.