

Short Communication

Photosensitivity induced by lomefloxacin with cross-photosensitivity to ciprofloxacin and fleroxacin

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A 69-year-old man was seen in June 1997 with erythema, vesicles, and edema on his face and red papules on his dorsal hands that had started a few days before. He had been taking lomefloxacin (LFLX) (Bareon[®], Hokuriku Co. Ltd, Fukui, Japan) 200 mg t.d.s. and lysozyme chloride 90 mg t.d.s. orally for rhinitis for 2 weeks. The patient had never taken ciprofloxacin (CPFX) or fleroxacin (FLRX).

We performed phototesting as previously described (1) with a Dermalay, Model M-DMR-1 (Eisai Co. Ltd., Tokyo) as light source (2, 3), 4 weeks after the patient stopped taking LFLX and lysozyme chloride. UVB-MED (minimal erythema dose) was normal (60 mJ/cm²), and irradiation with 13.5 J/cm² for UVA produced no response, suggesting that the photosensitivity of the patient had become normal. Patch and photopatch tests were carried out with 10, 1, and 0.1% pet. LFLX, and 10% pet. CPFX, sparfloxacin (SPFX), and FLRX. LFLX (10% and 1%), CPFX (10%), and FLRX (10%) in pet. with UVA-irradiation (4.5 J/cm²) produced erythema and small papules with pruritus 1 day after irradiation. Patch and photopatch tests with LFLX, CPFX, SPFX, and FLRX in 5 normal subjects showed no erythema or papular response 2 days after application or 1 day after irradiation. Oral photochallenge test with lysozyme chloride 30 mg and 4.5 J/cm² UVA gave no response.

Discussion

Certain new 4-quinolones, especially enoxacin (ENX) with a naphthyridine ring and SPFX and LFLX with a quinolone ring, are well-known to cause photosensitivity (4–8). Photosensitivity induced by LFLX is thought to be due to both phototoxic and photoallergic mechanisms (4, 9), photopatch testing with LFLX commonly being negative (10). Cross-photosensitivity to other quinolones has hardly ever been reported (5). An animal study indicated that LFLX had the highest phototoxic potential of the 4-quinolones, also caused photoallergy, and showed no cross-photosensitivity with other 4-quinolones (11).

Our patient showed positive photopatch tests to

LFLX, CPFX and FLRX, suggesting cross-photosensitivity among the 3 quinolones. A complex of quinolone, piperazine, and fluorine residues is presumed to be the antigenic determinant, because it is a structure common to LFLX, CPFX, and FLRX. These 3 quinolones all have a fluorine atom at position 6. A previous report mentions that new quinolones with a fluorine at position 8 readily cause photosensitivity (12), but our case suggests that a fluorine at position 6 may also be causal.

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