Acute Rhabdomyolysis during Treatment with Ofloxacin—A Case Report

Fluoroquinolones have an excellent safety record and good tolerability. The main adverse effects involve the gastrointestinal tract (~5%), skin (1%–2%, including phototoxicity), and CNS (<1%) [1]. We report a case of rhabdomyolysis that occurred shortly after the patient began taking ofloxacin.

In April 1998, 9 days after a 2-week stay in Cuba, a 54-year-old woman was admitted with a 1-week history of fever (40°C) and diarrhea (>10 stools daily, without blood or mucous). The day before admission, urine culture yielded Escherichia coli susceptible to amoxicillin, aminoglycosides, and fluoroquinolones. Intravenous ofloxacin therapy (400 mg/day) was started in the emergency room. She had been taking diltiazem for 9 years and also clonazepam for 2 years.

On admission to our department, she was afebrile, and abdominal palpation showed only mild pain of the left colon. The physical examination was otherwise normal. Measurements made 9 h after the first 200-mg intravenous dose of ofloxacin included the following values: WBC count, 14.0 × 10^9/L, with 80% segmented neutrophils and no hypereosinophilia; C-reactive protein, 430 mg/L; creatinine, 185 mmol/L; and creatine phosphokinase, 2000 IU (normal, 200 IU). Cultures of blood and urine were negative, as were fecal culture and direct examination for bacterial pathogens and parasites. On the second hospital day, she had marked tenderness, predominantly over her proximal muscles, and complained of muscle weakness; arthralgia and tendonitis were absent. Sensory and motor nerve conduction studies were normal. On the fourth hospital day, her C-reactive protein level fell to 4 mg/L; her WBC count was normal but her creatine phosphokinase level had increased to 24,000 IU. Her lactate dehydrogenase level was 18,000 IU, and her aspartate aminotransferase level was 15 times normal without renal failure.

Ofloxacin was considered as the possible cause of the acute nontraumatic rhabdomyolysis and was withdrawn 4 days after its introduction. We found no other explanation for the rhabdomyolysis, despite thorough infectious, metabolic, and immunologic testing. Axial fast-spin T2-weighted MRI of the legs showed an increased signal and fluid in both quadriceps, predominantly on the right. Needle electrode examination showed no spontaneous activity except low-amplitude and short-duration motor unit potentials in all muscles, pointing to a myopathic process. A deltoid muscle biopsy performed 1 week after onset showed no congenital or metabolic signs on histoenzymatic examination and no inflammatory infiltrate or infectious foci on serial paraffin sections. At this time, circulating muscle-enzyme activities had returned to normal, and the myalgia and muscle weakness had disappeared.

Ofloxacin probably played a causative role in the rhabdomyolysis, even though similar reports in the literature are very rare. Other antibiotics, such as trimethoprim-sulfamethoxazole [2], have been incriminated in the onset of rhabdomyolysis. Blain et al. [3] and Fujii et al. [4] reported cases of severe rhabdomyolysis in elderly patients receiving a combination of ciprofibrate and norfloxacin and receiving ciprofloxacin hydrochloride, respectively. The chronological criteria concerning the drug challenge and rechallenge and the clinical and extraclinical semiological criteria were suggestive of the drug-effect rela-
Fatal Meningitis Due to Levofloxacin-Resistant Streptococcus pneumoniae

Because of the rising incidence of respiratory tract infections caused by penicillin-resistant Streptococcus pneumoniae, recommendations for empirical treatment of community-acquired pneumonia include the use of a fluoroquinolone with enhanced activity against S. pneumoniae (such as levofloxacin or trovafloxacin) [1]. The choice of a fluoroquinolone is attractive, since the prevalence of fluoroquinolone resistance among S. pneumoniae isolates has been reported to be as low as 0.3% [2]. Because of this low rate, microbiology laboratories may not routinely test isolates of S. pneumoniae for resistance to the fluoroquinolones, and the Performance Standards for Antimicrobial Susceptibility Testing of the National Committee for Clinical Laboratory Standards [3] lists only erythromycin, penicillin, and trimethoprim-sulfamethoxazole as agents to test primarily and to report. With the widespread use of fluoroquinolones, however, the potential for an increasing rate of unrecognized fluoroquinolone resistance exists. We report our experience with a case of fatal S. pneumoniae bacteremia and meningitis that occurred despite treatment with levofloxacin.

A 58-year-old HIV-positive man with a CD4 cell count of 420/mm³ and a history of splenectomy 1 year before was admitted to an outside hospital because of complaints of sinus congestion and fever. A chest radiogram was unremarkable, and therapy with levofloxacin (500 mg orally q.d.) was initiated.

Over the next 4 days, the patient became increasingly lethargic, and a CT scan of the head revealed hydrocephalus. Antibiotic therapy was changed to vancomycin, ceftriaxone, and ampicillin, and he was transferred to our institution. At our center, gram staining of CSF revealed gram-positive diplococci, and culture of CSF yielded S. pneumoniae that was susceptible to penicillin, erythromycin, and trimethoprim-sulfamethoxazole but resistant to levofloxacin (an inhibition zone diameter of zero was determined by the Etest [AB BIODISK North America, Piscataway, NJ]). Cultures of blood obtained at the outside hospital also yielded S. pneumoniae (which was susceptible to penicillin [susceptibility testing for levofloxacin was not performed]). Unfortunately, the patient never regained consciousness and died several days later.

Although the prevalence of fluoroquinolone-resistant S. pneumoniae has been reported to be low, Ho et al. [4] have recently reported a prevalence of levofloxacin resistance of 5.5% in Hong Kong. We are unaware of any recent similar data in the United States. Although our experience is with just 1 case, it may represent an emerging trend. Clinicians and microbiology laboratory directors may want to consider adding susceptibility testing for fluoroquinolones when S. pneumoniae is isolated.

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References
2. Doern GV, Pfaffer MA, Erwin ME, Brueggemann AB, Jones RN. The prevalence of fluoroquinolone resistance among clinically significant respiratory tract isolates of Streptococcus pneumoniae in the United

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Clinical Infectious Diseases 1999;29:1599–600
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References