

Gatifloxacin-Induced Hallucinations in a 19-Year-Old Man

TO THE EDITOR: The fluoroquinolones are an underrecognized cause of drug-induced mental status changes.¹ Searching for reports of acute psychiatric changes due to the fluoroquinolones yielded few case reports, with ciprofloxacin cited the most often (rare CNS side effects of seizures^{2,3} and hallucinations^{4,5}). Significant adverse reactions to gatifloxacin have been reported, but abnormal thinking and hallucinations have a frequency of less than 0.1%.^{6,7} It has been theorized that the mechanism by which the fluoroquinolones cause CNS disturbances is through the blocking GABA receptor-binding, and this idea has even been supported by excitatory changes observed on EEG after IV infusion.^{1,8} The newer fluoroquinolone gatifloxacin (Tequin®) has not been reported yet as causing hallucinations. As consultants, we managed an uncomplicated case involving gatifloxacin-induced hallucinations in a healthy 19-year-old man.

Our patient, RS, was an otherwise healthy, young military recruit in basic training who was admitted for community-acquired pneumonia. He was being managed with IV Tequin® 400 mg per day and prn acetaminophen for fever. He denied past psychiatric history, but did have genetic loading (brother) for bipolar disorder. By Hospital Day 2, he was still febrile (102°F–103°F), complaining of hallucinations (seeing family members and a pet dog who were not there in his room), and endorsed increase paranoia (stating the medical staff was “out to kill him”). No

changes in his regimen were made for 2 days, and he remained febrile, with intermittent hallucinations. A repeat chest x-ray on Hospital Day 4 showed no signs of improvement, so his antimicrobial coverage was increased by adding 3.375 g of piperacillin/tazobactam (Zosyn®) every 6 hours. Psychiatry reassessed him on Hospital Day 5, and RS still endorsed ego-dystonic hallucinations that he knew were not real. He had been afebrile for over 36 hours, remained alert to person place and time (there was never evidence of delirium), and scored 30 out of 30 on the Folstein Mini-Mental State Exam.

We postulated that RS had Tequin®-induced hallucinations and recommended discontinuation (he remained on Zosyn®). Factors suspected to increase the risk of neurotoxic and psychiatric side effects of the fluoroquinolones include advanced age, renal dysfunction, and use of theophylline or NSAIDs,^{1,8} and RS had none of these. We reassessed RS on Hospital Day 6, and his hallucinations had resolved (thus correlating with Tequin's® half-life of 7–14 hours⁶). He was discharged 2 days later with resolution of his pneumonia and was returned asymptomatic to training.

Perhaps his genetic loading for bipolar disease made RS more susceptible to psychiatric sequelae of the fluoroquinolones, but no literature supports this. Given his benign history, we suspect that psychiatric side effects such as paranoia and hallucinations have been underreported with the fluoroquinolones, especially with gatifloxacin. Perhaps it has more inherent risk for psychiatric side effects than other fluoroquinolones; we wonder whether his psychiatric symptoms would have been as marked with ciprofloxacin. In any event, this case sug-

gests that caution should be exercised when administering newer fluoroquinolones like gatifloxacin, and that a low threshold for discontinuing or switching treatment should exist if a patient starts to exhibit these symptoms.

Marie Adams, D.O.

Hamid Tavakoli, M.D.

Wilford Hall Medical Center, Dept. of Psychiatry, Lackland Air Force Base

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Goserelin-Induced New-Onset Depressive Disorder

TO THE EDITOR: We report a case of new-onset depressive disorder in a patient with a documented history of prostate cancer treated with gosere-