Association of a Tourette-like Syndrome with Sparfloxacin

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Introduction

Sparfloxacin is active against major respiratory pathogens and the atypical pathogens in pneumonia that are being reported with increasing frequency. It is an effective therapy for the management of respiratory tract infections, urinary tract infections and skin infections. Photosensitivity, nausea and diarrhea are the most common adverse events reported in clinical trials of sparfloxacin. Its use is contraindicated in patients with QTc-interval prolongation. The main central nervous system (CNS) problems associated with fluoroquinolones, which include dizziness, convulsions, psychosis and insomnia, are low with sparfloxacin. We present a rare case of an unusual acute encephalopathy with characteristics suggestive of Tourette's syndrome. This is only the second reported case of a Tourette-like syndrome associated with the use of any quinolone while the earlier one was reported with use of ofloxacin [1]. This case is being reported for its rarity and documentation of this neurotoxicity as a possible class effect.

Case Report

A 70 year old man was admitted as a case of chronic bronchitis with increased cough, mucopurulent expectoration and breathlessness of seven days duration. On examination his respiratory rate was 26 per minute and pulse rate of 92 per minute. There was no cyanosis, clubbing or lymphadenopathy. Examination of lungs revealed bilateral basal crepts (Right.>Left) with scattered rhonchi. Chest radiograph was suggestive of chronic bronchitis. Patient was started on tablet sparfloxacin and dextromethorphan. On the fourth day of admission, patient developed orofacial and limb automatism suggestive of complex partial seizures. This was followed by acute confusional state lasting for 30 min. After two hours of this episode, patient suddenly developed abnormal behaviour in the form of repeated spitting and profuse sweating, with echolalia, echopraxia, hypersalivation, and later amnesia for the episode on recovery. This episode

lasted for 24 hours. This clinical syndrome had several features in common with Tourette's syndrome and possibly with frontal lobe onset complex partial seizures. His serum electrolyte levels, electroencephalographic, neuroradiologic, and cerebrospinal fluid examinations were normal. In this elderly patient, imaging studies were negative for structural defects, ruling out metastasis as the cause of the seizure and Tourette-like syndrome. Therefore, an investigation of drug-related causes ensued. The most likely offending agent was sparfloxacin, which was thus stopped. Patient recovered completely in the next 24 hours. The lower respiratory tract infection, causing exacerbation of chronic bronchitis, responded to cefotaxime and he was discharged. He is under regular follow up since discharge and has not had any recurrence of seizures or Tourette-like syndrome since then.

Discussion

Sparfloxacin is an effective therapy for the management of community acquired pneumonia, acute exacerbations of chronic bronchitis, sinusitis, urinary tract infections, acute gonococcal and nongonococcal urethritis and skin infections. Its safety profile is similar to that of other quinolone antimicrobial agents. Sparfloxacin is known to cause phototoxicity, QTc-interval prolongation, nausea, diarrhoea, dyspepsia, abdominal pain, vomiting, flatulence and taste perversion [2]. The reported neurotoxic effects of the fluoroquinolones include dizziness, insomnia, seizures, delirium and psychosis, best explained by the gamma-aminobutyric acid-antagonistic properties of this class of drugs. However, CNS side effects, except for insomnia, are uncommon with sparfloxacin [3]. This is the second reported case of a Tourette-like syndrome associated with the use of any quinolone while the first case reported with the use of sparfloxacin, suggested a possible interaction with central dopaminergic neurotransmitter system. The use of drugs such as sparfloxacin that have improved central nervous system penetration accompanied with disease or age related

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reductions in renal function, concomitant use of drugs such as theophylline and nonsteroidal anti-inflammatory drugs, and possibly increased pharmacodynamic sensitivity, can place the elderly at special risk for quinolone neurotoxicity. Thus, dosage modifications and an awareness of possible central nervous system adverse effects are warranted. This case and other mentioned report indicate that fluoroquinolones like sparfloxacin may contribute to development of Tourette-like syndrome. This toxicity should be accepted as a class effect rather than due to a specific fluoroquinolone therapy.

Conflicts of Interest

None identified

References

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