



## Case Report

# Levofloxacin induced psychosis in elderly: Case report

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### ARTICLE INFO

#### Article history:

Received 20-11-2019

Accepted 12-12-2019

Available online 26-12-2019

#### Keywords:

Psychosis

Gamma amino butyric acid

Levofloxacin

Fluroquinolones

### ABSTRACT

Levofloxacin one of the antibiotics in fluoroquinolones groups are the most frequently used by physician to treat the infection. They are generally well tolerated but can cause adverse neuropsychiatric side effects like acute psychosis, which on discontinuation of the drugs immediately lead to remission, which has been highlighted in this case report.

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## 1. Introduction

The fluoroquinolone class of antibiotics shows promise to become as diverse and as important as other class of antibiotics. Bactericidal properties of the fluoroquinolones are due to inhibition of bacterial DNA gyrase.<sup>1</sup> Its psychiatric manifestations like changes in mental status, hallucinations, and delirium are under reported, particularly with ciprofloxacin.<sup>1</sup> The possible pathogenesis of this neuronal manifestation seems to be related to its in ability to bind with gamma -aminobutyric acid (GABA) receptors.<sup>2</sup> This case report highlights about levofloxacin-induced acute psychosis encountered during treatment of acute bronchopneumonia in a 62 year old female patient.

## 2. Case History

A 62 Year old elderly female came with complaints of high grade pyrexia with cough and cold since one week. She was apparently symptom free before that. There was no any history of taking medication for vomiting or any psychiatric illness. She denied taking any treatment for hypertension and diabetes mellitus. On clinical examination

the patient was febrile with increased respiratory rate of 24 breathe per minute. On chest auscultation she was having inspiratory crepts on left lower axillary and infrascapular area. Her blood pressure was 112/70 millimetre of mercury in right upper limb in supine position. Her biochemical investigations revealed haemoglobin of 9.5 gm%, total leucocyte count of 12,800 with Polymorph 80%, Lymphocyte 18%, and eosinophil 2%. The erythrocyte sedimentation rate was 14 mm/hour. Her blood sugar random was 120 mg/dl. Her renal and liver function tests were normal.

In view if clinical finding her chest X ray was done which showed slight haziness in left lower chest. [Figure]In view of respiratory findings and investigation she was put on tablet levofloxacin 500mg once a day and paracetamol 650 mg twice a day. Patient started doing well for 3 days, after that she developed irrelevant behaviour, started auditory hallucination in form of voice of dead relatives.

After excluding m etabolic causes like hypoglycemia, electrolyte imbalance, and meningoencephalitis possibility of levofloxacin-induced acute psychosis was kept and the medicine was stopped. Within 48 h of stopping levofloxacin, she became alert and oriented without any altered behaviour. In place of levofloxacin, she was started

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**Fig. 1:**

with azithromycin 500 mg per day for 5 days. She responded well and discharged after one week.

### 3. Discussion

Among the third-generation fluoroquinolone, levofloxacin has a broad spectrum antibacterial activity both against gram-positive as well as gram-negative bacteria. It is an optically active levo - isomer of the racemate ofloxacin which leads to its broad spectrum bactericidal activity.<sup>3</sup> Though majority of the patient develop gastrointestinal side effect in as much as 3 to 17%, reported neurological side effects are headache, dizziness, restlessness, tremor, insomnia, hallucinations, convulsions, anxiety, and depression in about 0.9 to 11%.<sup>4,5</sup> The development of these effects seems to be related to the degree to which the se fluoroquinolones can bind to the GABA receptor and their differing potency to act as GABA

antagonist and bind to the N-methyl-D-aspartate receptor.<sup>2</sup> According to the European dossier data, Psychosis had been rarely reported only in 1 out of 6 million prescriptions.<sup>3,5</sup> The Neurological side effects of fluoroquinolones is an issue that has to be taken into consideration in this group of Antibiotics.

### 4. Conclusion

Levofloxacin from fluoroquinolones are commonly used antibiotics in the treatment of different infections; and hence general practitioner should be aware of the various complications, such as nonspecific anxiety and insomnia to major psychiatric disorders like psychosis. As stopping the drug in time may prevent the progress of such effects.

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**Cite this article:** Annadatha A, Hepat S, Hulkoti V, Kumar S. Levofloxacin induced psychosis in elderly: Case report. *Ann Geriatrics Educ Med Sci* 2019;6(2):33-34.