

Case Report

JOURNAL OF DRUG REACTIONS

An international online peer reviewed Journal

Content available at www.cognixpress.in Online ISSN: 3139-4132

A RARE CASE REPORT OF LEVOFLOXACIN-INDUCED SEIZURES IN PATIENT WITH BRONCHIAL ASTHMA

PUSHPA SATYA MAHALAKSHMI SANIVARAPU, J BHARGAVA NARENDRA*, PRIYANKA RAMBUDI, DIVYA MERUGU

Department of Pharmacy Practice, School of Pharmacy, Aditya University, Surampalem Kakinada.

***Corresponding Author**

Dr. J Bhargava Narendra

Associate Professor

Department of Pharmacy practice, School of Pharmacy, Aditya University, Surampalem Kakinada.

Article History: 11.03.2026 Received: 19.03.2026 Revised: Accepted: 26.04.2026

ABSTRACT

To report a case of seizure and rapidly progressive cognitive impairment 5 min after intravenous administration of levofloxacin. A 56-year-old female with a history of diabetes mellitus was admitted in an unconscious state with frothing at the mouth. She had been receiving IV levofloxacin for cough with expectoration and developed sudden-onset generalized seizures five minutes after administration, which resolved upon discontinuation, indicating a probable levofloxacin-induced adverse reaction. On admission, vitals showed BP 92/47 mmHg, pulse 105 bpm, RR 38/min, SpO₂ 91%, and random blood glucose 171 mg/dL. Labs revealed markedly elevated WBC count (29,600 cells/cumm) with normal renal and liver function parameters; USG abdomen showed grade I fatty liver and 2D Echo showed EF 50%. She was treated with IV Levipil, IV Merotrol, IV Pantoprazole, IV Ondansetron, and regular Duolin and Budecort nebulizations. The patient showed improvement, remained seizure-free, and was discharged in stable condition.

Keywords: Levofloxacin, Bronchial Asthma, Seizures, Diabetes mellitus.

This article is licensed under a Creative Commons Attribution-Non-commercial 4.0 International License. Copyright © 2026 Author(s) retains the copyright of this article.

**INTRODUCTION**

Levofloxacin is a synthetic third-generation fluoroquinolone commonly indicated for the treatment of sinusitis, urinary tract infections, skin and soft tissue infections, and community-acquired pneumonia. The prevalence of its use has led to a rise in reports of adverse drug responses. The most frequent side effects of levofloxacin were nausea, headache, diarrhoea, sleeplessness, constipation, and dizziness. The majority of these side effects were mild. Epilepsy is a rare adverse medication reaction with a seizure rate of 0.1-1% while the overall incidence of fluoroquinolone-related central nervous system disorder is 1-3%.^[1] However, no case has ever been reported regarding fluoroquinolone-induced rapidly progressive cognitive impairment. The purpose of this report is to present a case in which a patient developed seizures after receiving an intravenous injection of levofloxacin and rapidly progressive cognitive impairment after regaining consciousness. The chronological history of the onset and improvement of

the patient suggests levofloxacin as the cause of the symptoms of cognitive impairment in the subject after ruling out degenerative, viral, toxic, and autoimmune causes.

CASE STUDY

A 56-year-old female patient was admitted to the hospital in an unconscious state with frothing at the mouth. She had a recent history of cough with expectoration and was receiving intravenous levofloxacin (50 mL). Approximately five minutes after administration, she developed sudden-onset generalized seizures, which resolved after discontinuation of levofloxacin, suggesting a probable drug-induced adverse reaction. Her past medical history was significant for diabetes mellitus. On examination, her vital signs were as follows: temperature 98.6°F, pulse rate 105 bpm, blood pressure 92/47 mmHg, respiratory rate 38 breaths per minute, and oxygen saturation 91%. Random blood glucose was 171 mg/dL. Her anthropometric measurements included a height of

5'6", a weight of 77 kg, and a BMI of 26 kg/m². Laboratory results revealed hemoglobin 13.7 g/dL, white blood cell count of 29,600 cells/cumm, platelet count 4.7 lakhs/cumm, serum creatinine 0.94 mg/dL, blood urea nitrogen 15 mg/dL, potassium 4.2 mEq/L, sodium 137 mEq/L, chloride 109 mEq/L, direct bilirubin 0.1 mg/dL, total bilirubin 0.2 mg/dL, ALT 9 IU/L, AST 21 IU/L, total protein 6.3 g/dL, serum albumin 3.9 g/dL, and alkaline phosphatase 69 IU/L. Ultrasound abdomen revealed grade I fatty liver and 2D echocardiography showed an ejection fraction of 50% with fair left ventricular function. The patient was treated with injection Levipil 500 mg IV BD with 100 mL NS, injection Merotrol 1 g IV TID with 100 mL NS, injection Pantoprazole 40 mg IV OD, injection Ondansetron 4 mg IV BD, Duolin nebulization every 4th hourly, and Budecort nebulization every 8th hourly. Following treatment, her condition gradually stabilized, seizures did not recur, and she was discharged in stable condition.

S – Subjective

A 56-year-old female was admitted to the hospital in an unconscious state with frothing at the mouth. The patient had a recent history of cough with expectoration and was being treated with IV levofloxacin (50 mL). Approximately 5 minutes after administration, she developed seizures, which resolved after discontinuation of the drug, suggesting a possible adverse drug reaction. Past medical history is significant for **diabetes mellitus**.

O – Objective

Vital Signs at Admission

- Temperature: 98.6°F
- Pulse Rate: 105 bpm
- Blood Pressure: 92/47 mmHg
- Respiratory Rate: 38 breaths/min
- SpO₂: 91%
- Random Blood Glucose: 171 mg/dL

Anthropometric

- Height: 5'6"
- Weight: 77 kg
- BMI: 26 kg/m²

Laboratory Investigations

Parameter	Result
Hemoglobin	13.7 g/dL
WBC count	29,600 cells/cumm
Platelet count	4.7 lakhs
Serum Creatinine	0.94 mg/dL
BUN	15 mg/dL
Sodium	137 mEq/L
Potassium	4.2 mEq/L
Chloride	109 mEq/L
Total Bilirubin	0.2 mg/dL
Direct Bilirubin	0.1 mg/dL
ALT/SGPT	9 IU/L
AST/SGOT	21 IU/L

Total Protein	6.3 g/dL
Serum Albumin	3.9 g/dL
Alkaline Phosphatase	69 IU/L

Imaging

- **USG Abdomen:** Grade I fatty liver
- **2D ECHO:** EF 50%, fair LV function

Medications Given

Name of the medicine	ROA	Dose	Frequency	Day 1	Day 2
Inj. levetiracetam	iv	500mg with 100 ml NS	BD	✓	✓
Inj. Meropenem	IV	1g with 100 ml NS	TID	✓	✓
Inj. pantoprazole	IV	40mg	OD	✓	✓
Inj. ondansetron	IV	4mg	BD	✓	✓
Neb. Duolin+budecort	P/ N	3ml+1mg	4 th hourly + 8 th hourly	✓	✓

Clinical Course

- Seizures occurred immediately following IV levofloxacin and subsided after stopping drug.
- Patient stabilized with supportive and anticonvulsant therapy.
- Later discharged in stable condition.

A – Assessment

- Acute drug-induced seizure likely secondary to IV levofloxacin
- Acute respiratory distress secondary to cough and expectoration
- Diabetes mellitus
- Leukocytosis likely due to infection
- Grade I fatty liver
- Fair left ventricular function (EF 50%)

Primary Diagnosis

Adverse drug reaction – Levofloxacin-induced seizure

P – Plan

Treatment during Hospitalization

- Stopped IV levofloxacin
- Administered anticonvulsant therapy: Inj. Levipil
- Broad-spectrum antibiotic: Inj. Merotrol
- Supportive therapy: Pantoprazole, Ondansetron, Nebulization with Duolin & Budecort

- Continuous monitoring of vitals and neurological status
- Oxygen support & respiratory care

Discharge Plan

- Patient discharged in stable condition
- Avoid levofloxacin and document as a drug allergy
- Follow-up in OPD after recommended duration
- Continue diabetes control and maintain respiratory hygiene
- Monitor for recurrence of seizures or worsening respiratory symptoms

DISCUSSION

One of the rare side effects related to levofloxacin medication is epilepsy. In this patient, infection-related symptoms had preceded the onset of the disease, and it rapidly progressed with unpredictable changes. Once degenerative, viral, toxic, and autoimmune causes are excluded, levofloxacin could be the cause of the symptoms presented by the patient. This is the first reported case of seizures with rapidly progressive cognitive impairment after injection of levofloxacin in the literature. Clinicians should recognize that one of the rare side effects of antibiotics may be unexplained, rapidly progressive cognitive impairment with prodromal symptoms related to infections before onset [2]. Pharmacologically, it is surmised that competitive antagonism at GABA-A receptors, thereby reflecting decreased inhibitory neurotransmission, and possible activation of the NMDA receptor, thereby contributing to increased neuronal excitability, are the causes of fluoroquinolone-induced seizures. The lipophilicity of the compound, its ability to penetrate the central nervous system, and changes in the quinolone ring at the C-7 position affect the risk of neurotoxicity [3]. We have presented a case of a young and healthy female who was treated with intravenous levofloxacin for her COUGH WITH EXPECTORATION. The abrupt onset of generalised seizures and the remission of the symptomatology following treatment discontinuation were the hallmarks of our case.

CONCLUSION

This case represents a probable levofloxacin-induced seizure in a 56-year-old female who developed sudden generalized seizures within minutes of intravenous levofloxacin administration. The rapid onset of symptoms following drug exposure and complete resolution after discontinuation strongly suggest a drug-induced adverse reaction. Prompt withdrawal of levofloxacin, initiation of anticonvulsant therapy, supportive management, and substitution with an alternative antibiotic resulted in clinical stabilization and recovery without recurrence of seizures. The clinical pharmacist played a vital role in

identifying the suspected adverse drug reaction, recommending discontinuation of the offending agent, monitoring therapeutic outcomes, documenting the reaction, and counseling the patient regarding future avoidance of levofloxacin and other fluoroquinolones. This case highlights the importance of pharmacovigilance and multidisciplinary collaboration in ensuring patient safety and preventing serious medication-related complications.

FUNDING

Nil.

INFORM CONSENT

Taken from the participant.

ETHICAL DECLARATIONS

Not Applicable.

AUTHOR CONTRIBUTION

All authors are contributed equally.

ACKNOELEDGEMNET

Authors are thankful to the Superintend of Trust hospitals, Kakinada, ANDHRA Pradesh, India.

CONFLICT OF INTEREST

Not Declared.

REFERENCES

1. Su Z, Zhang G, Shen Y, Li X, Wang Z, Zhang H. One case report of epilepsy and rapidly progressive cognitive impairment after levofloxacin treatment. *BMC psychiatry*. 2023 Dec 7;23(1):918.
2. Mazzei D, Accardo I, Ferrari A, Primavera A. Levofloxacin neurotoxicity and non-convulsive status epilepticus (NCSE): a case report. *Clinical neurology and neurosurgery*. 2012 Dec 1;114(10):1371-3.
3. Cartucho J, Bonito B, Barbosa BR, Fernandes C, Fernandes M, Fernandes CS. Moxifloxacin-Induced Seizures: A Case Report. *Cureus*. 2025 Jul 15;17(7).