

# Ciprofloxacin Induced Ophthalmic Adverse Reaction: Case Report of a Rare Event

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## Abstract

Ciprofloxacin is one of the most commonly used fluoroquinolone group of antimicrobials for treating several infective conditions like urinary tract infections, community acquired pneumonia and gonococcal infections. A patient of lower respiratory tract infection was treated with ciprofloxacin. The patient presented with severe eye oedema which was accompanied by itching and watering. We report this rare case where ciprofloxacin was responsible for the eye symptoms.

**Keywords:** Ciprofloxacin, ocular symptoms, eye oedema

## INTRODUCTION

Ciprofloxacin is one of the most commonly used antimicrobial agent belonging to the fluoroquinolone group. Fluoroquinolones act by targeting the bacterial DNA gyrase and topoisomerase IV. It is used for treatment of several infective conditions e.g. urinary tract infections, bacterial gastroenteritis, gonococcal infections and community acquired pneumonia. Ciprofloxacin has been associated with many adverse drug reactions (ADRs) among which gastrointestinal disturbances, neuropsychiatric problems and musculoskeletal events are frequently encountered.<sup>1</sup> Eye-related ADRs were only occasionally reported with ciprofloxacin worldwide. Here we present a rare case

of severe eye oedema with itching and watering after intake of ciprofloxacin.

## CASE DESCRIPTION

A 42 year old male patient presented with symptoms suggestive of lower respiratory tract infection for three days at the outpatient clinic of Burdwan Medical College Hospital. The patient was prescribed tablet ciprofloxacin (Megacip 500 mg twice daily) and tablet antacid (aluminium hydroxide and magnesium hydroxide combination twice daily) for 5 days. After the intake of first dose of the suspected medication (Ciprofloxacin) within half an hour patient developed severe bilateral oedema of eyes which evolved within next few minutes. This was also accompanied with itching and

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watering from both eyes without any signs of visual disturbances and redness of the eyes. These symptoms persisted for almost three hours after which they gradually subsided. The patient did not take the next dose of medication thereafter. .

The patients on his next visit at the outpatient department was examined and no abnormality was detected in both eyes. The patients had no past history or family history of drug allergy. Cefpodoxime was prescribed to the patients as a substitute for ciprofloxacin with an advise to report any drug reaction. .

Causality assessment was done using WHO-Uppsala Monitoring Centre scale and association was found to be 'probable' for the symptoms encountered. Hartwig's adverse drug reaction assessment scale was applied to find the The severity of reaction was assessed by Hartwig adverse drug reaction assessment scale and it was found out to be 'moderate'.<sup>2</sup>

## DISCUSSION

Ciprofloxacin intake has been associated with symptoms of gastrointestinal disturbances ranging from nausea, vomiting to abdominal discomfort<sup>3</sup>. It's usage has also been associated with neuropsychiatric disturbances comprising of mild headache and dizziness<sup>4</sup>; as well as tendinitis and tendon rupture being induced with treatment by ciprofloxacin<sup>5</sup>. Intake of ciprofloxacin has also been associated with several ophthalmological complications but they are rarely reported. The symptoms reported in eye are retinal detachment with the use of ciprofloxacin<sup>6</sup>. However, in our patient there was swelling of both eyes which was accompanied by itching

and watering and these adverse drug reactions have not been reported with the intake of ciprofloxacin. .

The causality assessment of this adverse drug reaction using the WHO-Uppsala Monitoring Centre scale revealed that this is a 'probable' adverse drug reaction as there was temporal relationship, pharmacological plausibility, dechallenge was also positive; nonetheless, rechallenge was not done due to ethical concerns.

It is not sure whether the reaction occurred due to the drug or its excipient. After excluding all other possibilities, we propose the reaction may be 'bizarre' type. The exact mechanism behind such adverse drug reaction is unknown. Further studies are needed for evaluation of adverse drug reactions in individuals who are prescribed ciprofloxacin.

## CONCLUSION

Ciprofloxacin may lead to rare type of ophthalmological complications. Therefore, caution should be taken while administering ciprofloxacin to such patients. Also care should be taken to report such events.

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## Conflict of interest

None

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