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Aphasia: a Rarest Complication with a Well Known Drug Levofloxacin

DR. VIVEK MITTAL	Ms, 13, NATARAJ PURAM, KAMLA NAGAR, AGRA.
DR. ARCHANA AGARWAL	LECTURER, 13, NATARAJ PURAM, KAMLA NAGAR, AGRA.
DR. AMRITA GUPTA	LECTURER, 89, VIMAL VATIKA, KAMLA NAGAR, AGRA.
DR. UMA SRIVASTAV	PROFESSOR, KHANDARI, AGRA
DR. VIDHI CHANDRA	SENIOR RESIDENT, 70, PANDAV NAGAR, SHAHGANJ, AGRA
DR. AVINISH SAXENA	ASSOCIATE PROFESSOR, 89, VIMAL VATIKA, KAMLA NAGAR, AGRA
DR. PALLAV AGRAWAL	SENIOR RESIDENT, B-31, 18/1-A, S.K. GUPTA COLONY, LANKA, VARANASI

ABSTRACT

Levofloxacin is a broad spectrum antibiotic of the fluoroquinolone group. Levofloxacin and other fluoroquinolones are generally well tolerated, but in rare instances have produced serious and life-threatening adverse reactions.Here we are reporting a rarest complication of aphasia caused by intravenous infusion of levofloxacin.

Introduction

Levofolxacin is a active levo stereo isomer of oflaxacin and a third generation fluorinated quinolone. It is widely used quinolone in sinusitis pneumonia, urinary tract infection, bronchitis1. Most adverse reactions are mild to moderate; however, on occasion, serious adverse effects occur.[2]. Here we are reporting a unusual case of Aphasia in an old women undergoing hip surgery for fracture intertrochanteric femur.

Case report

87 year old lady was scheduled for Dynamic hip screw (left side) for intertrochanteric fracture femur. Her past medical history was not significant. All her routine laboratory investigations were within normal limits, except ECG, showing T wave inversion in lead II, III, avf with Left axis deviation. ECHO showed LVEF – 60%, Mild TR, Mild diastolic dysfunction, normal systolic function. Tropinin T was within normal limits (<0.010 ng/ml). Her vitals were normal. We planned for sub arachnoid block for the case. After adequate preloading with Ringer Lactate 500ml; Spinal anaesthesia was given using 26 G needle in L3 –L4 space under all aseptic precautions. Intraoperative period was uneventful. Patient was shifted to the post- anaesthesia surgical unit with stable vitals. Treatment as advised postoperatively by an orthopaedician:

- Inj. Cefotaxin with Tazobactum 1 gm BD
- Inj. Amikacine 500 mg BD
- Inj. Levofloxacin 100 ml IV OD
- Inj. Dynapar SOS.

Patients received levoflaxacin infusion near 10:30 PM in about 45 minutes. He developed a rigor which was treated with Inj. Avil I/V and Inj. Dexamethasone, with no other complications. Vitals were within normal limits. Patient was comfortable throughout night. Early morning, relatives noted that patient was unable to speak. Concerning her age, it was thought to be psychological. Hospital staff gave the second dose of levofloxacin .Still the Patient was unable to speak.Neurologist reference was done, but no cause of aphasia was ascertained. We searched in depth about all the drugs advised in post operative period. We found that 41 people (0.77%) cases of aphasia were reported with levofloxacin. No exact pathology of aphasia was given. We immediately stopped levofloxacin infusion (3rd dose). After 12 hours of stopping the infusion, patient started whispering and after 48 hours of stopping the infusion, she regained her voice.

Discussion

Levo floxacin is a chiral fluorinated carboxyquinolone. It is a broad spectrum antibiotic with active ingredient, sodium chloride. It is valued for its broad spectrum activity, excellent tissue penetration and availability in both oral and intravenous formulations 3. It is generally well tolerated, but in rare instances have produced serious and life threatening adverse reactions. Elimination is primarily by renal route. Modification of the dosage is required with impaired liver and kidney function. Adverse effect include peripheral neuropathy , tendon damae , prolonged QT interval, torsade de pointis 4, rhabdomyolysis. Very rarely aphasia can occur. According to eHEALTHMe, 5,335 people reported to have side effects when taking Levofloxacin. Among them, 41 people (0.77%) have Aphasia.

Aphasia from ancient greek (speechlessness) is the disturbance in formulation and comprehension of language5. This class of language disorder ranges from having difficulty in remembering words to being completely unable to speak, read or write. Types of aphasia are given in Table 1.

Table 1: Types of aphasia:

Type of aphasia	Repetition	Naming	Auditory comprehension	Fluency
Receptive aphasia	mild–mod	mild–severe	Defective	fluent paraphasic
Conduction aphasia	Poor	Poor	relatively good	Fluent
Anomic aphasia	Mild	mod–severe	Mild	Fluent
Expressive aphasia	mod–severe	mod–severe	mild difficulty	non-fluent, effortful, slow
Global aphasia	Poor	Poor	Poor	non-fluent

Most acute aphasic patients can recover. Recovery also depends on the aphasia cause, type and severity. Our patient is having expressive aphasia (non fluent)-knowing what meaning to say but not being able to say it with words. According to data of eHealthme, 5335 people reported to have side effects when taking levofloxacin. Among than 41 people (0.77%) have aphasia. **Table 2, 3** shows that incidence of aphasia is more common in elderly males than females.[1]

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Table 2 Gender of people who have Aphasia when taking Levofloxacin :

	Female	Male
Aphasia	31.91%	68.09%

Table 3 Age of people who have Aphasia when taking Levofloxacin * :

	0-1	2-9	10-19	20-29	30-39	40-49	50-59	60+
Aphasia	0.00%	0.00%	2.94%	0.00%	2.94%	11.76%	17.65%	64.71%

No specific cause of aphasia could be ascertained. Our aim to report this case is to make the clinicians aware of this rare adverse effect of levofloxacin, a commonly used antibiotic. In our case symptoms results completely after 48 hours of stopping the drugs.

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