Sir,
Postoperative delirium is a multi-factorial entity, which is associated with significant postoperative complications.[1] A number of drugs can cause mental dysfunction in the postoperative period, fluoroquinolones are one among them. Despite of well documented central nervous system effects of fluoroquinolones, they are rarely suspected as the offending agents. We report a case of postoperative delirium following levofloxacin administration, which was successfully managed.

A middle aged lady with no significant co-morbidities underwent mitral valve replacement. Midazolam, fentanyl, pancuronium and isoflurane were used for general anesthesia. On cardio-pulmonary bypass (CPB), a nonpulsatile flow was maintained, and the mean blood pressure was kept between 65 and 75 mm of Hg. Aortic cross-clamp time was 52 min and total CPB time was 72 min. Postoperative analgesia was maintained with intravenous paracetamol and patient was extubated after 8 h. On fourth postoperative day (POD), patient developed urinary tract infection. Oral levofloxacin 750 mg once daily started empirically, and urine sample was sent for culture. Next morning, the patient was anxious, restless and complaining of sleeplessness. Confusion assessment method for Intensive Care Unit (CAM-ICU) was found to be positive. As per psychiatrist’s advice, tablet clozapine 5 mg twice daily was started. On sixth POD, patient became more drowsy, irritable, restless and agitated. On further investigations, arterial blood gases analysis, transthoracic echocardiography and Computed tomography scan were found to be normal. At last, after excluding both brain and cardio-respiratory abnormalities, we reviewed the patient’s medication chart and stopped levofloxacin. After 24 h of skipping the dose of levofloxacin, patient’s mental condition started improving and had less difficulty in sleeping at night, hence, clozapine was stopped. After 48 h, patient was feeling better, the restlessness and agitation were reduced. For urinary tract infection, cefixime 200 mg twice daily started as per the culture sensitivity report. After 72 h of stopping levofloxacin, the repeat psychiatric assessment found the patient to be alert and oriented, and she was discharged on tenth POD.

Delirium is defined as an acutely altered and fluctuating mental status with inattention and an altered level of consciousness. The incidence of postoperative delirium ranges from 10% to 46% after general surgery and varies from 8% to 52% after cardiac surgery.[2] Cardiac surgery can lead to postoperative cognitive dysfunction due to micro-embolization, brain hypoperfusion, anesthesia, preoperative or postoperative depression and low cardiac output states.

Levofloxacin is L-isomer of ofloxacin; the L-isomer is the active component, which makes levofloxacin more potent.
broad spectrum antibiotic than ofloxacin. Levofloxacin works by inhibiting bacterial topoisomerase IV and DNA gyrase, preventing bacterial DNA replication, transcription, repair, and recombination. Fluoroquinolones antagonizes inhibitory pathways (gamma-aminobutyric acid [GABA]) and stimulates the excitatory pathways (N-methyl-D-aspartate [NMDA], adenosine) leading to excitatory manifestations such as anxiety, restlessness, insomnia, tremor, seizures and hallucinations. According to clinical practice guidelines, delirium is associated with negative clinical outcomes. The baseline risk factors, which are significantly associated with postoperative delirium are: preexisting dementia, hypertension, alcoholism or drug abuse, and severe illness at admission. A number of delirium monitoring tools are there, out of which CAM-ICU and the Intensive Care Delirium Screening Checklist are the most valid and reliable tools in adult ICU patients.

Our patient did not have any baseline risk factors or an intraoperative event. After administration of levofloxacin, patient developed neuropsychiatric symptoms, which improved only after stoppage of levofloxacin.

As delirium in the postoperative period is associated with increased morbidity and mortality, therefore, we recommend:
1. Patients with baseline high-risk factors should be identified.
2. Delirium monitoring tools should be used routinely.
3. To decrease the incidence of delirium, early mobilization should be practiced.
4. Atypical antipsychotics can be used to reduce the duration of delirium.

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