

**Case Report**
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## Delirium And Visual Loss After Intravenous Ondansetron Application in a Pediatric Patient: A Case Report

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**ABSTRACT**

Ondansetron is a selective 5-hydroxytryptamine receptor (5HT-3) antagonist caused by cancer treatment and put into clinical practice as an antiemetic for anesthesia-related nausea and vomiting. Delirium is an organic mental disorder that develops in a short period of time and manifests itself with impairments in various cognitive functions, especially consciousness. In this case report, we aimed to present the patient who presented to the another hospital due to vomiting, who received intravenous (IV) ondansetron treatment, followed by blurred consciousness and vision loss, and to draw attention to the side effects that may occur after ondansetron.

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**Introduction**

Ondansetron is a selective 5-hydroxytryptamine receptor (5HT-3) antagonist that has been put into clinical practice as an antiemetic for nausea and vomiting during cancer treatment and anesthesia. Its use under these conditions is both prophylactic and therapeutic. Compared to other antiemetic groups such as antidopaminergics, antihistamines and anticholinergics, it has superior efficacy, safety and pharmaco-economic profile [1]. Although ondansetron is generally safe, numerous side effects have been identified. There are some common side effects such as headache, dizziness, musculoskeletal pain, drowsiness or sedation, as well as rare side effects such as chills, loss of vision, delirium and cardiac arrhythmias [2-5]. Delirium is an organic mental disorder that develops in a short period of time and manifests itself with impairments in various cognitive functions, especially consciousness [6].

In this case report, we aimed to present the patient who presented to the another hospital due to vomiting, who received intravenous (IV) ondansetron treatment, followed by blurred consciousness and vision loss, and to draw attention to the side effects that may occur after ondansetron.

**Case Report**

A nine-year-old male patient was brought to our clinic because of blurred consciousness, inability to speak properly, communication and visual loss. In his history, it was learned that the patient applied to the another hospital for vomiting, received IV fluids

and ondansetron treatment and had complaints 15-20 minutes after the treatment. Her medical history and family history were unremarkable. The patient's physical examination, shows that confusion, blood pressure 120/80 mmHg, pulse 91 / min, sPO2 98% and fever 36.3 ° C were present. No pathology was found in the other system examinations. Laboratory examination revealed that complete blood count, electrolytes, AST, ALT, urea, BUN and creatinine were normal. Brain tomography (CT) and diffusion magnetic resonance imaging (MRI) were performed for cranial pathologies. No pathology was detected in the imaging. Based on the findings, it was thought that the patient's complaints were due to the side effects of ondansetron. The patient's visual loss disappeared after 55 minutes. At the 6th hour of the follow-up, the patient whose symptoms improved, orientated, cooperative and in good general condition was discharged with recommendations.

**Discussion**

Ondansetron is a serotonin 5HT-3 antagonist mainly used as an anti-nausea and vomiting agent; It is usually applied to patients after chemotherapy, radiotherapy or postoperative. The most well-known side effects are considered a safe drug with constipation, dizziness and mild headache. Ondansetron is metabolized in the liver, excreted in the kidneys and has a half-life of 5-7 hours [10]. When we reviewed the literature, it is generally seen that it causes postoperative delirium [11].

Cherian et al. reported a 36-year-old patient with transient blindness due to postoperative ondansetron use [7]. The mechanism by which ondansetron causes blindness is unknown. Hallucinogens are thought to cause visual disturbances by affecting serotonergic

receptors. 5-HT<sub>3</sub> and specifically, the 5-HT<sub>3A</sub> subgroup receptor has been found to play a role in modulating the retinal signaling pathway. Ondansetron has an effect on this receptor [8, 9].

There were no delirium or vision loss cases after ondansetron use in the literature. Ondansetron treatment was given to our patient for vomiting symptoms due to gastroenteritis, and vision loss and delirium developed 15-20 minutes after the treatment.

In conclusion, caution should be taken after delirium and / or vision loss in children with ondansetron use. Detailed anamnesis should be taken and it should be kept in mind that side effects may occur after ondansetron.

#### **Conflict of Interest**

The authors certify that they have no affiliation with or financial involvement in any organization or entity with a direct financial interest in the subject matter or materials discussed in the manuscript (e.g., employment, consultancies, stock ownership, honoraria).

The regional scientific ethics committee approved the study following the World Medical Association Declaration of Helsinki: Ethical Principles for Medical Research Involving Human Subjects.

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