

Rare Case of Ondansetron Induced Nephritis - A Case Report

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Abstract

This case report depicts about an uncommon presentation of a commonly used drug. Ondansetron a commonly used antiemetic for various reasons and indications is implicated this. This is of importance because to the best of our knowledge this is the first case of nephritis reported with ondansetron. This clinical scenario is of immense clinical importance because this is one of the commonly used drugs and such rare adverse events should be kept in mind for early identification and prompt management of patient.

Keywords: Nephritis • Ondansetron • ADR • Drug induced nephritis

Introduction

Ondansetron the famous antiemetic has its pharmacological property by 5HT₃ blockade or antagonism there is conflicting evidence regarding the effect of ondansetron in kidney some studies suggest that this has protective effect in patients in case of renal failure and also drug induced nephrotoxicity [1,2]. But some studies also suggest that cumulative doses of ondansetron can cause renal derangements. By interfering with certain transporters that might impair their excretion [3,4]. Here we present a case of AIN following ondansetron administration for a case of acute gastroenteritis with vomiting.

Case Description

A 22-year-old male patient came to outpatient department with complaints of diarrhea and vomiting for the past 2 days. Routine investigations were done and they were found to be normal. Patient had normal blood parameters and was treated conservatively with ORS and Ondansetron 4 mg BD. For observation the patient was admitted and on the second day patient complained of oliguria. So, we suspected dehydration initially and electrolytes and renal function test was done. This revealed a striking finding with all electrolytes were normal and the RFT was deranged with a rise in serum creatinine which was two-fold from the baseline admission value. There were no signs of dehydration and the patient appeared normal. This raised our suspicion and we went on repeating the RFT again this also revealed the same. We suggested USG for the patient and this revealed no changes except a mild deranged cortico-medullary differentiation which was non-specific. Patient had no history of intake of herbal medications, nephrotoxic drugs in the near future. In fact, a thorough assessment of his previous medical records revealed that he was in fact not treated with any other drugs for any ailments in the past 3 years. And the next day patient developed rash over his body (Figure 1). Patient also developed anemia and his Hb dropped to 7.5 mg/dl from the baseline value of 11 mg/dl. A clinical diagnosis of acute interstitial nephritis was done. To rule out other causes an autoimmune panel was performed and all turned to be

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negative. Patient was also screened for HIV, HbsAg, anti HCV, Hepatitis A, Hepatitis E, WIDAL and scrub typhus. All turned to be negative. Drug induced AIN was suspected and Naranjo causality assessment was done with a score of 7 which indicates probable drug induced AIN.

Treatment

The patient was discontinued from ondansetron and metoclopramide was given. The patient was maintained with good hydration and the repeat value done after three days showed reduction in creatinine and urea values near to normal. Patients' anemia also improved and his HB improved to 10 mg/dl. After this he was discharged.

Discussion

There are many drugs causing AIN and this is not a rare entity. But ondansetron never features in this list [5]. This is atypical presentation should be noted and the evidence regarding this is contradictory. Ondansetron is undoubtedly excreted by the kidneys but to the best of our knowledge no case of renal toxicity has been reported. But there is evidence that cumulative toxicity can occur in case of administration with some other drugs. The proposed mechanism is that it interferes with MACE transporters in the kidney [3]. This is the only evidence as of now and some other studies also talk about this property of ondansetron [4] (Figure 2). There is also conflicting evidence that this drug has Reno protective effects in some cases [1,2]. But with the evidence from the available literature the proposed mechanism behind this is



Figure 1. Rash developed by the patient.

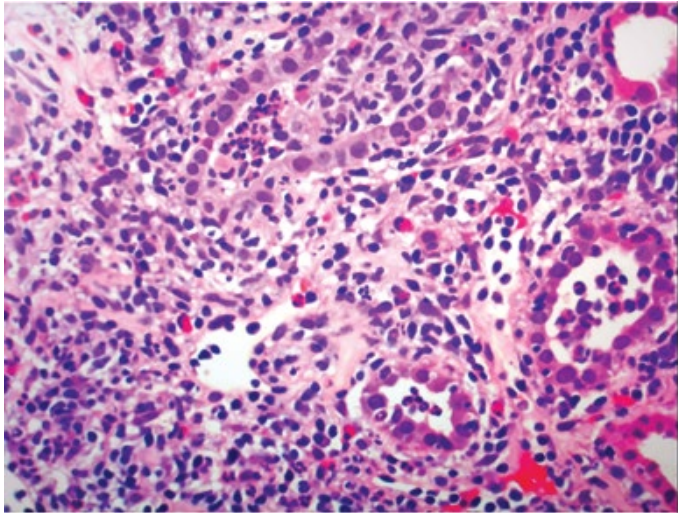


Figure 2. Histopathology report: the specimen is suggestive of inflammatory changes in the interstitial area and polymorphonuclear leucocytes are seen with the history and other findings corroborated this is suggestive of Acute interstitial nephritis.

hard to elicit. And research regarding its unfavorable cumulative toxicity effect is needed to aid the treating physicians for suspicion, proper identification and treatment of such ADR and reported promptly.

Conclusion

This case report has tried to bring the rare adverse effect of AIN which has developed following exposure to Ondansetron and this has to be known by treating physicians and surgeons for proper identification and treatment of these patients since this being one of the commonly used drugs in practice.

Data Availability Statement

Raw Data cannot be disclosed as this includes patients' personal details with high likely that his/her identity may be revealed.

Conflict of Interest

The authors have no conflicting interests. There was no funding received for this report.

Author Contributions

The corresponding author wrote the manuscript the details of the case were provided by the other author and both reviewed the manuscript.

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