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CASE REPORT

Rabeprazole-induced acute interstitial nephritis: A case report

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ABSTRACT

Rabeprazole, a proton-pump inhibitor (PPI), commonly used in the treatment of gastroesophageal reflux disease, a condition caused due to regurgitation of acid from the stomach to the esophagus. Acute interstitial nephritis (AIN) is seen uncommonly even though it is an important adverse effect of these class of drugs. Here, we report a case of a 47-year-old male patient, a known case of peptic ulcer disease since 2 months, now presented with complaints of nausea and abdominal pain. He was on treatment with rabeprazole for the same. At the time of admission, his serum creatinine level (4.86 mg/dl) and blood urea nitrogen (75 mg/dl) were elevated. Ultrasonography showed changes in the renal parenchymal cells, and renal biopsy report was also suggestive of AIN. Rabeprazole-induced AIN was doubted, and thus, the drug therapy was stopped on the day four. He was symptomatically and clinically better after discontinuation of the drug. Using the Naranjo adverse drug reaction scale, we conclude that the probability of the incidence of AIN being induced by rabeprazole is probable (Naranjo probability score was eight). Early diagnosis of the adverse effect due to PPIs is essential for the instant withdrawal of the offending drug and resolution of symptoms.

KEY WORDS: Acute Interstitial Nephritis; Rabeprazole; Gastroesophageal Reflux Disease; Proton-pump Inhibitor

INTRODUCTION

Rabeprazole, a proton-pump inhibitor (PPI), commonly used in the treatment of gastroesophageal reflux disease, a condition caused due to regurgitation of acid from the stomach to the esophagus. Acute interstitial nephritis (AIN) is seen uncommonly even though it is an important adverse effect of these class of drugs. AIN is an inflammatory disease of renal parenchymal cells involving the tubules and interstitial regions of the kidney.[1] AIN is commonly caused due to some autoimmune disorders such as lupus erythematosus, certain infections, and abnormal electrolytes. AIN can also be triggered due to the adverse effect of drugs. More than 100 different drugs can cause this effect.

Histological characterization of tubular interstitial nephritis includes inflammatory changes in the tubulointerstitial compartment, such as leukocyte infiltration, atrophy, accumulation of extracellular matrix proteins, tubular dilation, and interstitial edema. The common side effects of PPIs include hypomagnesemia, thrombocytopenia, and headache. Whenever AIN is suspected during rabeprazole use, the offending drug should be withheld to avoid permanent renal damage.[2,3]

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CASE REPORT

A 47-year-old male patient, a known case of peptic ulcer disease since 2 months, now presented with complaints of nausea and abdominal pain. He was treated with rabeprazole 20 mg opportunistic disorder for gastrointestinal issues. Other medications included thyroxine, propranolol, and

rosuvastatin, and their doses were not changed over a period of 6 months. He had no history of consumption of over the counter or non-prescription medications. At the time of admission, his serum creatinine level (4.86 mg/dl) and blood urea nitrogen (75 mg/dl) were elevated. Blood counts and liver function tests were normal. After 2 days, urine analysis was done which revealed the presence of numerous proteins and granular casts in urine. Ultrasonography was done which showed changes in the renal parenchymal cells.[4] Renal biopsy report was also suggestive of AIN. Rabeprazole-induced AIN was doubted, and thus, the drug therapy was stopped on the day four. The patient was symptomatically treated with methyl prednisolone (1 mg/kg), and the patient's kidney function tests showed gradual improvement (serum creatinine level [2.4 mg/dl]). He was symptomatically and clinically better after discontinuation of the drug and was discharged. Using the Naranjo adverse drug reaction (ADR) scale, we can come to the conclusion that the probability of the incidence of AIN being induced by rabeprazole is probable (Naranjo probability score was eight).

DISCUSSION

AIN is a rare side effect of PPI's. There are very few cases reporting the association between rabeprazole therapy and AIN. The study conducted by Ruffenach et al., in 1992, was the first case reported on PPI-induced AIN.[5] Since then, many cases on PPI-induced AIN were reported. The first case report on rabeprazole-induced AIN was reported in 2005 by Geevasinga et al.[6] Our study has demonstrated a similar finding as that of a case report published in The Medical Journal of Australia 2005. Naranjo ADR probability scale was applied to quantify the degree of association between rabeprazole and AIN, and it was found to be eight.

The exact mechanism of PPI-induced AIN is not clear. It is assumed that the metabolites of the drug either act as haptens or as circulating immune complex, thereby producing hypersensitivity reactions by stimulating the T-cell. Evidence for this is observed as extrarenal manifestation of hypersensitivity reactions (such as rash, arthralgia, and eosinophilia). AIN is a rare complication of PPIs, and greater awareness is needed due to the catastrophic outcome.[6] The main indication of AIN is an inflammatory infiltrate and edema within the renal interstitium. AIN may lead to considerable morbidity, and in some cases, it may even contribute to mortality.[7] The ideal method of therapy is to withdraw the offending drug and provide with supportive management for acute renal impairment, with or without steroid therapy. In this case, after initiating methyl prednisolone, complete recovery of renal function is observed. Due importance should be given for this rare but serious adverse effect since the PPIs used widely. Renal function tests should be done as early as possible in patients who develop non-specific symptoms during PPI therapy. Speedy identification will help in preventing irreversible renal injury.[8,9]

CONCLUSION

Since the link between PPIs and AIN is just emerging, awareness and concern of this potentially serious adverse effect are needed to diagnose drug-induced AIN. Early diagnosis of the adverse effect due to PPIs is essential for the instant withdrawal of the offending drug and resolution of symptoms. It is very essential for clinicians to be aware about this adverse effect because timely diagnosis and drug withdrawal can prevent potentially life-threatening renal failure.

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