**Introduction**

Acute Interstitial Nephritis (AIN) is characterized by an inflammatory infiltrate of kidney interstitium that typically causes a decline in kidney function. AIN is a common cause of acute kidney injury (AKI), accounting for 15-20% of all AKI’s. Possible etiologies of AIN are drugs, infections, autoimmune diseases, with drug-induced interstitial nephritis as the most common. Common drugs associated with AIN are antibiotics and proton pump inhibitors (PPIs). A known adverse effect of PPIs is AIN, with omeprazole showing a prevalence of 6 per 10,000. A definitive diagnosis of AIN is made by kidney biopsy.

**Case Presentation**

A 59-year-old male s/p laparoscopic robotic sleeve gastrectomy and hiatal hernia repair presented with fatigue, dizziness/lightheadedness, and abnormal outpatient labs showing elevated creatinine and anemia. The patient had gastric surgery 8 weeks prior and started taking Omeprazole 20mg PO once daily after surgery. The physical exam was unremarkable.

**Biopsy Results**

- Eosinophils
- Neutrophils
- Lymphocytes

**Clinical Course**

**Initial Management**
- Initially thought to be a pre-renal AKI due to dehydration and poor oral intake after surgery
- Creatinine improved to 3.91 after administering IV fluids
- Creatinine increased to 4.05 the following day, and a renal biopsy was scheduled

**Figure 2. Creatinine trend during hospitalization.** Day 0 is the value from outpatient lab work. The patient was discharged on day 6 (green arrow). Day 7 (black arrow), marks the completion of 7-day Prednisone course.

**Figure 3 (Top Left), Figure 4 (Top middle).** Glomeruli are normal with open loops and smooth capillaries. Background shows diffuse interstitial edema with inflammatory infiltration.

**Figure 5 (bottom left).** Inflammatory reaction with lymphocytes and neutrophils, rare eosinophils.

**Figure 6 (bottom right).** Focal tubulitis, neutrophils are seen in the tubules with epithelial cell injury.

**Discussion**

- The first case of omeprazole-associated acute interstitial nephritis was reported by Ruffenach et al. in 1992.
- It is well documented that AIN is an adverse effect of proton pump inhibitors and should be considered in the differential diagnosis of an AKI patient on medications known to cause drug-induced AIN.
- AIN can be difficult to diagnose, presenting with nonspecific symptoms such as oliguria, malaise, nausea, and vomiting. Physician awareness can increase early recognition of this hypersensitivity reaction. An accurate and timely diagnosis can help prevent worsening renal failure.
- Consider the diagnosis in a patient with increased creatinine and a urine analysis showing WBC and eosinophiluria. Diagnosis is confirmed with biopsy.

**Management after biopsy:**

The patient received an initial IV dose of Methylprednisone 40mg and completed a 7-day course of Prednisone 40mg PO.

**Sources**