GRANULOMATOUS INTERSTITIAL NEPHRITIS SECONDARY TO CARBAMAZEPINE CAUSING ACUTE RENAL FAILURE

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Granulomatous interstitial nephritis (GIN) is a specific subtype of interstitial nephritis that is present in 0.5% to 0.9% of native kidney biopsies. Thus, GIN is a rare histologic finding and has been associated with medications, infections, sarcoidosis and Wegener's granulomatosis. Common medications causing GIN include antibiotics, non-steroidal anti-inflammatory drugs, allopurinol, diuretics and anticonvulsants.

We present the case of a 77-year-old male with past medical history of hypertension, hypothyroidism and seizure disorder, who came with one week history of nausea, vomiting and decreased urine output. About two months prior to presentation, he was started on carbamazepine for his seizures. Physical examination was remarkable only for bilateral basilar crackles. Laboratory data showed normal white cell count with slightly increased eosinophil count, normal hemoglobin, blood urea nitrogen 132 mg/dl, and creatinine 9.4 mg/dl (baseline 1.1, 3 weeks ago). Urine analysis showed 3+ protein and spot urine protein to creatinine ratio was 2.43. He required dialysis soon after presentation. Percutaneous biopsy of the kidney showed extensive interstitial non-caseating granulomatous inflammation with eosinophils. Patient also developed a maculopapular rash all over his trunk during hospital stay. CT scan of the chest failed to show any hilar lymphadenopathy or pulmonary infiltrates. Based on the clinical presentation, temporal association with carbamazepine, and biopsy findings, the diagnosis of carbamazepine induced GIN was made. Carbamazepine was stopped and he was switched to Zonisamide for seizure control. Patient was started on prednisone, which dramatically reversed his acute renal failure, and he came off of dialysis within 4 weeks. After one year of presentation he retains his normal kidney function.

In conclusion, we present a case of GIN due to carbamazepine requiring renal replacement therapy, which is rare, but a recognized severe complication of carbamazepine.