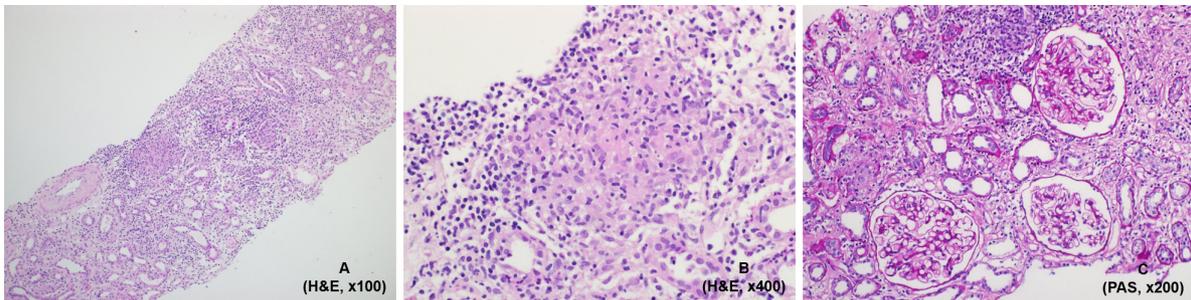


## Rabeprozole- Induced Granulomatous Interstitial Nephritis

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Granulomatous interstitial nephritis (GIN) is a rare histologic property in kidney biopsy cases. GIN is known to be associated with sarcoidosis, infections, and drugs. While there have been some recently reported cases of acute interstitial nephritis related to the use of proton-pump inhibitors (PPIs), those linked to GIN are quite rare. We report on a case of GIN in a patient treated with rabeprazole, which is a PPI that is used frequently in Korea. A 67-year-old man was referred to our hospital with azotemia (serum creatinine 2.02mg/dL), which was discovered during a routine health check-up. He was relatively healthy, and his estimated GFR (MDRD) and urinalysis were within normal range a year ago. Prior to this exam, the patient was prescribed rabeprazole for dyspepsia and reflux symptoms. He underwent an exam after taking rabeprazole for two weeks. His initial serum blood urea nitrogen and serum creatinine levels at our hospital were 26.4mg/dL and 2.06mg/dL, respectively. His urine protein creatinine ratio was 0.226mg/g. His serologic tests were negative for MPO-ANCA and PR3-ANCA, but his ANA was weakly positive (39.22 IU/mL). However, additional tests for C3, C4, anti-double strand DNA antibody, and other autoantibodies were all within the normal range. Both kidneys were enlarged on ultrasonography. Renal biopsy reported non-necrotizing GIN with acute tubular necrosis (Figure 1A, 1B, 1C). The result of the tuberculosis/nontuberculous mycobacteria detection PCR test was negative. Electron microscopy showed wrinkled GBMs with mild widening of subendothelial electron-lucent zones. Immunofluorescences for IgG, IgA, IgM, C3, C4, C1q,  $\kappa$ , and  $\lambda$  light chains showed no deposits. The patient discontinued rabeprazole. However, his renal function deteriorated slowly. At 6 months after a kidney biopsy, his serum creatinine level was elevated to 4.2mg/dL. Methylprednisolone (0.4mg/kg/day) treatment was initiated, and his serum creatinine level improved gradually from 4.49mg/dL to 1.44mg/dL over 6 months (Table 1). In conclusion, it is important to monitor for renal problems, such as GIN, when using PPIs, such as rabeprazole, to treat gastric conditions.



	WBC (/ $\mu$ l)	Hb (g/dL)	BUN (mg/dL)	Creatinine (mg/dL)	MDRD-eGFR (mL/min/1.73m <sup>2</sup> )	Cystatin-C (mg/L)	Potassium (mEq/L)	Urine protein/creatinine ratio (UPCR)	
Kidney biopsy	2019-06-27	7340	11.0	26.4	2.06	34.5	1.97	4.07	0.226
	2019-07-02	5440	10.7	31.0	2.18	32.4	-	4.76	-
	2019-08-14	7750	10.4	25.6	2.33	29.8	2.28	3.38	0.214
	2019-10-10	7230	10.7	36.4	3.24	20.4	2.55	4.21	0.449
Methylprednisolone	2019-12-12	6220	10.2	45.8	4.49	14.0	2.92	3.84	0.603
	2020-01-09	6700	9.8	37.4	4.31	14.7	3.07	3.66	0.773
	2020-01-23	9630	11.0	36.2	2.66	25.7	2.71	4.40	0.428
	2020-02-13	11280	11.6	43.5	2.09	33.7	2.78	4.30	0.228
	2020-03-12	11190	11.7	29.7	2.00	35.6	2.31	4.70	0.091
	2020-04-09	10910	12.0	34.0	1.87	38.5	1.95	4.52	0.089
	2020-05-14	11380	12.1	31.7	1.91	35	1.92	3.58	0.078
	2020-06-18	10120	12.1	31.7	1.89	36	1.91	3.72	0.080
	2020-07-22	10270	12.9	30.8	1.44	49	1.77	3.35	0.141