

Abstract: FR-PO896

## **Oxalate Nephropathy Due to Enteric Hyperoxaluria in the Renal Allograft: A Case Series**

### **Session Information**

- Transplantation: Translational and Transplant Pathology October 26, 2018
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### **Background**

Secondary hyperoxaluria due to enteric causes is an underrecognized cause of renal allograft injury and loss. We present a single center case series of oxalate nephropathy in kidney transplant (KTx) patients due to enteric hyperoxaluria (EH).

### **Methods**

Cases of oxalate nephropathy based on pathological description from 2008 to 2018 were ascertained. Cases of primary hyperoxaluria were excluded. Clinical risk factors for EH, serum and urine oxalate levels around the time of the biopsy, treatment, and allograft outcomes were analyzed.

### **Results**

Fifteen cases of oxalate nephropathy were identified. Median follow-up was 3.0 years (range 0.4 to 8.6 years). Median time from transplant to allograft biopsy showing oxalate nephropathy was 104 days (range 14 days to 8.6 years). The most common pre-Tx risk factors for EH included short bowel syndrome (27%) and gastric bypass (13%). Post-Tx risk factors included chronic diarrhea (33%) and frequent antibiotic use (27%) with presumed altered gut flora. Median serum oxalate was 13.4  $\mu\text{mol/L}$  (range 2.7 to 37.5 [normal 0.4 to 3]) and median 24-hour urine oxalate was 97.7 mg/24 hours (range 40.5 to 121.2 [normal 9.7 to 40.5]). The predominant treatment was a low oxalate diet, increased oral fluids (93%), coupled by dietician counseling (87%) and calcium supplementation (93%). At last follow-up, 6 patients had  $\text{GFR} < 45 \text{ml/min}$ , 4 had  $\text{GFR} < 30 \text{ml/min}$  and 4 were on dialysis. [Table1]

### **Conclusion**

Enteric causes of hyperoxaluria in KTx patients can be attributed to pre and post-transplant risk factors. Oxalate nephropathy due to EH in KTx patients is an important cause of allograft failure and warrants a standardized approach for early detection and treatment approach tailored for patients' unique risk factors.

Table 1: Summary of identified renal transplant oxalate nephropathy cases.

Case	Risk Factors	Management	HD at Time of Biopsy	GFR at Last Follow-up
1	Crohn's disease, short bowel syndrome	IVF, low oxalate diet, calcium, pyridoxine	No	27
2	Chronic diarrhea, diabetic gastroenteropathy, vitamin C, frequent antibiotic use for recurrent UTI	Hydration, low oxalate diet, calcium	No	24
3	High oxalate diet, frequent antibiotic use for recurrent UTI	Hydration, low oxalate diet, calcium, potassium citrate	Yes, DGF	36
4	Gastric bypass, diabetes, chronic diarrhea	Hydration, low oxalate diet, calcium	No	47
5	Short bowel syndrome	Hydration, low oxalate diet, calcium	No	17
6	Frequent antibiotic use, diabetes	None	Yes, DGF	32
7	Chronic diarrhea, diabetic enteropathy	Hydration, low oxalate diet, calcium, GI consult, cholestyramine	No	HD
8	Short bowel syndrome	Hydration, low oxalate diet, calcium, potassium citrate, GI consult	No	25
9	Cholestasis, diabetes	Hydration, low oxalate diet, calcium	Yes, DGF	38
10	Chronic diarrhea, diabetes	IVF, low oxalate diet, calcium, probiotic, GI consult	No	32
11	Chronic diarrhea, diabetes	Low oxalate diet, calcium	No	HD
12	Chronic pancreatitis, diabetes	Hydration, low oxalate diet, calcium, potassium citrate, pyridoxine, pancreatic enzymes	No	32
13	Bowel resections, gastric bypass, diabetes	Intensified HD, low oxalate diet, calcium	Yes, primary non-function	HD
14	Diabetes, frequent antibiotic use for recurrent UTI	Hydration, low oxalate diet, sodium citrate	No	HD
15	Gastric bypass, chronic diarrhea	Hydration, low oxalate diet, calcium, potassium citrate, probiotic, changed MM to azathioprine.	No	35

Delayed graft function (DGF); Gastroenterology (GI); hemodialysis (HD); intravenous fluids (IVF); mycophenolate mofetil (MM); urinary tract infection (UTI)