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CALCIFIC UREMIC ARTERIOLOPATHY IN A TRANSPLANT PATEINT WITH A FUNCTIONING GRAFT; AN UNUSUAL PRESENTATION.

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Calcific uremic arteriolopathy (CUA), also known as calciphylaxis is a rare but often fatal syndrome of ischemic necrosis of the skin and adjacent tissues due to medial calcification and intimal hyperplasia of small vessels. It is thought to occur in patients with advanced CKD, and ESRD due to associated secondary hyperparathyroidism and increased calcium- phosphorus (ca-phos) product. We report a case of CUA in a renal transplant recipient with good allograft function and normal ca-phos product.

A 60 year-old African American lady with history of DM, HTN, lupus with anti-phospholipid antibody related DVT on Coumadin, status post deceased donor kidney transplant in 2013,presented to hospital with urinary tract infection and ulcers over back of her thighs and firm non ulcerated nodular lesions in front of her thighs. Her laboratory findings were as follows: Creatinine (Cr.) 0.7mg/dL, Calcium 10.2 mg/dL, Phosphorus 1.1 mg/dL, Parathyroid hormone 217 pg/mL, and 24 hour urine Cr. Clearance of 40 mL/min. Her medications were: Prednisone, Tacrolimus, Cellcept and Coumadin. Dermatology biopsied the lesions which showed medial calcification of small vessels that confirmed diagnosis. CUA is typically seen in patients with severely reduced renal function and abnormal ca-phos product, which were absent in our case. Review of literature suggested that Coumadin can be an inciting factor for CUA, she was switched to low molecular weight heparin and was started on I.V. Sodium Thiosulfate three times weekly with wound care.

CUA is a rare syndrome with high morbidity and mortality. It usually presents in advanced CKD, ESRD, patients with high ca-phos product and secondary hyperparathyroidism. This complex syndrome can also present in transplant patient with relatively good kidney function and normal ca-phos product, especially with concomitant use of warfarin. High index of suspicion and prompt diagnosis and treatment are needed to avoid patient death.

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HEMODIALYSIS IN REFRACTORY HYPONATREMIA WITH NORMAL RENAL FUNCTION PRIOR TO LIVER TRANSPLANTATION

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Hyponatremia is a common problem in cirrhotic, but can prevent liver transplantation due to a known complication of osmotic demyelination syndrome in perioperative period. Most transplant surgeons prefer a serum sodium level of 125mmol/L or higher prior to transplant.

Our patient is a 47 year old male with alcoholic cirrhosis with a model for end stage liver disease score (MELD) of 26, recurrent ascites, chronic hyponatremia (baseline 115 mmol/L) who presented with enterococcus peritonitis and hypoosmolar hypervolemic hyponatremia with a serum sodium of 103 mmol/L, urine sodium < 20 mmol/L, and serum creatinine of 1.0 mg/dL. Patient failed to reach a sodium level of 125 mmol/L despite optimization of intravascular volume status with fluid restriction, IV albumin, and frequent large volume paracentesis. Patients' hyponatremia prevented liver transplantation despite other factors making him the highest priority on transplant list. Hypertonic saline (requiring ICU stay), transjugular intrahepatic portosystemic shunt, and peritoneovenous shunts were considered, but due to associated morbidity and potential delay in transplantation, we initiated hemodialysis to manage his hyponatremia . Patient tolerated dialysis to maintain serum sodium level at around 130mmol/L until he successfully underwent a liver transplant in few days.

Hemodialysis to correcting refractory hyponatremia prior to liver transplantation should be considered, even in the setting of normal kidney function, due to potential time and cost effectiveness.

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WHAT IS THE UTILITY OF ROUTINE RENAL ULTRASOUND IN THE EVALUATION AND MANAGEMENT OF ACUTE KIDNEY INJURY IN HOSPITALIZED PATIENTS?

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Evidence shows that routine renal sonogram in patients with acute kidney injury (AKI) without history suggestive of obstructive uropathy to look for correctible causes is not indicated. Yet clinicians routinely check renal ultrasounds in such patients. The aim of this study is to determine the utility of routine renal sonogram in the evaluation and management of AKI in hospitalized patients. We hypothesized that routine renal sonogram in the evaluation of AKI in hospitalized patients is of low yield and likely does not impact management.

Under IRB approval, we reviewed all renal sonograms performed in our institution during a 3 year period on inpatients for evaluation of AKI. We included adult medicine inpatients admitted with a non-urologic diagnosis. We excluded patients with signs/symptoms/history of obstructive uropathy/urologic stents, contraindication to Foley catheterization, and poor study quality. Using the electronic medical record, we recorded sonogram findings, any change(s) in management as a result of the sonogram findings and hospital course. Sonographic reports were reviewed for the presence or absence of hydronephrosis, and other significant incidental findings.

One hundred renal ultrasound studies performed on 100 patients meeting criteria were included in the study. Five studies were positive for hydronephrosis, of which only 1 required an intervention. Routine renal ultrasound did not change management in 99/100. Incidental findings not immediately affecting patient care including mostly renal cysts and structural changes due to chronic kidney disease were identified in 56 patients.

In hospitalized patients with AKI and no history or physical findings suggestive of obstructive uropathy, routine renal sonography is unlikely to change management.

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USE OF POTASSIUM SPARING DIURETICS TO ADDRESS HYPOKALEMIA IN PATIENTS ON PERITONEAL DIALYSIS

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Hypokalemia is a common and dangerous problem in end-stage renal disease (ESRD) patients on peritoneal dialysis (PD). Oral potassium supplements (OPS) are used to achieve normal serum potassium (K +) level, however they have limited palatability. Potassium-sparing diuretics (KSD) (spironolactone, amiloride) may be effective in these patients and may help normalize K+ level with the lower dose of OPS.

We have performed a cross-sectional review of 75 current or past ESRD patients who were on PD for more than 6 month, with regard to serum potassium K+, OPS and KSD utilization. We reviewed charts for multiple clinical and laboratory variables, including dialysis adequacy, residual renal function, nutritional status and co-existing medical condition and treatment. The cohort consisted of 75 patients with ESRD on PD for 28.2 (24.3) month, mean age 49.2 (SD=14.7) and overweight with body mass index of 29.5 (6.7) kg/m2; 57.3% were females, 73.3% African-American and 48% diabetic. Weekly Kt/V was 2.12 (0.43), creatinine clearance was 73.5 (33.6) L/week with total exchanged volume 10.8 (2.7) L. Residual urine output (RUO) measured 440 (494) mL and 30.6% patients were anuric. Three-month average serum K+ measured 4 (0.5) mEq/L, 36% of participants were taking K+ supplements (median: 20 [0;20] mEq/day) and 41.3% were taking KSD (spironolactone dose: 25-200 mg/day; amiloride dose: 5-10 mg/day). Potassium correlated positively with weekly Kt/V (p=0.039) and PD vintage (p=0.018) but not with PD modality, exchange volume, RUO or KSD use. KSD use was associated with decreased use of OPS (r: -0.646; p<0.0001).

Patients on PD frequently develop hypokalemia and require OPS that have limited tolerance due to their side effects including dyspepsia, nausea, vomiting and diarrhea. Our study concluded that KSD are well tolerated and decrease the need for OPS.