

41

HYPERCALCEMIA OF IMMOBILIZATION IN RENAL FAILURE— A CASE REPORT

Kalyani Chandra, Andrew Chin, University of California Davis Medical Center, Sacramento, CA, USA

Case Presentation: A 45-year-old black male was admitted with multiple gunshot wounds, and underwent extensive surgical interventions. He had recurrent acute kidney injuries secondary to tubular injury. After 22 weeks, he was noted to have hypercalcemia >10.5mg/dl (peaked at 13mg/dl), with poor response to hydration. Labs revealed low serum PTH and Vit D levels, hypercalciuria, slightly elevated PTHrP level, elevated bone turnover markers (urine NTX and serum CTX), abnormal SPEP with faint IgG lambda monoclonal protein, normal cortisol, TSH and UPEP. He was diagnosed with hypercalcemia of immobilization vs indolent malignancy. He was treated with calcitonin, as bisphosphonates were contraindicated. He is planned to receive denosumab for long-term therapy.

Discussion: Severe hypercalcemia is treated with fluid repletion and bisphosphonates +/- calcitonin. Calcitonin is rapid acting, used in conjunction with bisphosphonates, in severe cases. Bisphosphonates are very effective, but their use is limited by side-effect profile and availability. Diuretics have role only in volume overload. Denosumab has been used in both malignancy and immobilization related hypercalcemia, but needs close monitoring, to avoid severe hypocalcemia. Denosumab is the agent of choice in this case, considering the renal failure and possibility of malignancy.

42

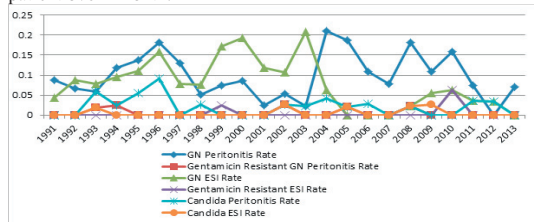
EXIT SITE GENTAMICIN PROPHYLAXIS DOES NOT INCREASE PD RELATED GENTAMICIN RESISTANT (GR) INFECTIONS.

Shan Shan Chen, Heena Sheth, Beth Piraino, Filitsa Bender, University of Pittsburgh School of Medicine, Pittsburgh, PA, USA

Daily use of Gentamicin (gent) cream exit site (ES) prophylaxis reduces gram negative (GN) PD infections. There is concern about the potential for increased candida and GR PD related infections. This study evaluated the impact of gent ES prophylaxis on PD infections.

Data was collected prospectively on PD patients at a single center from 1/1/91- 12/31/13 as part of an IRB approved registry. ES prophylaxis protocols used during the study period were: daily ES mupirocin (1999-2001), RCT of ES mupirocin vs gent (2001-2004) and ES gent (2004-2013). Peritonitis, ESI, GR GN and candida PD related infections were examined.

Baseline demographics: 473 PD patients, mean age 51.3 yr±15.8, 54% women, 22% African American, 36% DM, Charlson Comorbidity Score 5 (2-14), albumin 3.54 g/dl ± 0.58. GN peritonitis rate was 0.1 and GN ESI rate 0.08 episodes/yr. GN ESI decreased after the start of use of gent prophylaxis (p<0.015). There were 5 and 3 GR GN peritonitis and ESI respectively over the 23yrs. Three of 5 GR GN peritonitis and 2 of 3 GR GN ESI episodes occurred while using gent prophylaxis over more than 10yrs. The 2 GR GN ESI were in one patient over 1month.



Daily gentamicin ES prophylaxis was not associated with a high incidence of GR GN or candida PD related infections. GN ESI rate decreased but GN peritonitis did not.

43

LUPUS RELATED POLYAUTOIMMUNITY IN MEMBRANOUS GLOMERULOPATHY: Justin Chen, Christina Ortega-Chen, Jose A. Morfin, Division of Nephrology, University of California, Davis Medical Center, Sacramento, CA, USA

Systemic lupus erythematosus (SLE) is frequently associated with autoimmune thyroid disease (AITD) and other polyautoimmunity (PAI) disorders, including a spectrum of glomerular diseases classified by the Renal Pathology Society (RPS) and International Society of Nephrology (ISN).

A 23 year-old African American woman with a history of primary membranous glomerulopathy (PMG) and Grave's disease presents to our medical center with left periorbital edema with purulent discharge and restricted extraocular movements. Two years prior, she developed nephrotic syndrome in the setting of suboptimal management of her AITD. She was diagnosed with PMG based on a kidney biopsy (#1) demonstrating localization of IgG4 subtype on basement membrane and lack of histologic features to suggest a secondary process, including negative ANA and dsDNA. Thus she was managed conservatively without immunosuppression, continuing methimazole for overactive thyroid disease. On this hospitalization, she was found to have a left pre-septal abscess which was treated with antibiotics and surgery. Labs were most notable for a serum creatinine of 2.09 (baseline 0.7). The urinalysis demonstrated large blood and protein, with urine microscopy revealing dysmorphic RBC's and RBC casts. Serologic workup revealed an ANA titer ≥1:640 and positive dsDNA. Urine protein/creatinine ratio was greater than 3.5g/day and serum albumin was 1.5g/dL. A repeat kidney biopsy (#2) revealed active RPS/ISN class IV lupus nephritis. Given these findings, she was started on steroids and mycophenolate mofetil once she was infection-free.

To our knowledge, this is the first case report to potentially link PAI as a mimicker of PMG as suggested by biopsy #1 before the diagnosis of SLE. It is unclear whether this was a "tip of the iceberg" observation before the diagnosis of SLE or an independent anti-APL2R related autoimmune disease. AITD and SLE can co-exist as well as other forms of autoimmune disease, thus it is critical to be aware of these links to identify SLE before further and more advanced complications are clinically evident.

44

NOVEL UV LIGHT SYSTEM FOR DISINFECTION OF PERITONEAL DIALYSIS CATHETER CONNECTIONS

Niaz Banaei¹, Czarina Calayan¹, Justin Lance², Julia Rasooly¹, Jim Kermod¹, Glenn M. Chertow¹, ¹PuraCath Medical, Mountain view, CA, ²Phoenix deVentures, Morgan Hill, CA

Background

Peritonitis is a major clinical complication associated with peritoneal dialysis (PD) and is associated with significant morbidity and technique failure. The aim of this in vitro study is to determine the anti-microbial effect of a novel UV light disinfection system on the inactivation of microorganisms within the fluid path of peritoneal dialysis connections.

Methods

The fluid path of Y-set connectors and transfer catheters were treated with isopropyl alcohol (IPA) then dosed with 25µl of an inoculum containing *S. aureus*, *S. epidermidis*, *E.coli*, *P. aeruginosa*, or *C. albicans*. After connecting the inoculated transfer catheter to the Y-set, the fluid path was briefly flushed and exposed to UV light (UVC exposure = 254nm for 15 seconds). Positive, negative and inoculant controls were also performed. Following UV exposure, a dialysate flush was collected from each paired connection, diluted, plated and cultured overnight at the appropriate temperature. 10 samples were utilized for each test group with a single sample for each control. The log reduction in bacterial growth for each test group was then determined.

Results

The test system provided a significant log reduction of all species; *S. aureus* (Mean 5.4log₁₀), *S. epidermidis* (Mean 5.0log₁₀), *E. coli* (Mean 4.7log₁₀), *P. aeruginosa* (Mean 4.3log₁₀) or *C. albicans* (Mean 3.6log₁₀).

Conclusions

This in vitro study confirms that the use of UV light in combination with IPA and a dialysate flush results in a significant reduction in bacteria. Combining a UV light delivery system with IPA and a flush-before-fill method in Y-set systems may permit a reduction in the risk of peritonitis in PD patients.