Divine Intervention Episode 53 Comprehensive USMLE Step 1 Renal Review (Session 2 of 3)

...

Some PGY1

1

Region of the kidney most susceptible to infarction in the setting of systemic hypotension. Trace the pathway of urine to the outside world starting from the glomerulus. The 2 types of nephrons. Shared anatomical characteristic between the kidneys and the ureters, pancreas, and ascending/descending colon.

A 53 yo M with Stage 5 CKD is being considered for renal transplantation. A HLA matched donor has been found. To ensure optimal transplant outcomes, what is the preferred donor kidney?

2

58 yo F presents with a 6 mo history of urinary urgency and frequency. She cannot make it to the bathroom in time before she pees on herself. Urodynamic studies are notable for a post void residual of 50 ml. Dx? Buzzword pathophysiology? 2 pronged tx strategy (pharmacology). Classic exam demographic?

What would your dx be in a patient with constant urinary dribbling and a PVR of 400 ml? Buzzword pathophysiology? Classic demographic? Pharmacological mgt?

60 yo F that loses urine with coughing or sneezing. Dx, buzzword/detailed pathophysiology, screening test, tx w/anatomical correlate, MCC in men

3

15 year old male is brought to the ED with a CC of severe headache. VS are notable for a BP of 180/110. Labs are notable for a K of 2.3, Na of 149, and a pH of 7.52. He recently consumed large amounts of a legume that was brought by a friend from India. Dx? Pathophysiology? Dx testing involving an analysis of urine? Genetics? Tx strategies? How would this be differentiated from Conn's syndrome lab wise?

Comparing renin and aldosterone levels in Bartter's, Gitelman's, Conn syndrome, RAS/FMD, Renin secreting tumor.

4

Ca balance in CKD (Ca, P, PTH, and Vit D levels, + pathophysiology, + Tx). Acid base balance in CKD (+ effects on bone). Hb of 8 in a patient with CKD (pathophysiology, tx)? Chest pain worsened with supination and relieved with sitting upright in a patient with CKD (dx, potential pathophysiology)? Bleeding in a patient with CKD (pathophysiology, tx, what would coagulation labs show?). MCC of CKD in the US. 2nd MCC. Pharmacologic protection of the kidneys in CKD. Tx of CKD. Wide QRS + Peaked T waves in a patient with CKD. Mgt of severe uremia.

5

Peaked T waves + rising Cr in a patient receiving R-CHOP for some hematologic malignancy. Dx? How could this have been prevented (3)? Reducing the nephrotoxicity associated with cisplatin. 2 HY antibiotic classes implicated in the etiology of acute tubular necrosis.

A 26 yo F who is 2 days postpartum is found to have large amounts of blood in her foley catheter by the rotating med student. Her pregnancy was complicated by abruptio placentae requiring an emergent C-section. The patient has a hx of poor prenatal care and daily use of cocaine during the pregnancy. Dx? Potential pathophysiology? Classic presentation. What would “heme labs” indicate in this patient?

6

Given the following clinical presentations, what is the most likely “pathognomonic finding” on urinalysis?

27 year old male smoker presents with a 3 week history of hematuria and hemoptysis. PE is notable for extensive sinusitis.
28 yo M recently started on Empagliflozin for T2DM presents with a 12 hr history of severe L sided flank pain. A PE is notable for CVA tenderness.
15 yo F with no relevant PMH was found 3 days after she got lost in a desert.
55 yo F with rising creatinine after receiving a 30S inhibitor for the treatment of a life threatening Pseudomonal infection.
45 yo chronic alcoholic found down on the street by police. His core temperature is 91. His Cr is 7 and K is 6.
44 yo HIV+ M comes to his PCP with complaints of a 3 mo hx of “swelling everywhere”. PE is notable for generalized anasarca. His serum albumin is 2.
22 yo F recently started on Dicloxacillin for mastitis presents with a 3 day hx of a generalized upper body rash. Her T is 102.1.

7

What would the classic USMLE hand XR finding be in a patient on dialysis with a history of Stage 5 CKD? Differentiating b/w secondary and tertiary hyperparathyroidism in CKD. Treating problems with Ca balance in patients with CKD. Mechanism underlying chronic, severe bone pain in a patient with a long history of CKD. How is tertiary hyperparathyroidism treated specifically?

8

Hemoptysis + Hematuria + UA revealing RBC casts + Cr of 5 in a 25 yo M smoker. Dx? Pathophysiology? Dx testing? Classic finding on dx testing? What is the immunological relationship between this process and autoimmune hemolytic anemia? Tx strategies? Is there a hematologic procedure that could rapidly remove the inciting agent of this disorder? Is this disorder a kind of nephrotic or nephritic syndrome?