13

NEPHROLOGY AS A CAREER CHOICE – TRENDS FROM URBAN TEACHING HOSPITALS

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The impact of residency training on a physician's decision to pursue nephrology as a career is not well studied. We surveyed 75 residents across 3 urban teaching hospitals to analyze trends of career choices among internal medicine (IM) residents. The survey questions included training year, gender, career path (IM versus subspecialty), potential factors affecting interest in nephrology, and exposure to renal patients in outpatient/inpatient setting. Results were obtained via web and paper-based surveys distributed during requisite resident conferences. Z test and Pearson correlation analyses were performed.

Among responders, those interested in pursuing subspecialty path were significantly greater than those interested in general medicine path (76.6% vs 23.4%, z=-5.9, p=0.00). A significant decline occurred in the number of residents interested in nephrology at the beginning of their medicine training versus those who subsequently intended to pursue nephrology as a career (29.7% vs 7.8% z=3.2, p=0.001). Compared to nephrology, there was a greater interest in the number of residents interested in pursuing cardiology (19% vs 7.8%, z=-1.8, p=0.03) and hospitalist medicine (22% vs 7.8%, z=-2.2, p=0.01). Differences among other career choices and nephrology were non-significant.

Notably, a difference existed between the number of residents with clinical exposure to nephrology versus those without significant exposure (29.7% vs 70.3%, z=-4.5, p=0.00). Clinical exposure to nephrology was defined by outpatient and inpatient nephrology rotations. There was a significant correlation between interest in non-nephrology career choices and lack of clinical exposure to nephrology (r=.3, p=0.03), as well as lifestyle/financial factors (r=-0.3, p=0.04).

Our results indicate a possible decline in interest in nephrology as a career choice in the course of residency training and may be associated with factors including lack of clinical exposure, lifestyle/financial considerations and greater interest in other subspecialties. Larger multi-center studies with broader geographic scope need to be done in this regard.

14

PROLIFERATIVE C4 DENSE DEPOSITION DISEASE CONCURRENT WITH ACUTE THROMBOTIC MICROANGIOPATHY IN AN ADULT PATIENT WITH ACUTE RENAL FAILURE

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Dense deposit disease (DDD) is rare and affects only a few patients per million. Historically, DDD was considered a subgroup of membranoproliferative glomerulonephritis (MPGN type II). It has recently been classified as a C3 glomerulopathy characterized by predominant C3 accumulation and abnormal alternative complement pathway regulation.

We present a novel case of DDD concurrent with acute thrombotic microangiopathy (TMA) in a 54 year old Caucasian male which demonstrated that the dense deposits can be associated with an abnormality other than alternative complement dysregulation.The patient presented with acute renal failure and a renal biopsy revealed segmental highly electron dense intramembraneous deposits and large rounded mesangial electron dense deposits consistent with DDD, in addition to glomerular and vascular thrombosis consistent with concurrent acute TMA. Surprisingly, immunofluorescence did not show C3 staining in the non-sclerotic glomeruli, excluding C3 glomerulopathy. Instead, there was dense staining for C4d along the glomerular capillaries suggesting C4 dense deposit disease. Alternative complement pathway activity was normal.

To our knowledge, this is the first reported case of DDD concurrent with TMA. One previous case of C4 DDD had been reported in an adolescent female (NEJM 370:1469) and our case demonstrates it can occur in adults. The two cases suggest that the rare C4 DDD needs to be distinguished from C3 glomerulopathies.

15

IgD MULTIPLE MYELOMA PRESENTING AS LIGHT CHAIN NEPHROPATHY WITH ACUTE TUBULAR NECROSIS

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IgD Myeloma is the least common of the five major subtypes of Multiple Myeloma. The renal involvement in IgD Myeloma carries the worst prognosis for recovery compared to other subtypes. We present a case of IgD Myeloma presenting as Acute Tubular Necrosis (ATN).
A 50-year-old man presented with 6 months of nausea, vomiting, diarrhea and abdominal pain. The patient reportedly lost over 40 pounds. He also reported decreased urination for several months. Physical exam was significant for rough skin with a mild jaundice.

Initial workup including a CBC and CMP were significant for hemoglobin of 4.9 mg/dL, creatinine of 18.8 mg/dL and blood urea nitrogen (BUN) of 157 mg/dL. We started the patient on dialysis. Renal biopsy showed acute tubular injury with prominent atypical intratubular casts, consistent with lambda light chain cast nephropathy. Multiple myeloma was confirmed with bone marrow biopsy. Quantitative immunoglobulin levels of IgD were elevated at 228 mg/dL (normal <= 15.3 mg/dL), all other Ig levels were normal. Immunofixation electrophoresis showed an IgD lambda monoclonal protein band.

Multiple Myeloma is a common hematologic malignancy with an incidence of 4.1 cases per 100,000 people with IgD Myeloma making up just 1-2 % of the total myeloma cases. Kidney disease may be the first manifestation of the disease though is often gone undiagnosed until other presenting symptoms emerge. The initial diagnosis of ATN in Myeloma is rare with only 17 patients presenting out of 190 in a recent case series of patients with any type of Myeloma.

More recently, however, Zagouri et al published a review based on the Greek Myeloma Study Group that showed no difference between the response rates and overall prognosis between myeloma sub-types. The uniqueness of IgD myeloma is that the mean age of diagnosis is lower than the other subtypes. Our patient initially received the more conventional treatment regimen of Bortezomib, lenalidomide and dexamethasone while awaiting evaluation for an autologous stem cell transplant.

16

PREGNANCY INDUCED MICROANGIOPATHY, HELLP OR TTP!

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Introduction:TTP is a potentially life-threatening disease if it is not detected early. Typically patients present
with microangiopathic hemolytic anemia, thrombocytopenia, Altered mental status, fever, and renal abnormalities.**Case Description:** 26 year old Caucasian female, G1P0 at 35 weeks gestation presented for a routine peripartum visit. Patient was found to have elevated blood pressure of 140/90 and 13 lbs weight gain in the last two weeks.Physical exam showed vital signs of BP 140/88 HR 88 RR 18 and Temp of 98. Abdominal exam revealed soft, gravid, non-tender abdomen. Scattered bruises were observed in her legs, thighs and arms, and she was found to have +2 bilateral pitting leg edema.Initial laboratory studies showed O+ Blood group, Hgb: 7.2 g/dL Platelets: 16 , WBCs: 9.2 , Peripheral Blood Smear
schistocytes, microspherocytes, toxic PMN BUN: 16, Cr: 0.78, Glucose: 95, Calcium: 8.2 Albumin: 3.2, LDH: 473, Total Bilirubin: 0.6, Uric Acid: 7.1 ,AST: 31, ALT: 21, Gamma GT: 9 ,PT: 9.9, INR: 0.92, aPTT: 25.5, Fibrinogen: 493.5,. It was suspected that the patient had HELLP syndrome. The patient was admitted for labor after transfusion of 2 units of PRBCs and 2 units of Plt. Patient continued to have hemolytic anemia and thrombocytopenia after delivery. Further labs studies showed direct Coombs test to be negative, negative ANA, Anti-cardiolipin, B2 Glycoprotein 1 Ab, HIV and viral hepatitis profile. TTP/HUS was suspected and plasma exchange therapy was initiated. After 1-2 sessions, the patient had significant improvement in her total platelet count. Her platelet count normalized by the 4th session with a maximum value of 216.The patient's ADAMTS13 activity level returned <10%, prompting the diagnosis of TTP. Her ADAMTS13 antibody results were negative, giving a final diagnosis of inherited TTP (Upshaw-Schulman syndrome). Patient platelet and Hgb count improved significantly and she was discharged home.
Discussion: Inherited TTP is a rare syndrome that clinicians should be aware of. The syndrome can be misdiagnosed in pregnancy due to the assumption of HELLP, which is more common in this patients group .