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- A 49 yrs old male patient , farmer by occupation , resident of khed came with c/o :-

- Shortness of breath since 15 days
- Easy fatiguability since 15 days
- Dry cough since 15 days
- Swelling of both legs since 10 days

PAST HISTORY

- Per rectal bleeding one month back for 4-5 days (fresh per rectal bleed 4-5 drops after defecation)
- Not a k/c/o DM/HTN/TB/BA
- No history of previous blood transfusion.
- No history of fever.

GENERAL EXAMINATION

- Afebrile
- Pulse – 84/min
- BP- 150/90 mmhg

  - Pallor + , pedal oedema + , knuckle pigmentation + , Platynychia +

  - JVP 5-6 cm above the reference point.

SYSTEMIC EXAMINATION

- P/A –
- Soft , no hepatomegaly
- Spleen palpable 4-5 cms below the left costal margin , non-tender

- RESP – AEBE , left basal crepts +
- CVS – S1S2 audible , no murmur
- CNS – No focal neurological deficit

LAB PARAMETERS

- HB – 6.1 gm/dl
- TLC-6500 (39/57/2/2)
- ESR- 48 (raised)
- MCV-65.3
- Retic count-2.2%
- RDW – 55.3 cumm
- PBS – Microcytic , hypochromic

- Direct Coombs Test – Negative

(D) –0.22 mg/dl (0-0.3)

Cholesterol – 93 mg/dl

-ALT – 15 U/L (0-40) HDL – 31 mg/dl

-AST – 24 U/L (5-35) LDL – 50.9 mg/dl

-ALP – 123 U/L (15-112)

-Serum protein – 7.44 g/dl

-Sr. Albumin – 2.86 g/dl Sr Na – 138 mm/l

-Sr. Globulin – 4.1 g/dl Sr K – 4.0 mm/l

-Sr. uric acid – 9.8 gm/dl Blood urea – 46 mg/dl

HBsAG - Negative

- Urine R/M – Albumin : 2+ HCV - Negative

  Sugar : nil

  RBCs : >50/hpf

  Blood : 2+ CD4 Count – 320

  Pus cells : 0-1

  Epi cells : 0-1

  Casts : Absent

- Urine C/S – No growth Sputum AFB – negative

Sputum c/s – No growth

- TFT :

  TSH – 19.9 µ IU/ml (N- 0.3-5.5)

  T3 – 105 ng/dl (N - 60-200)

  T4 – 6.2 µg/dl (N - 4.5-12)

- C3 – 76.50 mg/dl (N : 90-180 mg/dl)
- C4- 4.10 mg/dl (N: 10-14 mg/dl)
- c-ANCA , p-ANCA – Negative

- Sr. Protien Electrophoresis : Hypergammaglobulinemia noticed , Monoclonal band not seen.

- ANA – 0.62 (Neg < 0.8)
- ANA Blot – PM-Scl , Jo-1 : weakly positive

- **Iron profile** :-

  Sr. iron – 22 µg/dl (70-180)

  TIBC – 374 µg/dl (225-535)

  % transferrin saturation – 6 % (13-45)

  Ferritin – 19.3 mg/ml (22-322)

- **Bone marrow aspiration** – Mild erythroid hyperplasia with normoblastic maturation.

- **ECG** – ‘T’ wave inversion in I, avL , V4 , V5 , V6
- **CXR** – Inhomogenous opacity in left lower zone.
- **2D Echo** – mild concentric LVH , Hypertensive changes , good LV function , EF – 60%
- **HRCT thorax** – Patchy areas of consolidation in postero-basal segments of lower lobe of left lung field.
- **USG (A/P)** – Splenomegaly 14.5 cms

PROVISIONAL DIAGNOSIS :-

- In view of the history , examination and investigations , a provisional diagnosis of :-

" HIV WITH IRON DEFICIENCY ANEMIA WITH KIDNEY DISEASE WITH HYPOTHYROIDISM WITH HYPERTENSION WITH LOWER RESPIRATORY TRACT INFECTION "

- **Nephrology opinion** :-

-Renal biopsy was advised with keeping in mind the diagnosis of :-

?HIV ASSOCIATED NEPHROPATHY

- **RENAL BIOPSY REPORT :-**
- Global sclerosis and segmental endocapilary proliferation rich in lymphocytes .
- Segmental duplication of peripheral capilary wall along with moderate mesangial proliferation.
- Immunofluorescence :- revealed 6 glomeruli

- IgG – 2+ IgA-Neg
- Kappa-2+ IgM-Neg
- Lambda-2+ C3- 3+
- Immune complex mediated Membrano -Proliferative Glomerulonephritis .

- FINAL DIAGNOSIS :-

"HIV INDUCED IMMUNE COMPLEX MEDIATED MEMBRANO-PROLIFERATIVE GLOMERULONEPHRITIS WITH HYPOTHYROIDISM"

TREATMENT

- The patient was started on PREDNISOLONE 1mg / kg/day for 28 days and the dosage will be tapered off on follow up.
- He was also started with (ART) - TLE regimen :-

  - Tenofovir 300 mg
  - Lamivudine 300 mg
  - Efavirenz 600 mg

OUTCOME

- The patient is currently doing well and is on regular follow up.
- His RFT’s - WNL
- Urine R/M - reduced protein and RBCs.

DISCUSSION

- Patients with HIV infection are at increased risk for both acute kidney injury and chronic kidney disease.
- Untreated HIV infection, as well as antiretroviral therapy, are associated with kidney disease.
- Antiretroviral therapy is a double edged sword: although it can lead to improvement in the life expectancy of person with HIV infection, it can also increase clinical uncertainty regarding changes in renal function in this population

- Some risk factors are specific to HIV causing renal disease :-

✓ low CD4 count,

✓ high viral load,

✓ co-infection with hepatitis B and C virus

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Acute Kidney Injury

Acute tubular necrosis

- Granular or muddy brown casts
- Fractional excretion of sodium, >2%

→ Sepsis associated
→ Medication nephrotoxicity
→ Pigment nephropathy

Thrombotic microangiopathy

- Microangiopathic hemolytic anemia
- Thrombocytopenia
- Hematuria
- Proteinuria

Acute interstitial nephritis

- Active urine sediment
- Pyuria
- White-cell casts

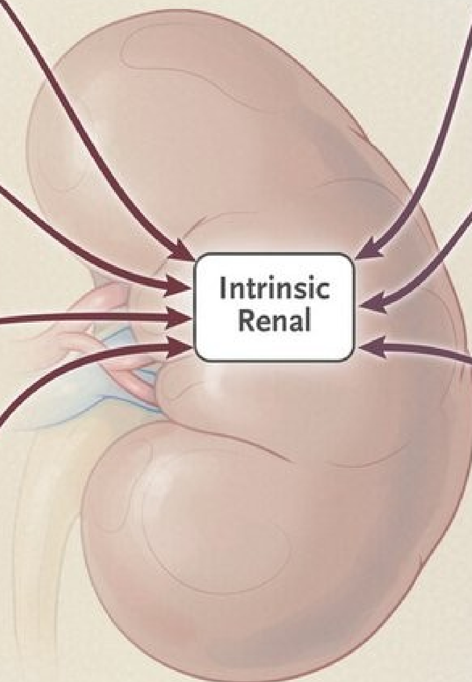
→ Medications
→ Infection related

HIV-associated immune-complex renal disease

- Active urine sediment
- Proteinuria
- Microscopic hematuria
- Red-cell casts
- Hypocomplementemia
- Screen for hepatitis and other coinfections

Prerenal

- Volume depletion
- Bland urine sediment
- Fractional excretion of sodium, <1%



Intrinsic Renal

Postrenal

Obstructive

Chronic Kidney Disease

HIV-associated nephropathy

- Nephrotic-range proteinuria
- High HIV viral load
- Low CD4 count

Combination antiretroviral therapy nephropathy

- Subnephrotic proteinuria
- Controlled viral load and CD4 count

→ Interstitial nephritis
→ Crystalluria
→ • Mitochondrial toxicity
  • Fanconi's syndrome

Other kidney syndromes

- Diabetic kidney diseases
- Hypertensive kidney diseases
- Focal segmental glomerulosclerosis

THANK YOU