

Case Presentation

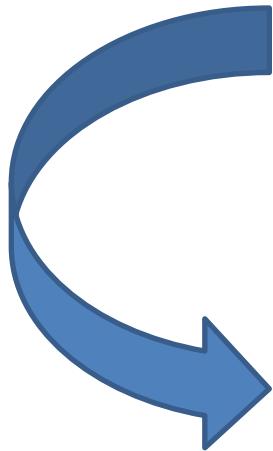
Yard. Doç. Dr. Elif Tükenmez Tigen

- 58 year old, male, captain (long road)
- Smoker 35 pack/year
- May 2008 → HIV RNA: 182.000 copy/mL
CD4: %45-1485



He refused to take treatment!!

- TA: 120/80 mmHg
- Basal creatinine: 0.99 mg/dL
- Basal TG: 447 mg/dL
- Total cholestreol: 218 mg/dL
- Fenofibrate 267 mg/day (irregular usage)



Follow-up without ART

Date	CD4 (%-n)	HIV RNA	Creat.	TA	Chol/TG	eGFR (CKD-EPI)	Therapy
12-05-08	45-1485	182.000	0.9	120/80	218/447	99 mL/min	NO
20-09-10	31-1032	164.000	1.1	130/90	198/489	77 mL/min	NO
20-12-12	33-722	-----	1.3	130/90	254/436	61 mL/min	NO
07-06-13	27-815	-----	1.3	120/90		61mL/min	NO

He didn't maintain to his regular
check up for 2 years

**He went to
another
center!!!**

July 2014 → Creat: 1.7
December 2014 → Creat: 2.5
24 hours urine prot → 922 mg/day
eGFR: 53.2 cc/min

HIVAN



**HT induced
nephropathy**

**Any other
reason??**

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Table 2 Glomerular or tubular diseases in human immunodeficiency virus-infected patients

Diseases	Clinical characteristics
HIV-specific glomerular disease	
HIVAN	Detectable viral load, a high amount of proteinuria, albuminuria, RPGN
HIVIC	Proteinuria and/or hematuria, variable manifestation including AKI
TMA	AKI, proteinuria, hematuria with microangiopathic hemolytic anemia and thrombocytopenia
HIV-non-specific glomerular disease	
HCV-related MPGN/ cryoglobulinemia	Proteinuria and/or hematuria, nephritic syndrome, a decrease in serum complements
Diabetic nephropathy	Proteinuria (microalbuminuria to nephrotic syndrome), a decrease in GFR
Glomerular sclerosis	Older patients, hypertension, no or low amount of proteinuria, coexistence of atherosclerotic diseases
Membranous glomerulopathy	Nephrotic syndrome; idiopathic and secondary causes associated with HBV or cancers
Minimal change disease	Nephrotic syndrome, use of NSAIDs
IgA nephropathy	Hematuria and/or proteinuria with or without renal failure
Post-infectious glomerulonephritis	Hematuria and/or proteinuria with or without renal failure
ART-associated tubular injury	
Acute tubular necrosis	Use of TDF
Cristal nephropathy	Use of IDV and ATV
Acute or chronic interstitial nephritis	Use of ATV

Table 3 Traditional and human immunodeficiency virus-related factors associated with chronic kidney disease

Variables
Black race
Older age
Low CD4 cell count
High HIV-RNA viral load
Diabetes mellitus
Hypertension
Hepatitis C virus coinfection
Proteinuria
Albuminuria
eGFR < 90 mL/min per 1.73 m ²
Elevation of urinary tubular markers
Use of TDF or ATV

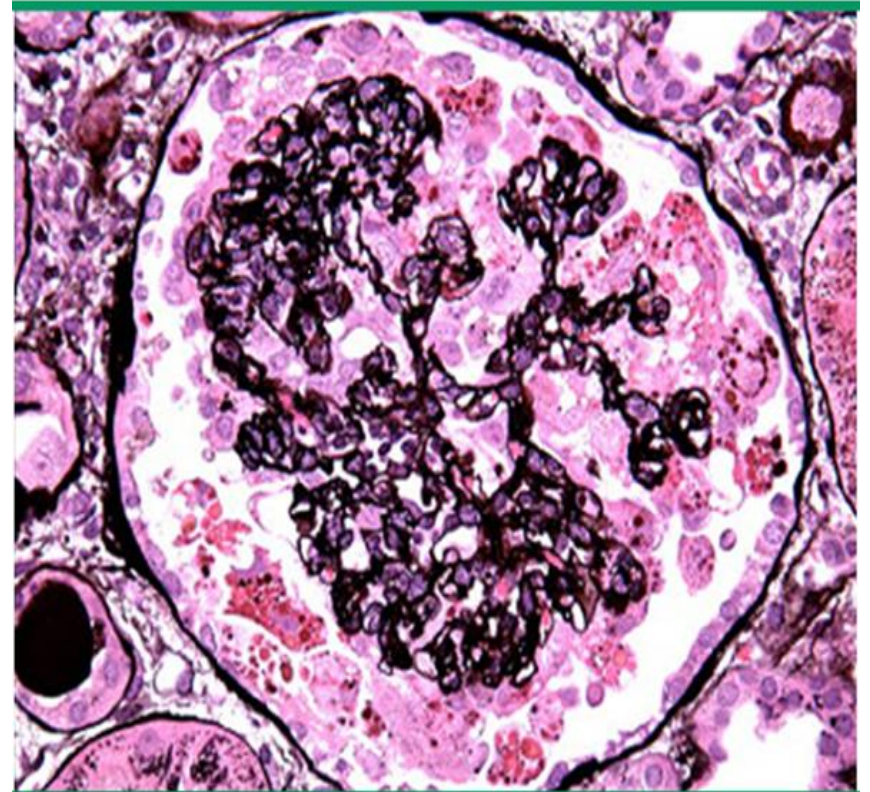
HIVAN

- Heavy proteinuria
- Reduced eGRF
- Echogenic kidneys on USG

HIVAN

- Focal segmental glomerulosclerosis (FSGS)-collapsing
- Microcystically dilated tubules
- Tubulointerstitial inflammation

HIVAN light microscopy



Date	CD4 (%-n)	HIV RNA	Creat.	TA	Chol/TG	eGFR (CKD-EPI)	Therapy
22-11-15	11-493	909.000	2.36		243/489	30 mL/min	Lopinavir/ritonavir + Raltegravir HIVAN???

- Renal USG → Renal parenchymal echo ↑
- Nephrology consultation → HIVAN??
- Biopsy → Refused
- Fenofibrate (Lipanthyl) 267 mg/day started

Kaletra + Isentress

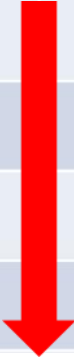
When Consult with a Nephrologist

- GFR decline by >25% from baseline
- GFR level <60 mL/minute/1.73 m²



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IDSA GUIDELINE

Date	CD4 (%-n)	HIV RNA	Creat.	TA	Chol/TG	eGFR (CKD-EPI)	Therapy
20-12-15	18-587	4311	2.1			35 mL /dak	Kaletra Isentres
07-01-16	24-794	420	2.3			32 mL/min	
01-03-16		288	2.5		291/601		
01-04-16	31-716	284	2.6		262/874	26 mL/min	

Spot urine prt/creat → 2600 mg/g



Darunavir 2x600 mg
Ritonavir 2x100 mg
Raltegravir 2x400 mg
Lamivudine 1x150 mg

Clinical Practice Guideline for the Management of Chronic Kidney Disease in Patients Infected With HIV: 2014 Update by the HIV Medicine Association of the Infectious Diseases Society of America

Table 3. Classification of Albuminuria and Proteinuria

Measurement	Normal to Mildly Increased (A1)	Moderately Increased (A2)	Severely Increased (A3)
AER, mg/24 h	<30	30–300	>300
PER, mg/24 h	<150	150–500	>500
ACR			
mg/mmol	<3	3–30	>30
mg/g	<30	30–300	>300
PCR			
mg/mmol	<15	15–50	>50
mg/g	<150	150–500	>500
Protein reagent strip	Negative or trace	Trace to 1+	1+ or greater

Adapted from the Kidney Disease Outcomes Quality Initiative Clinical Guidelines for Chronic Kidney Disease, 2013 [1].

Abbreviations: ACR, albumin-to-creatinine ratio; AER, albumin excretion rate; PCR, protein-to-creatinine ratio; PER, protein excretion rate.

Date	CD4 (%-n)	HIV RNA	Creat.	TA	Chol/TG	eGFR (CKD-EPI)	Therapy
13-05-16		139	2.4		319/832	28 mL/min	
20-10-16		26	3.2	150/100	324/780	20 mL/min	

- ASCVD %28.2
- Proteiuria +, hemoglobinuria ++
- Spot urine prt/cr 2600 mg/g
- Rosuvastatin 20 mg
- Amlodipin 10mg was started

**Ca Channel Blocker
ACEI**

?

**Steroid
therapy ??**

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01-03-16		288	2.5		291/601		
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**Darunavir
Ritonavir
Raltegravir
Lamivudine**

Perspective

The Kidney in HIV Infection: Beyond HIV-Associated Nephropathy

