

Answer Key to [Nephrology Jumble Bumble: HIV & the Kidney](#)

1. COLLAPSING

HIV is associated with a number of glomerular disorders. The classic glomerulopathy of HIV infection is [collapsing glomerulopathy](#).

2. TENOFOVIR

[Tenofovir](#) is the most common anti-retroviral drug known to cause proximal tubular dysfunction. It manifests as various combinations of glycosuria, proteinuria, phosphaturia, uricosuria, and aminoaciduria (Fanconi syndrome). Risk factors for tenofovir-induced renal toxicity include CKD and combined therapy with didanosine.

3. IMMUNE COMPLEX

In European and Asian populations, the most common HIV-associated glomerular disease is immune complex glomerulonephritis. The pathogenesis is not well understood, but some cases have been shown to [include HIV antigen](#)).

4. CRYSTALLURIA

Indinavir causes crystalluria leading to tubular precipitation and obstructive nephropathy. It is also associated with nephrolithiasis. Ritonavir and lopinavir can increase the [toxicity of indinavir](#).

5. BURKITT

Burkitt lymphoma is a highly aggressive form of non-Hodgkin lymphoma, and is considered an AIDS defining condition. Burkitt lymphoma may have a predilection for kidney involvement when compared to other forms of lymphoma. AKI in Burkitt lymphoma could be due to spontaneous tumor lysis syndrome, direct tumor infiltration, or compression of the renal tubules.

Bonus answer:

TUBULORETICULAR INCLUSIONS

HIV-associated collapsing glomerulopathy is histologically indistinguishable from idiopathic collapsing glomerulopathy. The presence on electron microscopy of numerous tubuloreticular inclusions in the glomerular endothelial cells is unique to HIV nephropathy. The only other disorder in which these structures are prominently seen is lupus nephritis and interferon therapy.