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SHORT COMMUNICATION

A patient with HIV infection presenting with diffuse membranous glomerulonephritis in a country with a low HIV prevalence—Remarkable remission with therapy

Selda Aydin[a], Bilgül Mete[a], Mesut Yilmaz[b,*], Gulsah Yenidünya[c], Reşat Zaras[a], Aydın Tunckale[c], Fehmi Tabak[a]

[a] *Istanbul University, Cerrahpasa Medical Faculty, Infectious Diseases and Clinical Microbiology, Istanbul, Turkey*
[b] *Istanbul Medipol University, Infectious Diseases and Clinical Microbiology, Istanbul, Turkey*
[c] *Istanbul University, Cerrahpasa Medical Faculty, Internal Medicine, Istanbul, Turkey*

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Summary The most common manifestation of HIV in the kidney is HIV-associated nephropathy (HIVAN). In this report, we describe the first documented case of membranous glomerulonephritis in an HIV-positive individual in Turkey, the country with the lowest HIV prevalence in the region. The case occurred in an HIV-positive, hepatitis C (HCV)-negative, and hepatitis B (HBV)-negative Caucasian male, who presented with nephrotic-range proteinuria. The patient had a favorable response to HAART and an angiotensin-receptor blocker.

Introduction

HIV-associated nephropathy (HIVAN) is characterized clinically by proteinuria, often with a sudden onset, with rapidly progressive renal dysfunction resulting in end-stage renal disease (ESRD) over the course of several months [1]. The pathology of HIVAN is characterized by the triad of collapsing focal glomerular sclerosis (FGS), microcystic tubular dilation, and endothelial cell tubuloreticular inclusions [2]. HIVAN was initially described in 1984 by Rao et al., who reported a pattern of sclerosing glomerulopathy in HIV-1-seropositive patients in New York City [3]. Although approximately half of the patients were asymptomatic and had not suffered from opportunistic infections

* Corresponding author at: Istanbul Medipol University, Infectious Diseases and Clinical Microbiology, Unkapani, Ataturk Bulvari No.: 27, 34083 Fatih, Istanbul, Turkey.
Tel.: +90 212 453 4856; fax: +90 212 531 7555.
E-mail address: myilmaz@medipol.edu.tr (M. Yilmaz).

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at the time of diagnosis, all had CD4 cell counts of less than 200 cells/mm^3. These patients may present with nephrological disorders. HIVAN is especially prevalent among HIV-1-seropositive patients of African descent [4,5]. Herein, we present the first well-documented case of an HIV-1-seropositive Caucasian male patient with membranous glomerulonephritis but without coinfections associated with membranous nephropathy in Turkey, the country with the lowest HIV prevalence in the region.

Case report

A 55-year-old man was admitted to our hospital with proteinuria exceeding 3.5 g per day as determined by urine analysis during a routine laboratory evaluation. He had no further complaints, although HIV seropositivity had been detected 3 months previously. The physical examination was normal. Laboratory findings were as follows: Hgb: 11.0 g/dL, Na: 126 mequiv/L, albumin: 1.4 g/dL, creatinine: 1.8 mg/dL, CD4: 75/mm^3, and HIV RNA: 547,000 copies/ml. He tested negative for toxoplasma, syphilis and malaria. The urinary sediment revealed severe proteinuria. The glomerular filtration rate (GFR) was found to be 77 ml/min as predicted by the 24-h creatinine excretion rate. Proteinuria of 6.7 g per day was detected by 24-h measurements and urine analysis. The serum complement levels were normal. Serum protein electrophoresis showed a broad-based increase in the levels of gamma globulins. ANA was slightly positive; cANCA and pANCA were negative. The patient was also negative for HCV and HBV. Further investigation excluded malignancies and possible exposure to drugs. Urinary ultrasonography revealed increased parenchymal echogenicity in the right kidney.

A renal biopsy was performed, and a total of 18 glomeruli were observed on the slides. Three of these glomeruli were globally sclerotic. The other glomeruli were normocellular, but the capillary basement membranes were significantly and diffusely thickened. The mesangial regions were slightly expanded and hypercellular in some segments. The interstitium was expanded in the subcapsular region with mononuclear cell infiltration (Fig. 1). The histopathological abnormalities observed in the renal biopsy specimen were consistent with membranous glomerulonephritis.

A treatment regimen of HAART (consisting of lopinavir/ritonavir + lamivudine + zidovudine) and valsartan (40 mg/day) was commenced. A dietary protein range of 0.6—0.8 g/kg/day was suggested as a further means of reducing the proteinuria. After 6 weeks of treatment, his serum creatinine level was 1.28 mg/dL, and urine analysis revealed 0.825 g/day of proteinuria. The patient was discharged for follow-up. The patient is currently in the second year of treatment with 15 mg/day of protein in the urine, a serum creatinine level of 1.04 mg/dL, a GFR of 110 ml/min, a CD4 level of 350/mm^3 and no expression of HIV RNA.

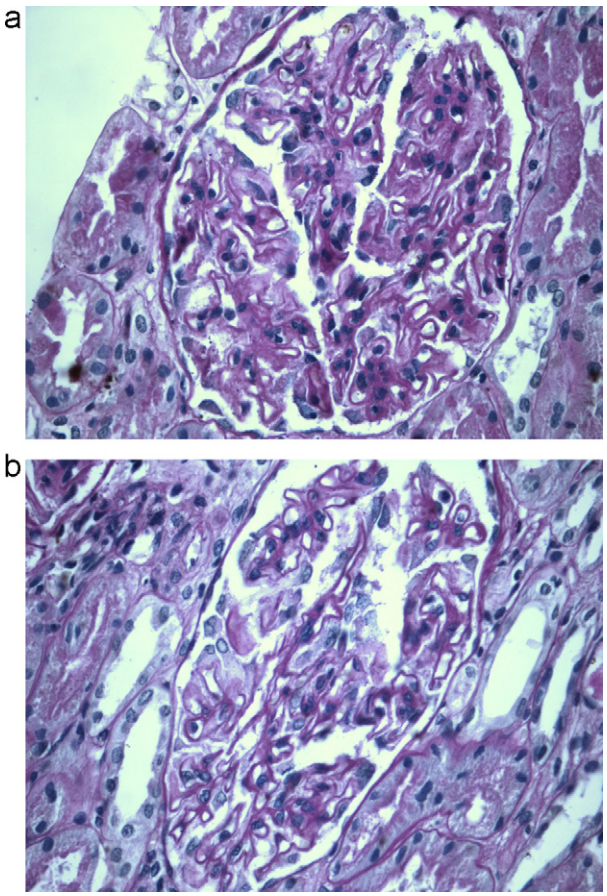

Figure 1 Diffuse membranous glomerulonephritis (H&E).

Discussion

Turkey has one of the lowest prevalences of HIV/AIDS in central Europe. By the end of June 2009, a total of 3898 cases had been identified in our country, which has a population of 70 million [6].

HIV-infected people exhibit a wide spectrum of kidney histopathologies. Although HIVAN is now a well-characterized renal disease presenting with collapsing focal glomerulosclerosis, an

ever-increasing number of other glomerulopathies including amyloidosis, minimal change disease, diabetic nephropathy, allergic interstitial nephritis, and cryoglobulinemia are described in association with HIV infection [1,3,7]. Patients with HIVAN usually present with symptoms of chronic renal failure accompanied by proteinuria [1,3,4].

Membranous nephropathy has been reported previously in HIV-infected patients [8,9]. However, HIV-associated nephropathies including membranous glomerulopathy have been recently reported to occur significantly more frequently in individuals coinfected with hepatitis C than in those who are not coinfected [10]. Our patient did not have any coinfections or comorbidities typically associated with membranous nephropathy. He presented with massive proteinuria with at least 3 months of known HIV seropositivity. He was asymptomatic and had no detectable opportunistic infections. Unfortunately, the demonstration of viral antigens could not be performed by electron microscopy or immunofluorescence.

Renal echogenicity may be increased during the ultrasonographic examination [4]. Both increased echogenicity of the right kidney and diffuse membranous glomerulonephritis were observed in our case.

HAART prevents the progression of HIVAN to end-stage renal failure. Furthermore, HAART decreases the development of HIVAN by 60% in risk groups [4,11,12]. Angiotensin-converting enzyme (ACE) inhibitors were also implicated in the prevention of HIVAN in some studies [1,4]. Although steroids may cause significant decreases in serum creatinine levels, recurrences were observed after the cessation of therapy [4,13]. We began to treat our patient with both HAART and an angiotensin-receptor blocker and observed the regression of proteinuria at the 6th week of follow-up. No immunosuppressive agent was used.

In conclusion, HIV infection can lead to functional and structural abnormalities in renal tissue at any stage of the disease. HIV-associated membranous nephropathy should be considered in Caucasian patients with HIV infection complicated by nephrotic syndrome and renal failure even in the absence of other coinfections and comorbidities typically associated with membranous nephropathy. The management of HIV-associated kidney diseases requires close collaboration among infectious disease specialists and nephrologists. New combination therapies including protease inhibitors, determination of HIV disease stage by viral load detection and the management of infections and renal diseases at early stages are promising modalities in the reversal of progression to end-stage renal failure.

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Competing interests

None declared.

Ethical approval

Not required.

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