Secondary amyloidosis in a HIV patient

Nefrologia 2011;31(6):759-60
doi:10.3265/Nefrologia.pre2011.Jul.11026

To the Editor,

Secondary amyloidosis (AA) is an uncommon cause of nephrotic syndrome in patients infected by the human immunodeficiency virus (HIV). The cases mentioned until now have been in patients infected by HIV that use parenteral drugs, with amyloidosis appearing as a consequence of chronic inflammation produced by the multiple skin infections related to the use of these drugs. In addition to the cutaneous inflammation caused by the use of parenteral psychotropics, immune disorders are produced that predispose the patient to amyloid deposits due to their reduced degradation in the body. Specifically, an interleukin 2 (IL-2) deficit has been described in one of these disorders. Here we report the case of a patient with an HIV infection that was an old user of intravenous drugs, who developed acute renal failure and complex nephrotic syndrome due to secondary amyloidosis.

The patient, of 51 years, was a consumer of 37 packs of cigarettes/year and occasional user of cocaine and cannabinoids, and until 16 years prior, was an intravenous heroin addict, with HIV infection recognised 25 years prior; received multiple doses of retroviral treatment due to failure and viral resistance issues, and is currently under treatment with maraviroc, raltegravir, darunavir, and norvir, with adequate viral loads and CD4 levels since 1 year prior. An HCV infection was diagnosed in 2006, but treatment was ruled out at that time due to difficulties with compliance. The patient sought treatment for dyspnoea, purulent cough, fever of 40ºC, abdominal distension, and general poor physical state with 10 days evolution. Upon hospitalisation the patient was in a poor general state of health, normotensive, afebrile, with severe bradycardia at 45bpm. The physical examination revealed cutaneous-mucosal pallor, soft tissue oedema, bimalleolar cold, prolonged expiratory interval with diminished respiratory sounds in the apical thirds of both hemithoraxes, crepitation and bilateral rhonchi, distended abdomen with diffuse pain upon deep palpation, timpani to sound, and absence of bowel sounds.

Complementary examinations revealed normocytic/normochromic anaemia at 10.9g/dl, leukocytosis at 11 700x10^3/μl, with neutrophilia and lymphopoenia (85% and 8%, respectively). We also observed elevated urea and creatinine values (293mg/dl and 9.53mg/dl, respectively), hyperkalemia at 7mEq/l, and hyponatraemia at 125mEq/l, with metabolic acidosis. The urine sediment analysis revealed a red blood cell count of 563 cells/μl, leukocytes at 103 cells/μl, proteins at 351mg/dl, and Fe Na+ was 2.6%. Antigenuria for pneumococcus was positive. We observed heterogeneous opacities with apex air bronchograms in both lung fields in the chest x-ray. The abdominal x-ray showed diffuse colon dilation, with no view of flatulence. An abdominal ultrasound taken as an emergency procedure showed the kidneys at 15cm (nephromegaly) with cortical hyperechogenicity, symmetrical resistive index, and free ascites. The ECG indicated nodal rhythm. We performed a computed tomography of the abdomen, observing oedema of the subcutaneous cellular tissue, bilateral pleural effusion, ascites, and mural thickening of the small intestinal loops, with no evidence of occlusion, subocclusion, or findings indicative of ischaemia. We also observed globular kidneys with significant phase delay and attenuation.

The patient had satisfactory evolution in terms of the respiratory infection (following antimicrobial treatment) and abdominal distension. However, the deteriorated renal function persisted, with glomerular filtration rates close to 18ml/min. The 24-hour urine analysis revealed proteinuria at 22g and persistent microscopic haematuria. The tentative diagnosis of complex nephrotic syndrome led to a renal biopsy, in which we observed a total of 11 glomeruli, with diffuse, global mesangial expansion and a positive Congo red stain for acellular nodes, thickening of the basal capillary membranes, dilated tubules with dense intratubular casts and some inflammatory cells, and interstitial oedema (Figure 1). The permanganate test also resulted positive. The immunohistochemical analysis was positive only for amyloid AA.

We did not identify any neoplastic, infectious, autoimmune, or anti-inflammatory pathologies that could explain the presence of the secondary amyloidosis.

The relationship between the subcutaneous and/or intravenous consumption of drugs, above all heroin, and the development of secondary amyloidosis has been well-known for over 30 years,[1-3] mainly in patients that develop repeated cutaneous infections. Until now, only two cases have been recorded in the literature[4,5] of patients infected with this virus and with amyloidosis that have no history of drug consumption. Despite the unclear nature of the relationship between amyloidosis and HIV, it has been observed that serum amyloid A protein (SAA) levels are high in these patients,[6] which would, in theory, predispose the patient to the development of amyloidosis. The mechanism that could explain the increased secretion of amyloid A is the reduction of IL-2 levels[7] due to HIV infection, which would cause a decreased expression of the IL-1 receptor antagonist (IL-

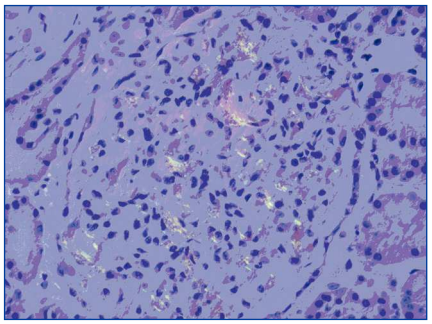

Figure 1. Positive Congo red staining for mesangial deposits.

1Ra), which in turn would stimulate tumour necrosis factor alpha (TNFα) and interleukin 6 (IL-6) and the activation of NFκ-β which stimulates the production of SAA.[8]

In the case of our patient, given the long evolution of the HIV infection and long history of parenteral drug consumption, it would be impossible to discern the cause of the amyloidosis, which could be due to drug consumption and recurrent infections, the HIV infection, or perhaps the sum of all of these factors.

Conflicts of interest

The authors have no conflicts of interest to declare.

1. Jacob H, Charytan C, Rascoff JH, Golden R, Janis R. Amyloidosis secondary to drug abuse and chronic skin suppuration. Arch Intern Med 1978;138:1150- 1.
2. Meador KH, Sharon Z, Lewis EJ. Renal amyloidosis and subcutaneous drug abuse. Ann Intern Med 1979;91:565-7.
3. Connolly JO, Gillmore JD, Lachmann HJ, Davenport A, Hawkins PN, Woolfson RG. Renal amyloidosis in intravenous drug users. QJM 2006;99:737-42.
4. Cozzi PJ, Abu-Jawdeh GM, Green RM, Green D. Amyloidosis in association with human immunodeficiency virus infection. Clin Infect Dis 1992;14:189-91.
5. Méry JP, Delahousse M, Nochy D. Amyloidosis and infection due to human immunodeficiency virus. Clin Infect Dis 1993;16:733-4.
6. Husebekk A, Permin H, Husby G. Serum amyloid protein A (SAA): an indicator of inflammation in AIDS and AIDS-related complex (ARC). Scand J Infect Dis 1986;18:389-94.
7. Pett SL, Kelleher AD, Emery S. Role of interleukin-2 in patients with HIV infection. Drugs 2010;70:1115-30.
8. Jensen LE, Whitehead AS. Regulation of serum amyloid A protein expression during the acute-phase response. Biochem J 1998;3:489-503.

E. Jatem[1], J. Loureiro[2], I. Agraz[1], A. Curran[3]

[1] Nephrology Department. Vall d'Hebron General University Hospital. Barcelona, Spain

[2] Department of Internal Medicine. Vall d'Hebron General University Hospital. Barcelona, Spain

[3] Infectious Diseases Department. Vall d'Hebron General University Hospital. Barcelona, Spain

Correspondence: E. Jatem
Servicio de Nefrología.
Hospital General Universitari Vall d'Hebron.
Joan Torras. 08030 Barcelona. Spain.
jatemelias@gmail.com
eliasjatem@ymail.com

Acute renal failure secondary to cyclic vomiting syndrome

Nefrologia 2011;31(6):760-1
doi:10.3265/Nefrologia.pre2011.Jul.11023

To the Editor,

Cyclic vomiting syndrome (CVS) is a functional gastrointestinal disorder characterised by episodes of severe, unpredictable, and explosive vomiting, separated by intervals of perfect health.[1] The start of these symptoms can occur in infancy, and it normally appears between the ages of three and seven years, although cases have been described when symptoms commence in adulthood.[2]

The aetiology and pathogenesis of this condition are still unknown, although the hypothesis has been put forward of a disorder of the cerebro-intestinal communication, which is activated by certain stimuli (stress, infection, some foods).[3] The most common duration of an episode can be one to four days, and may last as long as 14 days. During each episode, vomiting occurs as frequently as every 10 to 15 minutes, and can occur anywhere from several times a year to several times per month, with a regular recurrence rate.

The symptoms include vomiting preceded by forceful gagging and abdominal muscular contractions, accompanied by uncontrollable nausea and extreme fatigue. Patients suffer a sort of "conscious coma" during each episode, and describe themselves as being in a state of stupor until the episode passes.[4] Among the most common complications are dehydration, electrolyte disorders, improper secretion of anti-diuretic hormone (ADH), and oesophagitis.[4]

The optimal treatment for this condition consists of establishing prophylaxis with anti-migraine medications such as amitriptyline along with propranolol. In the prodromal phase, we must attempt to abort the episode using ketorolac or sumatriptan. In the acute phase, ondansetron or lorazepam are used, with chlorpromazine, promethazine, or intravenous morphine as the possible alternatives.[4] The patient occasionally must be sedated in order to assuage the unstoppable vomiting.

Here we present the case report of a 31-year old male who has suffered from crises of nausea, uncontrollable vomiting, and abdominal distress associated with prodromal nervousness since infancy (three-five years old), frequently related to triggering factors such as emotional stress and infections. The patient later had symptom-free periods with variable frequency. He was diagnosed with periodical functional syndrome with uncontrollable vomiting and erosive oesophagitis at the age of 14 years, which persisted in spite of treatment with chlorpromazine. After being examined by several different specialists, the patient was diagnosed three years ago with CVS. The patient takes a prophylactic dose of 20mg propranolol (half at breakfast, half at dinner) and 75mg amitriptyline (half tablet at dinner), abortive therapy consists of microenemas with diazepam, and during acute crises he takes ondansetron at 4mg every 8 hours, one vial of lorazepam every 8 hours, and one vial of chlorpromazine intravenously every six-eight hours or promethazine at 50mg every six-eight hours, in the hospital.

Since one year ago the patient has required three hospitalisations due