Membranoproliferative Glomerulonephritis and Hepatitis C Virus Infection

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Dear Sir,

Recently, Gonzalo et al. [1] have published a paper about the possible association between membranoproliferative glomerulonephritis (MPGN) and hepatitis C virus (HCV) infection in a 28-year-old woman in whom a polyclonal mixed IgM-IgG cryoglobulin was detected.

A few years ago, we reported the case of a woman with type II essential mixed cryoglobulinemia (EMC) and renal involvement (MPGN with subendothelial deposits) in whom specific antibodies against HCV were demonstrated in the serum and cryoprecipitate [2]. Our patient was a 37-year-old woman with a 10-year history of palpable purpura of the lower legs, arthralgias and Raynaud's phenomenon. She was referred to our Service because of proteinuria, hypertension and microhematuria during the preceeding month, with a normal renal function. On physical examination, blood pressure was 160/100 mm Hg, hepatomegaly and splenomegaly were palpable and legs presented chronic trophic changes. Blood laboratory biochimic data were within the normal range except a mild elevation of transaminases. Uri-nalysis showed proteinuria of 3 g/24 h with granular casts and red blood cells in the urinary sediment. Serum immunoglobulins were in the normal range, and there were low levels of early complement components. Circulating immune complexes and rheumatoid factor were positive, and monoclonal mixed IgM-kappa cryoglobulinemia (type II) was detected.

Skin biopsy showed a leukocytoclastic vasculitis with IgG deposits in the vessel walls. Histological study of the liver revealed a septal cirrhosis. The pattern of the glomerular involvement found in the renal biopsy was characteristic of MPGN. Direct immunofluorescence showed granular C3 deposits in a subendothelial and peripheral position. Hepatitis A and B, cytomegalovirus, herpes simplex and Epstein-Barr virus markers were negative. Specific antibodies against HCV were demonstrated in serum and cryoprecipitate using an ELISA test (Ortho Diagnostic System, N.J., USA).

Since the new methods for the detection of HCV markers have become available in the first years of the decade, a high frequency of anti-HCV in serum and cryoprecipitate from patients

with EMC has been reported [2-6]. In the case published by Casato et al. [6] the patient did not have arthralgias, Raynaud's phenomenon or cutaneous lesions, but sometimes, renal involvement is the presenting manifestation of EMC even before the appearance of systemic signs of the disease (purpura, arthralgias, systemic vasculitis) [7], and perhaps, MPGN presented by the woman may be in relationship with cryoglobulinemia in the setting of HCV infection. The research of HCV antibodies (HCV-Abs) in the cryoprecipitate could help to know the physiopathology of the case report. The presence of HCV-Abs suggests a causal relationship between MPGN and HCV infection. Virus C may be responsible for the pathologic and clinical features of EMC, including renal involvement, by inducing the formation of cryo-precipitable immunocomplexes.

In the future, the detection of HCV Ag and/or Abs on renal tissue will allow to know better about the possible pathogenetic link between HCV infection and glomerular dis-

References

- Gonzalo A, Bárcena R, Mampaso M, Zea A, Ortuño J: Membranoproliferative glomerulonephritis and hepatitis C virus infection. *Nephron* 1993;63:475-476.
- Albaracín C, Lopez Gomez JM, Gomez Camp-derá FJ, Perez Garcia R, Lago M, Gallego E, Valderrábano F: Cryoglobulinemia mixta esencial y virus C de la hepatitis. *Nefrología* 1991; 11:444-447.
- Misiani R, Bellavita P, Fenili D, Borelli G, Marchesi D, Massazzara M, Vendramin G, Comotti B, Tanzi E, Scudeller G, Zanetti A: Hepatitis C virus infection in patients with essential mixed cryoglobulinemia. *Ann Intern Med* 1992; 117: 573-577.
- Pascual M, Perrin L, Giostra E, Schifferly JA: Hepatitis C virus in patients with cryoglobulinemia type II. *J Infect Dis* 1990; 162/2:569-570.
- Durand JM, Lefevre P, Harle JR, Boncrat J, Vitvitski L, Souberand J: Cutaneous vasculitis and cryoglobulinemia type II associated with hepatitis C virus infection. *Lancet* 1991;337: 499-500.
- Casato M, Pucillo LP, Lagana B, Tabiani G, Goffredo F, Bonomo L: Cryoglobulinemia and hepatitis C virus. *Lancet* 1991 ;337:1047-1048.
- D'Amico G, Ferrario F, Colasanti G, Bucci A: Glomerulonephritis in essential mixed cryoglobulinemia (EMC); in Hamburger J, Crosnier J, Funk-Brentano JL(eds): Proceedings of the 21st Congress of the European Dialysis and Transplant Association. Paris, Flammarion, 1992, p349.