Low Prevalence of Hepatitis C Virus Antibodies with Primary Membranous Nephropathy and Membranoproliferative Glomerulonephritis in Hong Kong

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Reference

idiopathic MGN and MCGN, respectively (table 2). Idiopathic or primary GN was established when clinical connective tissue disease, diabetes and drug history were excluded, with negative serology for antinuclear antibodies, VDRL, hepatitis B surface an-

Dear Sir,

Many recent reports attribute a pathogenetic role to hepatitis C virus (HCV) in both mesangiocapillary glomerulonephritis (MCGN) and membranous nephropathy (MGN) [1-4]. The demonstrations of serum anti-HCV antibodies and HCV RNA in both sera and renal tissues by specific and sensitive methods are unequivocal (table 1), however these observations only represent indirect evidence for a putative role of HCV in glomerulonephritis (GN). Particularly when neither in situ hybridization (ISH) nor HCV DNA by polymerase chain reaction (PCR) identified HCV genomic fragment in glomeruli, such that HCV RNA detected in renal biopsy may arguably reflect lymphoplasmacytic contamination [1-3]. Moreover, reports of few isolated cases without reference to the prevalence of HCV serology in the population studied may be meaningless, as a mere coexistence of positive HCV serology and GN can be coincidental rather than pathogenetic [1,4]. While a strong causal relationship exists between HCV and mixed cryoglobulinemia, the apparent triad of mixed cryoglobulinemia, positive HCV serology and MCGN may be an artifactual bias to link GN and HCV. This is evident when regarding MCGN as a nonspecific glomerular reaction to various stimuli, including mixed cryoglobulinemia in the absence of HCV [1,2]. Further implication of HCV in GN will be possible when antibodies become available to detect HCV-specific antigens in glomerular immune deposits.

Over the past 24 months, we diagnosed 31 patients with MGN and 12 with MCGN in renal biopsies. Of these, 14 and 5 were

Table 1. Types of nephritis and HCV serology or genome detection in the literature

HCV ELISA RIBA

GN

HCV ISH RNA-PCR

1	8	MCGN	8	-	8s
2	5	MCGN	4	3	2s. t
3	2	MGN	2	2	2t
4	25	MGN	0	0	-

EIA = Enzyme immunoassay; RIBA = recombinant-based immuno-noblot assay; s = serum; t = renal tissues.

Table 2. Classification of MGN and MCGN in our institution during the past 24 months

Cases Subtypes

Primary MGN 14

Secondary MGN 17 HBV 8, SLE/MCTD 7, Gold 1, MG 1

Primary MCGN 5

Secondary MCGN 12 HBV 10, MCTD 1, tuberculosis 1

HBV = Hepatitis B virus-related; MCTD = mixed connective tissue disease; MG = myasthenia gravis.

tigen (HBsAg) and hepatitis A virus. In 10 of these 19 patients, rheumatoid factor and cryoglobulinemia were also negative. HCV serology in 30 patients with primary GN were studied at the time of renal biopsy and repeated in 13 patients at 6 months (table 3).

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Table 3. Results of HCV serology in 30 patients with primary glomerulonephritis

Type Cases HCV HCV

EIA 1 EIA 2

MGN 14 0/15 0/6

MCGN 5 0/5 0/4

IgAN 6 0/6 0/3

MCN 5 0/5

The anti-HCV were detected by enzyme-linked immunoassay (Abbott second-generation HCV EIA, containing 3 recombinant DNA antigens: HC31, HC34 and cl00-3). A positive HCV serology is present in 0.6% of our patient population excluding those with hepatocellular carcinoma (prevalence of 7%) and patients with positive serology for both HBsAg and HCV serology show 3% prevalence [5].

The HCV serology was negative in all 19 patients with primary MGN and MCGN. Although only 10 had repeated serology, the probability for missing an infection due to the window period was low based on the

0.6% prevalence in the population studied. The positive serology of 3% for both HBsAg and HCV also makes it unlikely for the 18 patients with HBsAg-related MGN or MCGN to harbor and HCV infection (table 2). Our observations fail to support a pathogenetic role for HCV in these two forms of glomerulopathies in our population. A report from France suggests that such an observation may not be limited to our population [1-4]. While mixed cryoglobulinemia has shown a strong association with HCV infection, it remains possible that in these patients MCGN results from mixed cryoglobulinemia rather than from HCV

infection. It is of interest to note that in 10 of our patients with primary GN, the absence of cryoglobulinemia correlated with a negative HCV serology.

Based on the negative HCV serology in primary MGN and MCGN, a putative role for the virus in these types of nephritis is lacking in our population. A mere positive serology and HCV DNA by PCR should be viewed more critically as evidence for such pathogenetic role. The implication of HCV in glomerular diseases remains to be proven and the advent of specific HCV antibodies may contribute to this attempt.

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368

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