IgA Nephropathy in Two HLA-Identical Brothers and Acute, Diffuse Proliferative Glomerulonephritis in the Third, HLA-Different Brother

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Dear Sir,

Various heredofamilial diseases involve the kidney, but there are also renal diseases in which familial aggregation can occur, such as IgA glomerulopathy, lupus nephritis, membranous nephropathy and vesicoureteral reflux [1-4]. We want to present 3 brothers who developed signs of glomerulonephritis within 6-month intervals.

Case Reports

Fig. 1. Diffuse proliferative glomerular changes in case 1. HE. 40 × 10 × 1.25.

Fig. 2. Sclerotic glomerular changes in case 2. Silver methenamine. 16 × 10 × 1.25.

Case 1

In October 1981, a 26-year-old male patient was admitted to the hospital because of edema, hypertension (210/130 mm Hg), eryth-ruria, proteinuria and serum level of urea 8.9 mmol/l after an attack of bronchitis and penicillin-induced urticaria. Renal biopsy was performed; an exudation and segmental and diffuse proliferation of mesangial cells with an enlargement of the mesangial matrix were seen on light microscopy (fig. 1). Immunofluorescence showed granular deposition of C3(+ 3), diffuse, in the mesangium and in the segments of the capillary walls. Hypocomplementemia (0.6 g/l) C3 and AST 1:160 were noted. During a 3-month follow-up, only hypertension and erythruia were persistent. Another biopsy showed the identical patho-histological findings. During the next 6 months, hypertension disappeared but erythruia was present during a year. After 9 years of follow-up, the patient was without clinical signs of nephritis. The conclusion was: acute diffuse proliferative glomerulonephritis.

Case 2

The second brother, 23 years old, was admitted in December 1981 because of attacks of proteinuria and erythruia after infections (otitis, tonsillitis) and persistent hypertension (140/105 mm Hg). Renal function was normal, AST negative, but proteinuria of 3 g/l was found. Renal biopsy showed: mesangial proliferation, partially or complete sclerosed glomeruli, pericapsular fibrosis, interstitial infiltration and hyperplastic arteriosclerosis.

(fig. 2). Diffuse, intensive granular deposition of IgA was found in the glomerular mesangium and partially in segments of the capillary walls, followed by C3 (+1) and IgG (+1). There were no signs of systemic disease, so the diagnosis was: IgA nephropathy. During the next 3 years, chronic renal failure developed, another biopsy showed further sclerotic glomerular changes. He was treated with steroids without success, end-stage renal failure developed after 5 years of follow-up.

Case 3

The third brother, 29 years old, was admitted in May 1982 because of attacks of macro-hematuria after respiratory tract infections. Renal function was normal, erythruia and mild hypertension were present all the time, proteinuria was not significant. Focal mesangial proliferation was found on renal biopsy with a slight interstitial infiltration (fig. 4). IgA deposits (diffuse and granular) were found in the glomerular mesangium (fig. 3), followed by IgG (+ 1), fibrinogen (+ 1), C3 (+ 2) and IgM (+ / -). During follow-up (9 years), progression was not noted and hypertension was regulated with a low-salt diet. Another biopsy, performed after a 2-year follow-up, showed the same findings.

HLA system showed that the brothers with IgA nephropathy (case 2 and 3) were identical: A2B5 A3B44; the brother with the acute form of glomerulonephritis was different: A2B35 A9B12.

IgA nephropathy has recently been associated with an increased frequency of HLA-

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Fig. 3. IgA glomerular deposits in case 2. $41 \times 10 \times 1.25$.

Fig. 4. Focal mesangial proliferation in case 3. Silver methenamine. $40 \times 10 \times 1.25$.

B35 and HLA-DR4 [5-7]. It is remarkable that our HLA-identical brothers with IgA nephropathy (case 2 and 3) had no B35 but it was present in the 3rd brother (case 1) with acute glomerulonephritis. IgA nephritis may not be a strictly hereditary disease (no specific gene) but be due to the permissive aberrant immune responses coded by specific genes. With this report, we can support the familial occurrence of IgA nephropathy and glomerulonephritis generally with the HLA phenotype.

References

Grünfeld JP: The clinical spectrum of hereditary nephritis. *Kidney Int* 1985;27:83-92. Meroni M, Volpi A, Usberti M, et al: Two brothers with idiopathic membranous nephropathy and familial sensorineural deafness. *Am J Kid Dis* 1990;15:269-272.

Sato K, Oguchi H, Hora K, et al: Idiopathic membranous nephropathy in two brothers.

Nephron 1987;46:174-178. Sabatier JC, Genin C, Assenat H, Colon S, Ducret F, Berthoux

FC: Mesangial IgA glomerulonephritis in HLA-identical brothers. *Clin Nephrol* 1979;11:35-38.

Hiki Y, Kobayashi Y, Tateno S, et al: Strong association of HLA-DR4 with benign IgA nephropathy. *Nephron* 1982;32:222-226. Wyatt RJ, Schneider PD, Alpers CE, et al: C4B deficiency in two siblings with IgA nephropathy. *Am J Kid Dis* 1990;15:66-71. Berthoux FC, Cagne A, Sabatier JC, et al: HLA-BW35 and mesangial IgA glomerulonephritis. *N Engl J Med* 1978;298:1034-1041.

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Brothers

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