Primary Mesangial IgA Nephropathy in São Paulo, Brazil

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Dear Sir,

From 1976 to December 1984 IgA nephropathy (IgAN) was diagnosed in 40 patients at the Nephrology Division of the Hospital das Clínicas, São Paulo University. In order to estimate the prevalence of the disease in our city, we reviewed the kidney biopsies of the same period: IgAN constituted 6.5% of all biopsies of primary glomerular nephropathies. During the period January 1981-December 1984, our Renal Transplantation Unit effected about 300 kidney transplantations, among which only 5 receptors had IgAN ($< 2\%$). Between September 1, 1984, and August 31, 1985, 95 biopsies have been made in transplanted kidneys to clarify the diagnosis of posttrans-plantation renal complications. From these biopsies only 3 (3.1%) presented with histological and immunofluores-cent characteristics compatible with the diagnosis of recurrent IgAN in the transplanted kidney. IgAN has a low incidence in São Paulo, similar to that reported in the USA [1] and Canada [2].

Of the 40 patients 67.5% were males and 32.5% females. Their age varied between 4 and 49 years and 72.5% were in the 2nd and 3rd decades of life at the beginning of the disease. From the racial standpoint, 82.5% of the patients were white, 10% were yellow and 7.5%, black. The most frequent clinical presentation, found in 62.5% of patients, was macroscopic hematuria in close association with an acute infectious process. In the remaining 37.5% of cases, the clinical presentation of the disease was very variable, and did not evoke the diagnosis of IgAN. The initial laboratory investigation showed pro-teiuria in 92.5% of patients, which was under 1 g/24 h in 40%, ranged from 1 to 3 g/day in 37.5% and was over 3.5 g/24 h in 15%. Hematuria was present in all 40 cases and the red cells displayed moderate dysmorphism.

Glomerular filtration rate, evaluated by creatinine clearance in 39 patients, was over 90 ml/min/1.73 m² in 70%, ranged between 50 and 89 ml/min/1.73 m² in 7.5% and was under 25 ml/min/1.73 m² in 20%. Total complement CH50 was found normal in 79.4% and was slightly reduced in 20.6%. The C3 fraction showed slight reduction in 9.5% and C4 was always found normal. Serum IgA was increased in 21% of the cases.

All patients were submitted to percutaneous renal biopsy. Proliferative mesangial lesions were found in 82.5% of cases; they were focal in 42.5% and diffuse in 40%. Focal mesangial proliferation was segmental in 35% and global in 7.5%. In 15% of the patients, the glomeruli were entirely normal on light microscopy and 1 case was classified as crescentic form, since 82% of the glomeruli exhibited crescents. Crescents were also found in 25% of renal biopsies, affecting 2–44% of the glomeruli. Global glomerular sclerosis was present in 35% of the cases,

ranging from 3–73% of the glomeruli. Segmental glomerular sclerosis was present in 7.5% of the patients, compromising 5–60% of the glomeruli. Tubulointerstitial changes had an intensity proportional to the severity of the corresponding glomerular lesions: focal tubular atrophy, interstitial fibrosis and mononuclear inflammatory infiltrate, attaining areas of variable extension. Thickening of the arteriolar media was found in 27.5% of patients and intimal hyalinosis in 12.5%. One patient, who clinically presented with malignant hypertension, showed arterial and arteriolar wall necrosis. The immunofluorescence findings were quite uniform, with granular deposits occupying only the mesangium, with a global and diffuse distribution in all glomeruli. IgA was the dominant immunoglobulin deposited in the 40 cases and C3 was also found in the same localization and distribution in all biopsies, generally with a lesser intensity than IgA.

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IgG was present in 85% of cases and IgM in 32.5% of the biopsies, in the majority of them with the intensity of traces. In only 1 case were granular deposits of IgM and C3 found on glomerular capillary walls. The electron-microscopic abnormalities were very uniform and consisted of mesangial matrix expansion, electron-dense deposits in the mesangium and partial fusion of podocytes from the epithelial cells. In a great number of biopsies the dense deposits extended from the mesangium to adjacent subendothelial areas. In no case were dense deposits found along the glomerular capillary walls. The glomerular basement membrane was normal in all examined glomeruli. A biopsy of clinically normal skin was done in 4 patients and immunofluorescence was negative in all.

The follow-up of 35% of patients was under 1 year and the remaining 65% were followed for periods varying from 1 to 8 years (mean 3.3 years). From this last group, 52.5% of patients maintained their renal function unchanged and normal during the follow-up, with a CCr over 90 ml/min/1.73 m². Among these patients, 2 became hypertensive during their evolution, without a loss in renal function.

Among the 40 patients, 25% suffered reduction of renal function during the follow-up period and in 7 attained end-stage renal failure. Three patients developed nephrotic syndrome along the evolution, which was of short duration and remitted spontaneously. Clinical and fundoscopic changes compatible with malignant hypertension were found in 4 cases.

Recurrent macroscopic hematuria was a significant marker of good prognosis and the finding of arterial hypertension and of proteinuria over 1 g/24 h at clinical presentation and global glomerular sclerosis on renal biopsy were indicators of bad prognosis (Fisher's test, significance at the $p < 0.05$ level).

Among the 21 patients that were followed for one year or more, 10 were treated with indomethacin or phenytoin for long periods of time, with no appreciable results.

References