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Letter to the Editor

LETTER TO THE EDITOR

Infection-related glomerulonephritis is the most common finding in renal biopsies in the very elderly in India

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Renal disease in the very elderly (≥80 years of age) is often considered the result of ageing and comorbid conditions, including hypertension and diabetes mellitus. There is reluctance to perform renal biopsies in very elderly patients. However, a significant proportion of patients in this age group have potentially reversible renal disease.

A number of previous studies analysed findings from renal biopsies in elderly patients (≥60 years of age) [1–4]. However, only a few studies have focused on very elderly patients [5, 6]. To our knowledge, this is the first Indian study analysing the spectrum of renal biopsy findings in this demographic subset. We also compared our findings with those obtained in a western population.

We retrospectively examined our records from August 2013 to October 2018 to retrieve data on native kidney biopsies performed in very elderly patients. Of a total of 16 641 patients, there were 48 (0.29%) very elderly patients who underwent native kidney biopsies during this time period. The mean age was 82.17 years (range 80–89) and the male:female ratio was 2.7:1. The most common indication for renal biopsy in this age group was acute nephritic syndrome, followed by acute kidney injury (AKI) and rapidly progressive renal failure (RPRF). The most common diagnosis obtained from the renal biopsies was infection-related glomerulonephritis (IRGN), which was diagnosed in 13 patients (27.1%). The diagnoses in the remaining 35 patients (expressed as a percentage of the total of 48 patients) included minimal change disease (14.6%), membranous nephropathy (8.4%), amyloidosis (6.3%), pauci-immune crescentic glomerulonephritis (2.1%), immunoglobulin A (IgA) nephropathy (2.1%), membranoproliferative pattern of glomerular injury (2.1%), acute tubular injury (18.8%), acute interstitial nephritis (4.2%), light chain cast nephropathy (4.2%), light chain proximal tubulopathy (2.1%), light chain cast nephropathy with light chain proximal tubulopathy (2.1%), hypertensive nephrosclerosis (2.1%), diabetic glomerulosclerosis (2.1%) and acute pyelonephritis (2.1%).

Five patients diagnosed with IRGN presented with nephritic syndrome, five patients with RPRF, two patients with nephrotic syndrome and one patient with AKI (Table 1). Of these 13 patients with IRGN, crescents were identified in 7 patients. Two of three patients diagnosed with amyloid light chain (AL) amyloidosis presented with nephrotic syndrome and one with chronic kidney disease. In all three patients, underlying plasma cell dyscrasia was not clinically suspected. One patient was diagnosed with IgA nephropathy who presented with massive proteinuria.

One of the 48 patients developed perirenal haematoma that was managed medically. No major complications occurred in the remaining 47 patients. Further, 77.1% of our patients had a histopathological diagnosis that could potentially alter their treatment (Table 1). Even in the remaining 22.9% of patients, renal biopsy helped in prognostication and also in avoiding the use of potentially harmful empirical treatment.

The distribution of renal diseases in the very elderly Indian population is markedly different from that in Western populations (Table 1). In our study, minimal change disease was the most common cause of nephrotic syndrome, compared with benign nephrosclerosis as reported by Nair *et al.* [6] (Table 1).

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Table 1. Renal biopsy findings in a very elderly Indian population compared with a corresponding Western population

Clinical presentation	Diagnosis	Our study ($N = 48$), n (%)	Nair *et al.* [6] ($N = 100$), n (%)
Nephrotic syndrome		**16 (33.3)**	**33 (33)**
	Minimal change disease	7 (43.8)	6 (18.2)
	Focal segmental glomerulosclerosis	0	5 (15.2)
	Membranous nephropathy	4 (25)	2 (6.1)
	IRGN	2 (12.5)	0
	Amyloidosis	2 (12.5)	3 (9.1)
	Benign nephrosclerosis	0	14 (42.4)
	Diabetic nephropathy	0	1 (3)
	IgA nephropathy	1 (6.2)	1 (3)
	Other	0	1 (3)
RPRF		**9 (18.8)**	**6 (6)**
	IRGN	5 (55.6)	0
	Acute tubular injury	2 (22.2)	0
	Pauci-immune crescentic GN	1 (11.1)	2 (33.2)
	Crescentic GN, anti-GBM disease	0	1 (16.7)
	Light chain cast nephropathy	1 (11.1)	1 (16.7)
	Focal segmental glomerulosclerosis	0	1 (16.7)
	Crescentic GN, amyloidosis	0	1 (16.7)
Acute nephritic syndrome		**6 (12.5)**	**20 (20)**
	IRGN	5 (83.3)	0
	Membranoproliferative pattern of glomerular injury	1 (16.7)	1 (5)
	Crescentic GN, anti-GBM disease	0	1 (5)
	Crescentic GN, pauci-immune	0	12 (60)
	Granulomatous vasculitis	0	1 (5)
	IgA nephropathy	0	2 (10)
	Cryoglobulinaemia, type I	0	1 (5)
	Cholesterol emboli	0	1 (5)
	Non-specific changes/other	0	1 (5)
AKI		**14 (29.2)**	**23 (23)**
	Acute tubular injury	7 (50)	2 (8.7)
	Acute tubulointerstitial nephritis	2 (14.3)	0
	Acute interstitial nephritis	0	5 (21.7)
	IRGN	1 (7.1)	0
	Acute pyelonephritis	1 (7.1)	0
	Light chain cast nephropathy	1 (7.1)	3 (13)
	Light chain proximal tubulopathy	1 (7.1)	0
	Light chain cast nephropathy with light chain proximal tubulopathy	1 (7.1)	0
	Light chain deposition disease	0	1 (4.4)
	Benign nephrosclerosis	0	5 (21.7)
	Diabetic nephropathy	0	2 (8.7)
	Crescentic GN, pauci-immune	0	2 (8.7)
	Cholesterol emboli	0	1 (4.4)
	IgA nephropathy	0	2 (8.7)
Chronic kidney disease		**2 (4.2)**	**17 (17)**
	Diabetic nephropathy	1 (50)	1 (6)
	Amyloidosis	1 (50)	0
	Benign nephrosclerosis	0	15 (88)
	Focal segmental glomerulosclerosis	0	1 (6)
Asymptomatic urinary abnormalities		**1 (2.1)**	**1 (1)**
	Hypertensive arterionephrosclerosis	1 (100)	1 (100)

Figures in bold indicate the total number of cases under each clinical presentation. GBM, glomerular basement membrane; GN, glomerulonephritis.

Our study also showed IRGN was the most common cause of acute nephritic syndrome, whereas only one patient had IRGN in the study by Nair *et al.* [6]. There has been a recent shift in age predominance in patients with IRGN [7]. In Nair *et al.*'s study, 34% of adults with IRGN were elderly [8], compared with <6% reported about four decades ago [9]. The spectrum of renal diseases in the very elderly Indian population is distinct, and IRGN was the most common diagnosis found here. Our study confirms that histopathological analyses help in the choice of appropriate treatment, as well as in estimating prognosis in very elderly patients. There were no major biopsy related complications in our series.

CONFLICT OF INTEREST STATEMENT

None declared.

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