

Patterns of biopsy-proven kidney disease in the Eastern Cape, South Africa

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Abstract

Background: There are minimal data on the biopsy-proven patterns of kidney disease from resource-limited settings, particularly in Africa.

Methods: We conducted a retrospective interim analysis of 386 native kidney biopsies performed at Livingstone Hospital, Gqeberha, Eastern Cape Province, South Africa between 1 January 2012 to 30 December 2023. The study was approved by the University of Cape Town human research ethics committee (HREC 731/2014).

Results: The mean age was 34 years, 51% female. HIV prevalence was 28%. The frequencies of clinical indication for biopsy were acute kidney injury (26%), nephrotic syndrome (31%), nephritic syndrome (25%), chronic kidney disease (12%) and asymptomatic urinary abnormalities (6%). Of all biopsies analysed in this interim analysis (N=386), the main diagnostic categories included glomerulonephritis (72.5%), tubulointerstitial disease (15.0%), hypertension-related disease (8.8%) and end-stage kidney disease (2.8%). The most common overall histological pattern of injury was mesangiocapillary GN (n= 69) of which 55% were considered primary followed by membranous GN (n=41) of which 34% were considered primary. Secondary causes for mesangiocapillary and membranous GN included lupus nephritis (84% and 78% respectively) and HIV-related (9% and 11% respectively). Of those with GN (n=280), 190 (67.9%) were considered secondary. The most common overall causes for GN were as follows: Lupus nephritis (25.0%), HIV-related GN (15.4%), primary mesangiocapillary GN (11.1%), diabetic nephropathy (9.6%), primary focal segmental glomerulosclerosis (6.4%) and primary membranous GN (6.1%). IgA nephropathy accounted for only 3(1%) of GN cases.

Conclusion: Infectious and autoimmune diseases are important causes of GN in our setting. Similar to other African biopsy cohorts, mesangiocapillary GN was the most common primary GN while IgA nephropathy remains rare.