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Long Term Outcomes of Patients Receiving Kidney Biopsy-A Single Medical Center Experience

Ming-Yuan Ko, Chia-Yu Tsai, Chiz-Tzung Chang
Department of Internal Medicine-Nephrology, Divisions of Nephrology, China Medical University Hospital, Taichung, Taiwan, Taiwan

Objectives : Glomerular disease is a global health issue, and significant contributor to chronic kidney disease (CKD) progression and end-stage kidney disease. Kidney biopsy is essential for diagnosing glomerular diseases. This study aimed to analyze the clinical characteristics, histopathological findings, and long-term outcomes of patients undergoing kidney biopsy in a medical center in central Taiwan.
Methods : This retrospective cohort study included 609 patients with major pathologic diagnosis who underwent kidney biopsy at China Medical University Hospital between December 2007 and November 2019. The 6 major renal pathologies were minimal change disease (MCD), focal and segmental glomerulosclerosis (FSGS), membranous nephropathy (MN), IgA nephropathy (IgAN), diabetic nephropathy (DN), and lupus nephritis (LN). We recorded patients' serum creatinine, urine protein excretion and followed up their kidney function until either complete remission, uremia, or patient mortality.
Results : Among the 609 patients, LN was the most common diagnosis (16.4%), followed by FSGS (15.2%), MCD (13.6%), IgAN (11.9%), DN (10.1%), and MN (8.9%). DN had the worst prognosis, with the highest rates of dialysis dependency (63.0%) and mortality (12.3%), as well as the fastest decline in kidney function. In contrast, MCD showed the most favorable outcomes, with the lowest dialysis dependency rate (3.7%) and mortality rate (1.8%). FSGS exhibited intermediate outcomes with kidney survival (77.0%) and patient survival (91.0%), while MN had a relatively high mortality rate (12.7%) despite lower dialysis dependency. IgAN had good patient survival (96.8%), but intermediate kidney survival (76.8%) similar to FSGS. Significant differences in clinical characteristics, such as age, gender distribution, CKD stages, and proteinuria levels, were observed among groups.
Conclusions : This study highlights the diverse clinical presentations and outcomes of glomerular diseases in central Taiwan, emphasizing the poor prognosis of DN and favorable outcomes of MCD. Variations in disease prevalence compared to other regions suggest potential genetic or environmental influences.

Table 1.png

Table 1. Outcomes of patients with different pathological diagnoses in renal biopsy

Outcome	Total (N=609)	MCD (N=109)	FSGS (N=122)	MN (N=71)	IgAN (N=95)	LN (N=131)	DN (N=81)	P Value
Dialysis dependent	126 (20.7%)	4 (3.7%)	28 (23.0%)	7 (9.9%)	22 (23.2%)	14 (10.7%)	51 (63.0%)	<0.05#
Mortality	40 (6.6%)	2 (1.8%)	11 (9.0%)	9 (12.7%)	3 (3.2%)	5 (3.8%)	10 (12.3%)	<0.05#

Outcomes are presented as frequencies(percentage)
Chi-Squared Test

Table 1.png

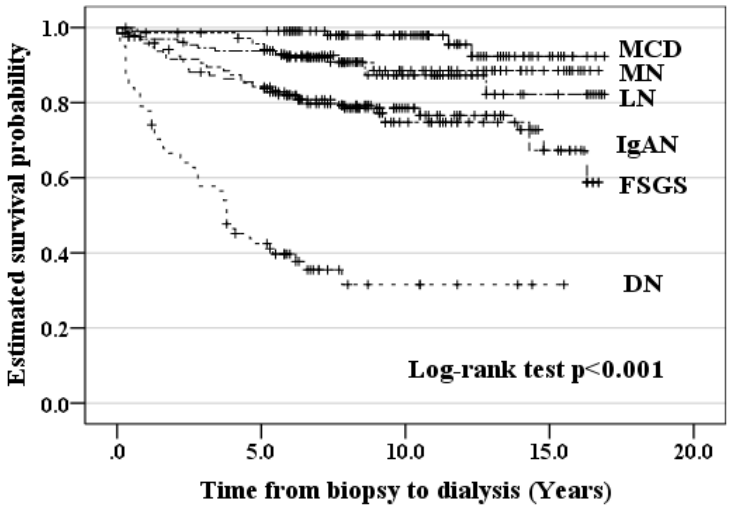

Figure 1-a. Kidney survival curve (Time from biopsy to dialysis) in all groups

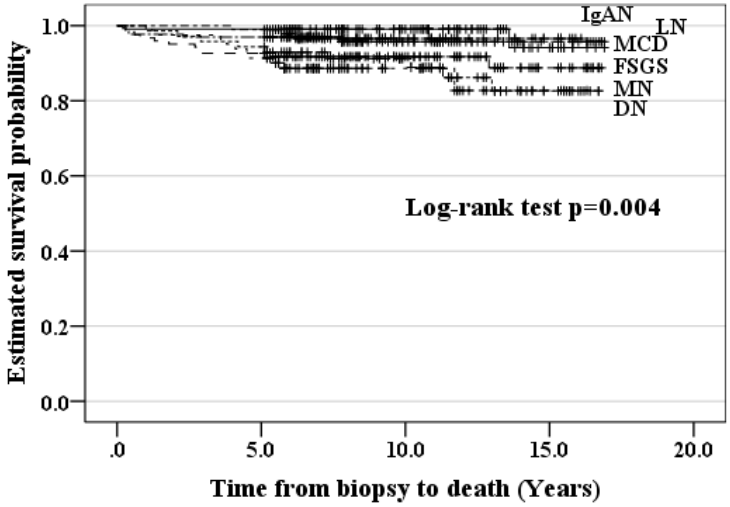

Figure 1-b. Patient survival curve (Time from biopsy to death) in all groups

MCD, minimal change disease; FSGS, focal and segmental glomerulosclerosis; MN, membranous nephropathy; IgAN, IgA nephropathy; LN, lupus nephritis; DN, Diabetic nephropathy