



Shaping Tomorrow's Nephrology: Insight-Driven Kidney Care

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Primary membranous nephropathy is a disease that is studied based on pathological biopsy analysis

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Objectives : The aim of this study was to investigate the correlation between the pathological changes in the kidney and their impact on clinical presentations and kidney function in Mongolian patients with MN proven by kidney biopsy.

Methods : A retrospective analysis of 305 native kidney biopsies performed from 2013 to 2023 at First Central Hospital of Mongolia was conducted. Renal function was calculated using the CKD-EPI (2021) formula. Histopathological findings were examined by light microscopy (LM) and immunofluorescence (IF) microscopy. The study excluded secondary MN based on viral markers, tumor markers, and serological tests. Statistical analysis was performed using STATA 17.0 software. The study design was approved by the Ethics Committee of the MNUMS, Mongolia. (№ 2023/3-07)

Results : A total of 305 kidney biopsies performed at the FCHM between 2011 and 2023 resulted in the diagnosis of 51 cases of primary MN. The mean age of patients with membranous nephropathy was 40.6±9.3 years, and 36 (70.59%) were male and 15 (29.41%) were female. In the clinical presentation of primary MN, nephrotic syndrome was present in 76.47%. The analysis of kidney biopsy revealed that 94.12% showed thickening of GBM, 31.2% showed double contour, 88.24% showed holes in the GBM, and 54.9% showed spike-like changes. (Fig 1) Also interstitial inflammation in 21 (41.18%), interstitial fibrosis in 15 (29.41%), and tubular atrophy in 20 (39.22%). The globally sclerosis was significantly associated with increased systolic and diastolic blood pressure (OR = 4.35, 95% CI [1.66–10.87], p = 0.01). Double contour formation was also significantly associated with arterial hypertension (p = 0.01). In addition, interstitial fibrosis (p = 0.003) and vascular changes (p = 0.001) were significantly associated with decreased estimated glomerular filtration rate (eGFR). (Table 1)

Conclusions : Arterial hypertension was significantly associated with glomerular global sclerosis. Interstitial fibrosis and vascular changes adversely affected renal function.

Figure 1.png

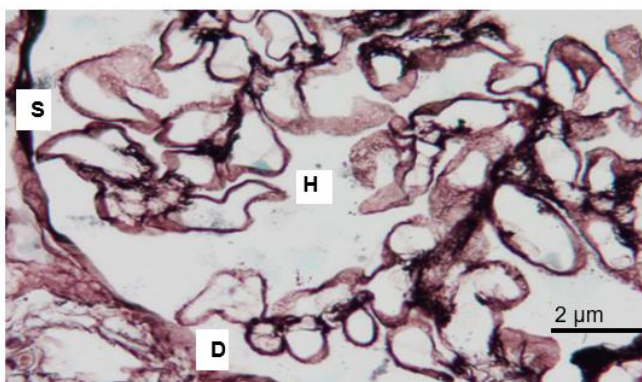


Figure 1. Pathological changes in membranous nephropathy (Light microscopy). Methenamine Silver Staining, 100*10 (FCHM, 39 female). D-double contour, H- holes, S- spike-like feature

Figure 1.png

Table 1. The correlation between interstitial fibrosis and kidney function (Masson-trichrome staining, LM)

	Interstitial fibrosis (mean±SD)	No interstitial fibrosis (mean±SD)	P-value
N	N=15	N=36	
Time from diagnosis of glomerulonephritis to perform biopsy (month)	74.60±98.43	19.00±24.48	0.0024
CKD_group			0.0002
eGFR (ml/min/1.73m ²)	95.53±20.77	114.56±18.97	0.0026