Adult Minimal Change Nephrotic Syndrome: Predictors of Remission and Long-term Outcomes

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Background: Minimal change disease (MCD) is a common cause of nephrotic syndrome in adults that often respond well to steroids. However, predictors of relapse from treatment have not been clearly identified.

Objective: To identify predictors of remission and long-term outcomes of MCD.

Methods: A single referral center retrospective study was done to identify clinical, laboratory and pathological predictors influencing remission both short-term and long-term outcomes.

Results: of 119 biopsy-confirmed cases of MCD during 1999-2017, 61 (51%) were female. The mean age was 40 ± 16 years and cases were followed for a median of 91 months (24-120). Hypertension and acute kidney injury (AKI) were presented in 27 (23%) and 26 (22%) of patients, respectively. The median eGFR, LDL, and 24-hour urine protein were 93 ml/min (60-120), 213 mg/dl (135-285), and 3577 mg/24 h (475-6552), respectively. The biopsy registry had a mean of 12.5 glomeruli (± 5.7). Mesangial proliferation was presented in 4 cases (3%) and IgM was presented in 77 cases (65%). Corticosteroids were initiated in 115 (97%) patients and 59% were corticosteroid sensitive. Complete remission was observed in 75% of cases, while 30% had subsequent relapses. AKI at presentation was associated with slower remission time, while the higher eGFR at baseline was associated with steroid resistance. Repeated biopsy demonstrated conversion from MCD to focal segmental glomerulosclerosis (FSGS) in 3 cases (3%). On long-term follow-up, 1 patient progressed to end-stage kidney disease (ESKD), and 3 patients died (3%) due to infection.

Conclusion: Minimal change disease in adults with AKI is associated with longer remission period. Steroid resistant individuals tend to have renal progression and require more immunosuppressives for treatment.

Keywords: Minimal change disease, Nephrotic syndrome, Remission