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Analysis of clinicopathological characteristics of membranous nephropathy with concomitant malignancy and literature review

Xiaoying Hu¹, **Guoqin Wang**¹, Nan Ye¹, Xiaoyi Xu¹, Weiyi Guo¹, Lijun Sun¹, Hongrui Dong¹, Hong Cheng¹

¹Department of Internal Medicine-Nephrology, Beijing Anzhen Hospital, Capital Medical University, China

²Department of Internal Medicine-Nephrology, Affiliated Hospital of Chifeng University, China

Objectives : To figure out the clinicopathological characteristics of MN with concomitant malignancy.

Methods : Patients diagnosed with renal biopsy-proven MN and comorbid malignancy detected within 5 years before and after MN diagnosis were included. The control group were diagnosed with renal biopsy-proven IMN with 5 years of follow-up data. We present a comprehensive analysis of MN with concomitant malignancy in our cohort and literature review.

Results : A total of 19 MN patients with concomitant malignancy were evaluated at our center; among them, 68.4% were male, and the median age was 57.0 (45.0, 69.0) years, with digestive system malignancy (36.8%) ranking as the predominant type. IHC showed that the highest percentage for PLA2R-only positivity (68.4%) followed by THSD7A-only positivity (15.8%). Only 2 of 5 patients expressed the same specific MN antigen on kidney and tumor. Screening 17 articles encompassing 21 patients in whom MN-specific antigen staining was performed on both renal and tumor tissues simultaneously. Among these patients, 71.4% were male, and the median age was 61.0 years (56.3, 72.8), with 33.3% digestive system malignancy. Notably, THSD7A accounted for the highest proportion of MN antigens (66.7%); among these patients, 78.6% also exhibited positive tumor THSD7A staining. The clinicopathological data of the above two cohorts were pooled and compared with IMN patients at our center. MN patients with malignancy were older at the time of renal biopsy ($P=0.017$), had a lower eGFR ($P=0.035$) and demonstrated a lower rate of CR/PR after treatment ($P<0.001$). The rate of PLA2R positivity in the glomeruli was significantly lower ($P<0.001$), while the rate of THSD7A positivity was significantly higher ($P<0.001$). Renal tissue IgG subclass staining showed that the rate of IgG4 positivity was significantly decreased ($P<0.001$), with the increased rate of IgG2 ($P=0.033$).

Conclusions : Malignancy screening should be more actively performed for MN patients with the above characteristics.