

Title: *Subclinical Glomerular Pathology in Patients with Solid Tumors: An Ongoing Multicenter Histopathological, Immunofluorescence and Electron Microscopy Study*

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Background: Cancer-associated glomerular diseases represent an important component of onconeurology; however, current knowledge is largely derived from clinically overt nephrotic or nephritic syndromes. Subclinical glomerular abnormalities in patients with solid tumors remain poorly characterized. Advanced pathological techniques, particularly transmission electron microscopy (TEM), may reveal occult glomerular lesions undetectable by routine clinical evaluation, light microscopy, or immunofluorescence alone.

Aim: To determine the prevalence and spectrum of subclinical glomerular abnormalities in patients with solid tumors using light microscopy, immunofluorescence (IF), and TEM, and to compare findings with age-matched non-neoplastic controls.

Methods: This ongoing multicenter cross-sectional case-control study will enroll adults undergoing nephrectomy or partial renal resection for renal or extrarenal solid tumors, together with controls undergoing nephrectomy for non-neoplastic conditions. Non-tumorous renal tissue will be evaluated by light microscopy, IF (IgG, IgA, IgM, C3, C1q), Congo red staining, and TEM. Clinical data including proteinuria, kidney function, circulating immune complexes, tumor markers, and viral serology will be collected and correlated with pathological findings.

Primary Outcome: Prevalence and morphological spectrum of subclinical glomerular lesions identified by combined histopathological modalities.

Expected Results: We anticipate identifying a broader and previously underrecognized spectrum of glomerular abnormalities, including ultrastructural podocyte injury, immune complex-related changes, and other lesions detectable only by TEM. Novel histopathological patterns associated with malignancy may improve understanding of early cancer-associated kidney injury.

Conclusions: This study aims to define the true burden of occult glomerular disease in patients with solid tumors and provide new insights into the immunopathological mechanisms of cancer-associated kidney injury. The findings may support earlier renal surveillance in oncology patients and help establish a rationale for routine nephropathological assessment, including ultrastructural evaluation, of nephrectomy and renal resection specimens.