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Glomerular Macrophage is an Indicator of Early Treatment Response in Diffuse Proliferative Lupus Nephritis

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Abstract

Background: Patients with diffuse proliferative lupus nephritis (class IV) who responded to treatment within 6 months had better renal outcome than those who did not. Glomerular macrophage is known to be associated with poor renal outcome in glomerular diseases.
Objective: To evaluate association between glomerular macrophage number and early treatment response in lupus nephritis class IV patients.
Material and Method: Renal biopsies (n = 90, 86 females) diagnosed with lupus nephritis class IV were included in the study. The patients were divided into 2 groups (n = 45 each) according to response to treatment within 6 months. The treatment response group was defined as having decreased serum creatinine at least 25% from baseline and 24 hr urine protein or UPCR (urine protein creatinine ratio) < 1. The non-response group was defined as stable or increased serum creatinine and 24 hr urine protein or UPCR > 1. Immunohistochemistry for macrophage marker (CD68) was performed and the glomerular macrophages were counted on each biopsy. The relevant clinicopathologic data were collected.
Results: The glomerular macrophage number in response and non-response group was 4.5 + 2.5 and 6.2 + 4.5 respectively ($p = 0.029$). The glomerular macrophage number was conversely and inversely correlated with activity ($r = 0.281$, $p = 0.007$) and chronicity ($r = -0.358$, $p < 0.001$) index, respectively.
Conclusion: Lupus nephritis class IV patients who responded to treatment within 6 months had lower glomerular macrophages than those who did not. The glomerular macrophage number may be used to determine treatment response in lupus nephritis class IV patients.

Keywords: Lupus nephritis, Macrophages, Immunohistochemistry, Treatment response, Prognostic factor

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