

Original article

Kidney injury in systemic lupus erythematosus: Lack of correlation between clinical and histological data[☆]

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ABSTRACT

Background: The existence and type of renal involvement influences the prognosis of systemic lupus erythematosus and this information may be critical when it comes to taking appropriate therapeutic decisions.

Objective: To evaluate statistical correlations between clinical and histological data in patients with biopsied lupus nephropathy.

Methods: Review of clinical information in adult kidney biopsy requests reported between 2002 and 2014 with a definitive clinical and histopathological diagnosis of renal involvement in systemic lupus erythematosus.

Results: 134 cases (86% women), aged 15–59 years. Indication for renal biopsy: asymptomatic urinary abnormalities (30%), nephrotic proteinuria without hypoalbuminaemia (9%), nephrotic syndrome (19%), renal failure (40%) and two cases without clinical renal manifestations. The most common lesions were purely proliferative (68%). In patients with asymptomatic urinary abnormalities, 35% were class IV, 30% class III, 23% mixed, 10% class V and 2% class II. In subjects with nephrotic proteinuria, 75% were class IV, 17% mixed and 8% class III. In nephrotic syndrome patients, 46% were class IV, 27% class V, 19% mixed and 8% class III. In renal failure subjects, 67% were class IV, 22% mixed, 7% class III and 4% class V. These proportions were not statistically different. Although class IV showed the worst renal function, almost half (44%) of those without renal failure belonged to this class.

Conclusion: We could not demonstrate a consistent clinical–pathological relationship that predicts patterns or severity of histological findings based on the clinical profile in patients with systemic lupus erythematosus and renal manifestations. These results highlight the importance of biopsy as a key diagnostic tool in this disease.

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Lesiones renales en el lupus eritematoso diseminado: ausencia de relación entre datos clínicos e histológicos

RESUMEN

Palabras clave:

Nefritis lúpica
Biopsia renal
Decisiones clínicas

Antecedentes: La presencia y patrón morfológico del compromiso renal afecta el pronóstico del lupus eritematoso sistémico, información que puede ser indispensable para tomar decisiones terapéuticas apropiadas.

Objetivo: Evaluar relación estadística entre datos clínicos e histológicos en pacientes con nefropatía lúpica biopsiada.

Métodos: Revisión de información clínica en solicitudes de biopsias renales de adultos, informadas entre 2002 y 2014, con diagnóstico clínico e histopatológico inequívoco de compromiso renal por lupus eritematoso sistémico.

Resultados: Ciento treinta y cuatro casos (86% mujeres), edad 15-59 años. Cuadro clínico: 30% alteraciones urinarias asintomáticas, 9% proteinuria nefrótica sin hipoalbuminemia, 19% síndrome nefrótico y 40% por insuficiencia renal, existiendo 2 casos sin manifestaciones clínicas renales. Las lesiones más frecuentes fueron proliferativas puras (68%). De los que tenían alteraciones urinarias asintomáticas, 35% eran clase IV, 30% clase III, 23% mixtas, 10% clase V y 2% clase II. Entre los de proteinuria nefrótica, 75% clase IV, 17% mixtas y 8% III. De los de síndrome nefrótico, 46% clase IV, 27% V, 19% mixtas y 8% clase III. Entre los de insuficiencia renal, el 67% eran IV, 22% mixtas, 7% III y 4% V. Estas proporciones no fueron estadísticamente diferentes. Aunque la peor función renal fue observada en la clase IV, casi la mitad (44%) de aquellos sin insuficiencia renal eran de esta misma clase.

Conclusión: No se demuestra una relación clínico-histológica consistente que permita predecir los patrones ni la gravedad de los hallazgos histológicos a partir del cuadro clínico en el lupus eritematoso sistémico con manifestaciones renales. Esos resultados refuerzan la importancia de la biopsia como herramienta diagnóstica fundamental en esta enfermedad.

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Introduction

Systemic lupus erythematosus (SLE) is a multi-systemic autoimmune disease that may involve almost all body organs. Renal involvement may be present in more than half of the patients at the first year of diagnosis,^{1,2} with a significant impact on morbidity and mortality,³ and the inherent risk of progression to advanced chronic renal failure requiring dialysis or transplantation.⁴⁻⁶ A 10% of SLE patients with renal involvement will reach terminal chronic kidney disease, which can be up to 40% at 15 years in cases of diffuse proliferative lesions.⁷ For this reason, it is important to identify and categorize individuals showing clinical renal involvement so an appropriate treatment is initiated to stop the progression of the disease.⁸ Although some researchers have suggested that the experience in the management of lupus nephropathy, together with clinical information, are sufficient to indicate adequate treatment,⁹⁻¹¹ adherents to this attitude are being progressively reduced.

The introduction of routine renal biopsy in the 1950s, advances in immunofluorescence techniques and electron microscopy in the 1960s, together with knowledge of the immunopathogenesis of glomerular damage, allowed us to know the different histopathological patterns associated with SLE.¹² There has been progressive improvement in the histopathological classification criteria recommended by the World Health Organization in the 70s, which has been

reviewed several times to reach the current classification ISN-RPS 2003.¹³ This has allowed to conform the basis for prospective therapeutic and prognostic studies¹⁴ in an effort to identify those patients with a higher risk of progression that justifies the use of more aggressive immunosuppressive therapies.

Knowing the importance of histopathological findings in therapeutic decisions in SLE patients with renal involvement, we wanted to investigate if patterns of clinical presentation can reliably predict the findings obtained from a renal biopsy.

Material and methods

The cases were selected from the kidney biopsy file of the Nephrology Unit of the Universidad Austral de Chile, Regional Hospital of Valdivia. The study included the material reported between 2002 and 2014 corresponding to subjects older than 13 years whose clinical-histopathological diagnosis corresponded unequivocally to the renal involvement of the LES and with sufficient clinical information justifying the indication of the histological study and a complete anatomopathological evaluation including optical microscopy, immunofluorescence and electron microscopy. In the case of the samples obtained prior to the clinical use of the ISN-RPS 2003 classification, they were re-analyzed and classified according to the new criteria.

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