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ORIGINAL ARTICLE

The spectrum of glomerular disease between the years 2003 and 2015 in Columbia: A review of 12,613 cases

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KEYWORDS
Epidemiology;
Glomerulonephritis;
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Abstract
Background: The prevalence of glomerular disease (GD) varies according to the different socio-demographic characteristics of each population. For the first time we present the prevalence of the different forms of GD among patients from several different areas of Columbia.
Methods: Data from 12,613 renal biopsies studied at our University Hospital between 2003 and 2015 was reviewed. Pathology results were classified according to a list of renal diseases proposed by various authors.
Results: Focal segmental glomerulosclerosis was present in 22%, IgA disease in 21%, Lupus nephritis in 17%, membranous glomerulonephritis in 13% and thin basal membrane disease in 9%.
Conclusions: This study confirms that focal segmental glomerulosclerosis and IgA disease are the most prevalent GDs found in Columbian patients. This is the first study to analyze GDs in a Columbian population and we recommend that a national registry system be created to collect comprehensive information from future research.

PALABRAS CLAVE
Epidemiología;
Glomerulonefritis;
Biopsia renal;

El espectro de enfermedades glomerulares entre los años 2003 y 2015 en Colombia: una revisión de 12.613 casos

Resumen
Antecedentes: La prevalencia de las enfermedades glomerulares varía según las características sociodemográficas de cada población. Por primera vez presentamos la prevalencia de

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Patología renal;
Registro

las diferentes formas de enfermedad glomerular (EG) entre pacientes de varias regiones de Colombia.
Método: Se revisaron los datos de 12.613 biopsias renales estudiadas en nuestro hospital universitario entre los años 2003 y 2015. Se clasificaron los resultados anatomopatológicos según una lista de enfermedades renales propuesta por varios autores.
Resultados: Se encontró glomeruloesclerosis focal y segmentaria en el 22%, enfermedad IgA en el 21%, nefritis lupoide en el 17%, glomerulonefritis membranosa en el 13% y enfermedad de la membrana basal delgada en el 9%.
Conclusiones: Nuestro estudio confirma que la glomeruloesclerosis focal y segmentaria y la enfermedad IgA son los más prevalentes entre pacientes colombianos. Esto es el primer estudio que ha analizado EG en la población colombiana, y recomendamos la creación de un registro nacional para recopilar y completar información de investigaciones futuras.

Introduction

Renal biopsy is the gold standard for the diagnosis of glomerular disease (GD) as it provides precise information about clinical behavior which influences mortality and morbidity.[1] Currently, primary GDs are a major problem in clinical nephrology and currently the fourth cause of end-stage renal disease (ESRD) worldwide.[1,2] Among patients in renal replacement therapy, primary glomerulopathies, diabetic nephropathy, nephrosclerosis, angioesclerosis and interstitial nephritis are the main causes of end-stage renal disease (ESRD).[2] The prevalence of GD varies according to different socio-demographic characteristics, in Europe and North-America the most common causes are focal segmental glomerulosclerosis (FSGS) and IgA nephropathy (IGAN).[1,3] However, descriptive statistics related to GD are not well known. The aim of this study was to describe the prevalence of GD in the biggest cohort of renal biopsies reported to date.

Materials and methods

We analyzed retrospectively kidney biopsies, studied in our center and diagnosed as GD, during the period January 2003 to August 2015. All cases were processed according to the recommendations previously exposed by Walker et al.[4] and evaluated by light microscopy, immunofluorescence and electron microscopy. Cases diagnosed as interstitial, tubular disease and conditions where the main damage was related with arterial or arteriolar vascular injury were excluded. A final sample of 12,613 including both adults (>18 years-old) and children (<18 years-old) was obtained. Clinical information, including biopsy indication and follow up, was not available in the vast majority of the cases. Information related to age, gender, histopathological diagnosis and additional findings made by the pathologist were included in each case. Finally, we reviewed the literature for available information related to the classification of renal diseases; information previously reported by Silva et al.,[5] D'Agati et al.,[3] North Carolina University (2014)[6] and Jon C et al.[7] was used to make a final list of GD (Table 1). This study was reviewed and endorsed by the Corporate Research Ethics Committee of the University Hospital Foundation Santa Fe de Bogotá.

Table 1 Proposed list of glomerular diseases.

1. Focal and segmental glomerulosclerosis
2. IgA nephropathy and Henoch-Schönlein purpura
3. Lupus nephritis
4. Membranous glomerulonephritis
5. Thin basement membrane disease
6. Podocytophaty compatible with minimal change disease
7. Diabetic nephropathy
8. Membranoproliferative glomerulonephritis (Type I, Type II Dense Deposit Desease, Type III)
9. Amyloidosis
10. Hereditary nephropathy: Alport syndrome
11. Anti-neutrophil cytoplasmic autoantibody-associated glomerulonephritis and Pauci-immune: microscopic polyangiitis
12. Non diabetic nodular glomerulosclerosis
13. Congenital nephrotic syndrome
14. Collagenofibrotic glomerulopathy
15. IgM nephropathy
16. C1q nephopathy
17. Diffuse proliferative glomerulonephritis/postinfectious glomerulonephritis
18. Fabry syndrome
19. Goodpasture syndrome
20. Segmental and necrotizing glomerulonephritis
21. Rapidly progressive glomerulonephritis
22. C3 Glomerulopathy
23. Lecithin-cholesterol acyltransferase (LCAT) deficiency nephropathy
24. Light-chain (AL)-amyloid/nonamyloid fibrillary or Fibrillary glomerulonephritis/immunotactoid glomerulonephritis/cryoglobulinemic glomerulonephritis
25. Small vessel vasculitis

Results

GD was more prevalent in adults, 78.6% (9911) and in females, 55.8% (7036). Amongst adults, the majority of patients were female, 57.4% (5692) whereas amongst children males were slightly predominant, 50.2% (1358)

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