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Study of Demographic Profile and Histological Characteristics in Patients of Biopsy Proven Iga Nephropathy

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KEYWORDS
CKD, IgA nephropathy, Mesangial hypercellularity

ABSTRACT:
Background: IgA nephropathy is the most common primary glomerulonephritis worldwide, accounting for 20 to 40 percent of patients with primary glomerulonephritis who undergo biopsy. Present study was aimed to study of histological characteristics & clinical outcome in patients of biopsy proven IgA nephropathy.
Material and Methods: Present study was single-center, prospective, observational study, conducted in patients of age > 12 years, with biopsy proven IgA Nephropathy.
Results: The median age of patients in this study was about 37years. Male and female patients were almost evenly distributed in this study. Microhematuria and proteinuria was seen in almost all the patients at the time of biopsy in this study. The most common histological finding in this study was Mesangial hypercellularity, seen in about 90% patients.
Conclusion: Microhematuria and proteinuria was noted almost all the patients. The most common histological finding in this study was Mesangial hypercellularity, seen in about 90% patients.

INTRODUCTION

IgA nephropathy was first described by Berger and Hinglais in 1968, and is also known as Berger disease.[1,2] IgA nephropathy is the most common primary glomerulonephritis worldwide, accounting for 20 to 40 percent of patients with primary glomerulonephritis who undergo biopsy in Western Europe, Asia, and Australia.[3] IgA nephropathy is the most common primary glomerular disease causing kidney failure.[4,5,6]

Many affected individuals develop chronic, slowly progressive renal injury. It is estimated that 1%–2% of all patients with IgA nephropathy will develop ESRD each year from the time of diagnosis.[7] IgA Nephropathy accounts for 7-16% of most biopsy samples from India.[8] Not many studies have been done in India to study clinical course, risk factors and outcome of the disease. Until recently IF facility to study renal pathology was not readily available for many centers

We at MIMS have a robust native kidney biopsy program with IF back up since 2002 and majority of the patients has been undergoing follow up care. Present study was aimed to study of histological characteristics & clinical outcome in patients of biopsy proven IgA nephropathy.

MATERIAL AND METHODS

Present study was single-center, prospective, observational study, conducted in department of Nephrology, Malabar Institute Of Medical Sciences Calicut, Kerala, India. Study duration was over 18-months period i.e. from August 2017 to January 2019. Study was approved by institutional ethical committee.
Inclusion criteria

- Patients of age > 12 years, with biopsy proven IgA Nephropathy, willing to participate in present study

Exclusion criteria

- Patients on whom laboratory data is not available.
- Patients not on regular follow up.
- Age <12years.
- Patients not consenting to be part of study.

Study was explained to participants in local language & written informed consent was taken. The

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patients enrolled into the study were followed up periodically over one and half year into three clinic visits. The patients were evaluated for BP recordings, proteinuria estimation by Urine spot Protein Creatinine ratio, GFR calculated using the CKD-EPI method, hematuria, use of immunosuppressive agent and RAASi (Renin Angiotensin Aldosterone System inhibitor). Transplanted or renal replacement therapy requiring patients last data was included and further follow up was stopped. The median duration of follow up was 49.5 months.

All Data was entered using Microsoft Office Excel 2007 and analyzed using IBM Statistical Package for Social Science (SPSS) version 19. A continuous variable such as age was summarized using mean with standard deviation and Median (Interquartile Range). UPCR was categorized into three categories and GFR values were categorized into 5 stages. Categorical variables such as gender, histological features of IgA nephropathy, indication for immunosuppression, UPCR categories, GFR stages, ≥50% reduction in proteinuria and ≥50% reduction in GFR values were summarized using proportions (Percentages).

RESULTS

82 patients were enrolled in the study as per inclusion criteria. Out of 82 patients, 43 were males and 39 were females, almost equal for both sexes. The median age is 37 years. All the 82 patients had some degree of microhematuria (100%) and almost all patients had some degree of proteinuria – i.e. 81/82 (99%) of the patients at the time of biopsy in this study.

Table 1: Age and Sex distribution (n=82)

Patient Characteristics	**Frequency (%)**
Age	
Mean (SD) age (in years)	36.7 (11.4)
Median age	37years
Gender	
Male	43 (52%)
Female	39 (48%)

Majority of patients were having mesangial involvement (~90%), followed by tubular and interstitial involvement. (~60%). This pathological features categorization was done on 79 out of 82 study patients; as three other patients were staged according to older classification (HAAS classification) and hence not included into this assessment.

Table 2: Histopathological features of the study participants recruited into the study (n=79)

Histopathological feature	Percentage
Mesangial hypercellularity	89.8%
Endocapillary hypercellularity	8.8%
Segmental Sclerosis	18.9%
Tubular atrophy & interstitial fibrosis	60.7%

DISCUSSION

The median age of the patient population in our study is 37 years. And the males: females were almost equal, 52% being males. In the study conducted by Raeun et al.,[9] the mean age was 43.7years at the time of run-in phase and males were contributing to 76% of the patients. In the study conducted by Manno et al.,[10] the mean age was about 33.3years at the baseline. Males were almost twice as common as females in the study. In the study conducted by Tesar et al.,[11] the mean age of the patients was 36±16years at the baseline. Men were the dominant group comprising of 73% of the study.

The predominant feature in the biopsy of the patients was Mesangial hypercellularity involvement accounting for upto 90% and some form of tubular atrophy/interstitial fibrosis was involved in upto 60% of the patients. In the study conducted by Manno et al.,[10] the mesangial hypercellularity was seen in 28% of the biopsy findings and tubular atrophy/interstitial fibrosis involvement was seen in upto 25% of the patients.

CONCLUSION

The most common histological finding in this study was Mesangial hypercellularity, seen in about 90% patients.

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