Epidemiological Characteristics and Economic Burden of IgA Nephropathy ——A Retrospective Study Based on Multi-center Electronic Medical Records Data in China

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BACKGROUND

- As the most common primary glomerular disease in China[1-2], IgA nephropathy (IgAN) has limited treatment options, with 20%-40% of patients progressing to end-stage renal disease (ESRD) within 10-20 years[3].
- No studies with sufficiently large sample sizes have been published in China to investigate the economic burden of IgA nephropathy across its entire disease life cycle.

OBJECTIVE

To analyze the epidemiological characteristics and economic burden of Chinese IgAN patients using multi-center electronic medical records.

METHODOLOGY

Data sources

This retrospective study was conducted by pooling electronic medical records (EMRs) from hospitals located in eastern, central and southern China, which were Tianjin, Shandong, Hubei and Guangdong (January 2015 - September 2025).

Inclusion & exclusion criteria

Inclusion Criteria

- Patients were included if their diagnosis names in the Inpatient Diagnosis Form, Outpatient-Inpatient Form, or Medical Record Home Page contained any of the following: "IgA nephropathy", "IgA nephritis", "Berger disease", or "Boge disease".
- Patients were included if their "diagnostic disease codes" in the above three forms contained any of the following ICD-10 codes (see Table 1 for details).
- Patients whose diagnosis time fell between January 1, 2015, and September 1, 2025, were included.

Exclusion Criteria

- Patients were excluded if the time interval between their first and last IgA nephropathy diagnosis was ≤ 180 days.
- Patients participating in clinical trials.

Table 1. ICD-10 Codes for IgA Nephropathy

ICD-10 Code	Diagnostic Name
N02.002	IgA nephropathy with minimal glomerular lesions
N02.801	IgA nephropathy
N00.801	Acute glomerulonephritis with IgA nephropathy
N02.201	IgA nephropathy with membranous glomerular lesions
N02.701	Crescentic IgA nephropathy
N02.302	Mesangial proliferative IgA nephropathy
N02.800x002	Mesangial proliferative IgA nephropathy
N04.300x003	Nephrotic syndrome with membranoproliferative IgA nephropathy

RESULTS

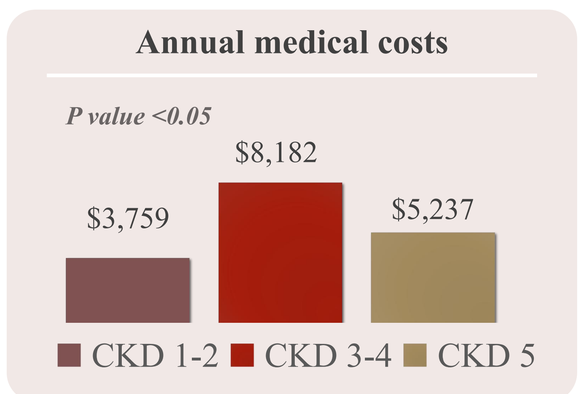
- A total of 13,193 patients were identified, among which 6,227 met the inclusion/exclusion criteria.Males accounted for 48.7%, with a mean diagnosis age of 41.1(14.1)years (47.6% aged 20-40). Hematuria (48.1%) and proteinuria (50.7%) were dominant symptoms. At diagnosis, 51.2% had ESRD (CKD 5), 5.9% were in CKD 1-2 , and 42.6% in CKD 3-4. Pathological patterns included mesangial hyperplasia (95.3%), endothelial hyperplasia (79.4%), and segmental sclerosis (44.1%). Mean 24-hour proteinuria was 0.99 g; baseline eGFR was 58.8 mL/min/1.73m².

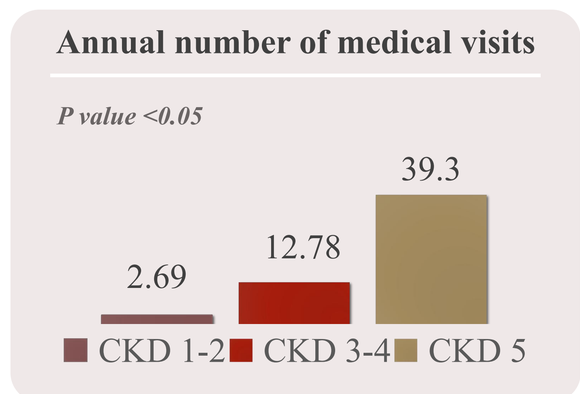
Table 2. Baseline characteristics for IgaN patients

Variable	Subcategory	IgaN patients (n=6227)
Gender	Male	3033(48.7%)
	Female	3194(51.3%)
Age		41.1（±14.1）
Clinical Manifestations	Hematuria	530(48.1%)
	Proteinuria	558(50.7%)
	Nephrotic Syndrome	12(1.1%)
	Renal Failure	1(0.1%)
CKD Stages at First Diagnosis	Stages 1-2 (eGFR ≥ 60)	2655(42.6%)
	Stages 3-4 (eGFR 15-59)	370(5.9%)
	Stage 5 (eGFR ＜ 15)	3186(51.2%)
Pathological Types	Mesangial Hyperplasia	1097(95.3%)
	Endothelial Cell Hyperplasia	914(79.4%)
	Segmental Sclerosis or Adhesion	507(44.0%)
	Renal Tubular Atrophy or Interstitial Fibrosis	330(28.7%)

- Annual medical costs averaged $4,724±2,005 (1:7 conversion), increasing with CKD stage: $3,759 (CKD 1-2), $8,182 (CKD 3-4), and $5,237 (CKD 5). Drug/treatment fees dominated in CKD 1-4, while dialysis shifted ESRD cost structure. ESRD patients had higher resource use: 39.3 annual outpatient visits and 1.12 hospitalizations vs. lower stages.

Figure 1. Annual medical costs and average number of medical visits





CONCLUSION

- Chinese IgAN shows a young-onset trend, with nearly half diagnosed at CKD 5. Although the study data show that the annual average treatment cost of patients with CKD 5 is lower than that of patients with CKD Stages 3-4, this phenomenon is actually due to the regulation of dialysis - related consumables through multiple policies such as government volume - based procurement, which has effectively reduced the economic burden on patients. However, the loss of quality of life caused by dialysis treatment for patients cannot be ignored.
- Therefore, for patients with IgA nephropathy (IgAN), clinical practice should emphasize early diagnosis and early treatment to delay the progression and deterioration of the disease as early as possible..

References

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