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Elderly versus young IgA nephropathy; an update on current data

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ABSTRACT

IgA nephropathy (IgAN) is a common glomerular disease affecting individuals across the age spectrum. However, there are differences in the presentation and prognosis of IgAN between elderly and young adults. Elderly patients with IgAN tend to present with more severe kidney disturbances, worse baseline renal function, and a poorer prognosis compared to young adults. The Oxford classification contributes to the overall prognosis of IgAN in elderly patients by improving prognostic assessment, providing a better determinant of kidney survival, and combining histopathologic findings with clinical features. It offers a more comprehensive approach to understanding the disease course and predicting outcomes in elderly individuals with IgAN. Understanding these differences is a fundamental basis for pinpointing potential therapeutic targets to mitigate age-related renal pathology in IgAN patients.

Implication for health policy/practice/research/medical education:
Elderly individuals with IgA nephropathy tend to have a greater quantity of proteinuria at the time of renal biopsy than their younger counterparts and higher degrees of proteinuria is associated with a higher risk of progression to ESRD Moreover, a higher percentage of crescentic glomeruli in young adults and higher degrees of tubulointerstitial fibrosis in elderly patients were seen. It is noteworthy that elderly patients with IgAN tend to have less favorable prognosis compared to young adults.

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Introduction

IgA nephropathy (IgAN) is a common glomerular disease that can affect individuals of all ages. However, there are differences in the presentation and prognosis of IgAN between elderly and young adults (1). Elderly patients affected by IgAN tend to have more serious kidney disturbances at presentation, such as acute kidney injury and nephrotic syndrome. Meanwhile, young adults with IgAN are more likely to present with hematuria and proteinuria (2,3). Proteinuria greater than 1.0 g/24 h at the time of diagnosis is a well-known indicator of progressive kidney disease in individuals with IgAN (4). Those individuals presenting with hematuria-related acute kidney injury also have a weak prognosis, with merely 36% and 21% survival without kidney replacement therapy or death before kidney replacement therapy, respectively (3,5). The severity of proteinuria is an important prognostic factor in IgAN, and higher degrees of proteinuria accompany a higher risk of development to end-stage kidney failure (6).

Elderly males with IgAN may have lower serum albumin levels, which is a marker of nutritional status

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and kidney function. Lower serum albumin levels can indicate more advanced disease (7,8). Elderly males with IgAN often have a higher prevalence of comorbidities such as hypertension, diabetes, and cardiovascular disease compared to younger patients. These comorbidities can contribute to the progression of IgAN and impact overall outcomes (9). These differences suggest that elderly males with IgAN may have a more advanced disease state and a higher risk of poor outcomes compared to younger males (3). Additionally, elderly patients with IgAN exhibit higher rates of hypertension, poorer kidney function, and higher mortality rates compared to younger adults. Furthermore, IgAN in the older population tends to develop faster than in younger cases and is probably an independent risk factor for death. Young adults with IgAN have a better prognosis, with a lower risk of progression to end-stage renal disease (ESRD) (1,3,9). Previous studies also showed elderly patients with IgAN have worse baseline renal function than younger adults, which can adversely impact IgAN prognosis (1,10).

Histological differences in IgAN in elderly versus young patients

There are histological differences in IgAN between elderly and young patients. Young adults with IgAN have a higher percentage of glomeruli affected by crescents compared to elderly patients. In contrast, elderly patients with IgAN exhibit higher degrees of tubulointerstitial fibrosis at the time of kidney biopsy than younger adults (3,11). Furthermore, it is essential to acknowledge that IgAN in old patients tends to follow a more accelerated progression than in younger individuals and is probably an independent risk parameter for death since young adults with IgAN have a better prognosis, with a lower risk of progression to ESRD (1,9). The Oxford classification/ MEST-C score is an established histopathologic scoring system for patients with IgAN. The MEST-C score includes five components: mesangial hypercellularity (M), endocapillary hypercellularity (E), segmental glomerulosclerosis (S), and tubular atrophy/interstitial fibrosis (T), along with the number of crescents (C) (12). The MEST-C score has been conducted to predict the prognosis of IgAN patients. Several studies have evaluated using the MEST score in elderly versus young patients with IgAN. Additionally, another study revealed that the MEST score was a valuable tool for predicting the progression of IgAN in elderly patients (13,14). A previous study demonstrated that elderly patients with IgAN had a higher degree of tubular atrophy/interstitial fibrosis than young adults (3).

Conclusion

Clinical differences in IgAN between elderly and young patients include more severe renal manifestations at presentation in elderly patients, higher rates of high blood pressure and poorer kidney function in elderly patients, and a better prognosis in young adults. Pathological differences in IgAN between elderly and young patients include a higher percentage of glomeruli affected by crescents in young adults while higher degrees of tubulointerstitial fibrosis in elderly patients. These differences suggest that elderly patients with IgAN may have a more compromised renal function at the time of diagnosis than young adults. Understanding these differences is vital for guiding appropriate management and treatment strategies for patients with IgAN across different age groups.

Authors' contribution

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Writing–review and editing: Parisa Kaviani, Mohammad Ali Esmaeil Pour, Azadeh Khayyat.

Conflicts of interest

The authors declare that they have no competing interests.

Ethical issues

Ethical issues (including plagiarism, data fabrication, double publication) have been completely observed by the authors.

Declaration of generative AI technologies in the writing process

During the preparation of this work, the authors utilized Perplexity to refine grammar points and language style in writing. Subsequently, the authors thoroughly reviewed and edited the content as necessary, assuming full responsibility for the publication's content.

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