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### Long-term Outcome and Possible Prognostic Factors of Childhood IgA Nephropathy in a Multi-center Study in Korea

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**Objectives** : IgA nephropathy is the most commonly occurring type of chronic GN in children and adults. And its clinical features are highly variable, ranging from asymptomatic microscopic hematuria with or without proteinuria to a rapidly progressive loss of renal function. Impaired renal function, persistent hematuria, sustained hypertension, and proteinuria above 1g/d are poor prognostic markers in adult. However, there are lack of research on prognostic factors and multi-center study in children with IgAN. The purpose of this study is to evaluate the long-term outcome and potential predictors for poor prognosis in Korea.

**Methods** : The study population consisted 964 children (male 644, female 320), diagnosed on the basis of Haas classification of kidney biopsy findings between January 1985 and January 2017, entered into the iCReaT pediatric IgAN registry with 20 hospitals. The patients were subdivided into two groups: SUS (school urine screening) group (male 246, female 125) and non-SUS group (male 398, female 195). The mean age at the time of diagnosis was  $10.5 \pm 3.8$  years old. Clinical features (gross hematuria with or without proteinuria, isolated microscopic hematuria, microscopic hematuria with proteinuria, isolated proteinuria, nephrotic syndrome, azotemia) and associated symptoms (hypertension, oliguria, edema, decreased GFR) were also assessed at diagnosis.

**Results** : During a mean follow-up of  $7.0 \pm 5.6$  years, 52 patients (5.4%) and 32 patients (3.3%) had progressed to CKD and ESRD respectively. There was no significant difference both school urinalysis screening and gender distribution in the overall outcome ( $p=0.103$ ). A Kaplan-Meier plot of renal survival showed that the survival probabilities were 93.3% at 10 years and 85.9% at 17 years for CKD and 94.8% at 10 years and 91.3% at 17 years for ESRD respectively. And intensity of IgA or C3 deposits and location of electron deposits also seemed no influence the overall outcome ( $p=0.278$ ). Interestingly gross hematuria patients at diagnosis had better outcome ( $p=0.030$ ). By Cox multivariate analysis, severe proteinuria, hypertension at diagnosis and

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advanced histopathologic lesions (segmental sclerosis, global sclerosis, interstitial fibrosis, Haas class IV and V) were more reliable predictors of an unfavorable outcome.

**Conclusions :** During the follow-up, childhood IgAN showed relatively good clinical outcomes. There were impact of possible prognostic factors on clinical outcome: clinical risk factors (gross hematuria, microscopic hematuria with proteinuria and nephritic syndrome, hypertension and degree of proteinuria) and hispathologic risk factors (segmental sclerosis and global sclerosis, interstitial fibrosis and grade of Haas classification) in this study.

**Keywords :** IgA nephropathy, children, prognostic factors