Outcome of kidney allograft in patients with adulthood-onset focal segmental glomerulosclerosis (FSGS); comparison with childhood-onset FSGS

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Background: Idiopathic focal segmental glomerulosclerosis (FSGS) occurred at young age is known to predispose poor graft outcome, but our understanding of this predisposition in adulthood-onset FSGS (A-FSGS) is limited due to the scarcity of prior investigations. Here, we compared the graft outcomes between kidney transplant recipients with A-FSGS and childhood-onset FSGS (C-FSGS).

Methods: Our study included 47 A-FSGS recipients with an age of onset greater than 15 years and 60 C-FSGS recipients with an age of onset less than 15 years. The primary outcome was the occurrence of graft failure and secondary outcomes were acute rejection (AR), chronic allograft nephropathy (CAN), and recurrence. Assessment of the declining renal function was made by calculating the gradient of the slope of reciprocal serum creatinine against time.

Results: Forty-six patients were C-FSGS and 47 patients were A-FSGS. A-FSGS patients showed a longer duration from diagnosis to ESRD, but the other baseline characteristics were similar. Cumulative AR free survival was not different between two groups (p=0.402, by Kaplan-Meier method). Cumulative CAN free survival (p=0.723), recurrence free survival (p=0.743), and graft survival (p=0.279) were also similar in two groups. But the worsening of kidney function defined by the gradient of the slope of reciprocal serum creatinine was steep in C-FSGS than in A-FSGS (-0.033 vs. -0.005), indicating more rapid decline of allograft function (p=0.005). The episodes of AR or CAN significantly affected the graft survival (p=0.002 for AR, and p=0.008 for CAN). In A-FSGS, recurrence of underlying disease was associated with poor graft survival (p=0.004), whereas in C-FSGS, the graft survival was not affected by disease recurrence (p=0.811).

Conclusion: The graft outcome of FSGS was similar regardless of onset-age. However, heterogeneity of pathogenesis in A-FSGS may have some impact on graft survival by disease recurrence.

Risk factors for progression to CKD 3 in IgA nephropathy

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Background: IgA nephropathy (IgAN) is the most common primary glomerulonephritis in Korea. To investigate the risk factors for progression, we retrospectively analyzed the data of IgAN from a single center in Korea.

METHODS: Three hundred and twenty nine patients (M: F 173:156, mean age 33.96) with biopsy-proven IgAN (January 2002 – December 2009) were available for analysis. Progression was defined as an occurrence of CKD stage 3 (eGFR<60 mL/min/1.73m2 by MDRD) or start of renal replacement treatment (RRT) due to ESRD. Cox regression analysis was used and presented as Odd ratio (OR; 95% CI).

RESULTS: Number of patients with episodic gross hematuria, microscopic hematuria with proteinuria, nephritic syndrome and hypertension as an initial clinical presentation was 42 (12.8%), 203 (61.7%), 5 (1.5%) and 60 (18%), respectively. At presentation, mean creatinine and protein-creatinine ratio (PCR) by spot urine was 0.99±0.98 mg/dl and 970±130 mg/g. Number of patients with glomerulosclerosis in renal biopsy was 151 (45%). During mean follow-up of 43 months (range 12–101), 14 (4.3%) patients had begun RRT and 28 (8.2%) patients were diagnosed as CKD stage 3 and above. With univariate analysis, age at diagnosis (p=0.014, OR=1.049 CI 1.010-1.090), glomerulosclerosis on pathology (p=0.02, OR=7.885 CI 2.074-29.982) and PCR >500 mg/g (p=0.013, OR=6.668, CI 1.498-29.672) were associated with occurrence of CKD stage 3. Glomerulosclerosis (p=0.01,OR=1.55 CI 1.071-2.257) and hypertension (p=0.025, OR=3.55 CI 0.432-1.126) were associated with start of RRT. With multivariate analysis, age at diagnosis, glomerulosclerosis and PCR >500 mg/g were independent risk factor for occurrence of CKD stage 3 and above.

CONCLUSIONS: Our study suggests that age at diagnosis, hypertension, proteinuria more than 500 mg/g and glomerulosclerosis on biopsy are major risk factors for progression to CKD 3 and above in Korean patients with IgA nephropathy.