KSN 2020
FULLY VIRTUAL MEETING

Abstract Submission No. : IL-9066

Overview of patients with renal biopsy

Ho Jun Chin
Seoul National University College of Medicine, Korea, Republic of

Background : Glomerulonephritis (GN) is one of common causes of end-stage renal disease (ESRD) in Korea as well as in the world, however, it is underdiagnosed as a cause of chronic kidney disease. The incidence and prevalence of GNs are different according to periods and countries. Here is trends of pathologic diagnosis of nephritis from 18 centers throughout Korea during last 40 years.
Methods: There were enrolled 21,617 patients having native kidney biopsy for diagnosis of nephritis between 1979 and 2018, retrospectively. The author excluded 191 patients diagnosed as cancer or tumor and analyzed the data of 21,426 patients. The author defined the primary GN as IgA nephropathy (IGAN), minimal change disease (MCD), membranous nephropathy (MGN), focal segmental glomerulosclerosis (FSGS), membranoproliferative GN (MPGN), and C3 glomerulopathy (C3G). The estimated glomerular filtration rate (GFR) was calculated by original MDRD equation for adults and by height-independent equation for children. The final outcomes were incidences of end stage renal disease (ESRD) and death.
Results: There were 22,203 pathologic diagnoses including 777 patients with two kinds of pathologic diagnosis. The age was 42.1 ± 17.7 years at renal biopsy. There were 11565 (54.0 %) men and 976 (4.6 %) children <18 years. The frequencies of hypertension and diabetes mellitus were 53.0 % (10994) and 14.0 % (2833), respectively. Mean levels of serum creatinine, GFR, and urine protein to creatinine ratio were 1.62 ± 1.89 mg/dl, 77.1 ± 60.4 ml/min/1.73 m^2, and 3.305 ± 4.164 g/g cr, respectively. The prevalence of GN was 78.45% (17419 diagnoses), followed by tubulointerstitial nephritis (8.84 %), abnormality in glomerular basement membrane (3.43 %), ischemic nephropathies (1.73 %), paraproteinemia related lesions (1.36 %), infection (0.12 %). There were non-specific GN (3.65 %), normal pathology (2.46 %), advanced global sclerosis (1.77 %), inadequate specimen (0.96 %), and miscellaneous lesions (0.12 %), also. The most frequent GN was IGAN (34.17%, 7586 diagnoses), followed by MGN (9.17%), MCD (9.13 %), FSGS (7.65 %), lupus nephritis (LN) (6.30 %), diabetic nephropathy (DMN) (3.99 %), MPGN and C3G (2.79 %), therefore, prevalence of primary GN was 62.90 %. The frequency of IGAN had been increased from 19.9 % at the period of 1979-1989 to 41.4 % at the period of 2005-2009 and then stabilized to 36.0-36.7%. The frequencies of MCD, MGN, and FSGS were not changed since 1990. However, the frequency of MPGN was decreased from 4.7-5.7 % at the period of 1979-1999 to 2.5 % at the period of 2015-2018. The frequency of LN was decreased and that of DMN was increased from 2.5-3.1% during 1990-2009 to 6.3 % during 2015-2018 which might be related to the pathologic classification of DMN, published at 2010 by Tervaert TW et al. The incidences of ESRD and death were 13.3 % (2663/20010 patients) and 2.9 % (608/20884 patients) during follow-up period of 82.6 months (median) and 91.5 months (median) after biopsy, respectively. Among patients with primary GN, patients with MCD showed the best prognosis for ESRD, followed by patients with MN, IGAN, FSGS, MPGN, and C3G ($p < 0.001$) by Cox's hazard proportional model adjusted by risk factors related to ESRD. Prognosis for mortality was not different among patients with MCD, MN, IGAN, and FSGS, but, patients with C3G showed the worst prognosis for mortality ($p=0.006$).

Conclusion : IGAN was the most frequent diagnosis followed by MGN and MCD. Compared to Western countries, IGAN and MCD are more prevalent in Korea, while MGN and FSGS are less prevalent. The frequencies of MPGN and LN were decreased. The patients with MPGN and C3G showed the worst prognosis.