英文題目：Variations of estimated glomerular filtration rate in systemic disease-related nephropathy and primary renal diseases

中文題目：在系統性疾病引發之慢性腎臟病與原發性腎疾病中觀察其估計值腎功能變異程度

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Background & Objectives: The estimated glomerular filtration rate (eGFR) is traditionally considered the practical index of kidney function which is recommended for diagnosing kidney damage and classifying the severity of disease by the National Kidney Foundation (NKF). The purpose of this study is to identify the different types of GFR variation between the systemic disease-related nephropathy and primary renal diseases in the prospective cohort.

Methods: From Nov. 2001 to Dec. 31, 2011, 5097 patients with chronic kidney disease (CKD) were investigated with a comprehensive questionnaire, biochemical test and

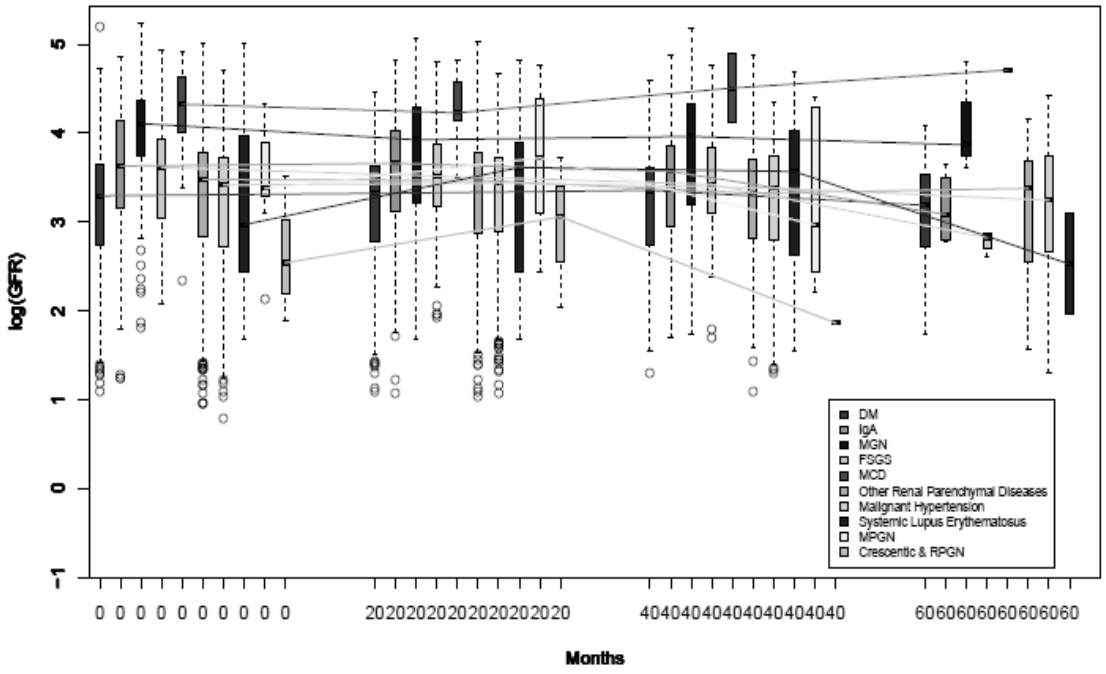
pathological report of kidney, and they were all registered in the data bank of case management care system of chronic kidney disease of the Bureau Health Promotion, Department of Health, ROC. All of them followed up to July 31, 2012 with regular biochemical test and medication for chronic diseases. The five stage CKD groups were stratified by simplified modification of diet in renal disease (MDRD) equation and were analyzed with one-way ANOVA for continuous variables, Chi-square for categorical variables, and Kaplan-Meier equation for renal and patient's survival.

Results: The mean age of the five groups were 38.6 ± 16.7 years in CKD stage I, 52.2 ± 17.7 years in CKD stage II, 67.5 ± 14.9 years in CKD stage III, 67.2 ± 14.8 years in CKD stage IV, and 63.5 ± 14.6 years in CKD stage V. Several statistically significant differences were found in the distribution of age, average follow-up time, sex, smoking, alcohol, diabetes mellitus, hypertension, cardiovascular disease, serum albumin, serum uric acid, and HbA1c. Initial eGFR variations were smaller than the values of the following time point in five groups. The stage I CKD became worse in eGFR during the follow-up, but stage V CKD became better. The eGFR variations of diabetic nephropathy, minimal change disease, and membranopathy were quite small and the initial GFR was relatively high. The eGFR of the other renal parenchyma diseases, malignant hypertension, and membranoproliferative glomerulopathy were relatively medium in values. The poorest eGFR with rapid decline was found to be IgA nephrpathy, focal segmental glomerulosclerosis, lupus nephritis, and crescentic glomerulopathy.

Conclusion: Systemic disease-related nephropathy and primary renal diseases with different patterns of eGFR variations enable physicians to clinical judgments.

Key words: comprehensive, chronic kidney disease, estimated glomerular filtration rate, variations.

Figure 1


log(GFR)
5
4
3
2
1
0
−1
0 0 0 0 0 0 0 0 0 0
20202020202020202020
40404040404040404040
60606060606060606060
Months
DM
IgA
MGN
FSGS
MCD
Other Renal Parenchymal Diseases
Malignant Hypertension
Systemic Lupus Erythematosus
MPGN
Crescentic & RPGN