中文題目：Cystatin C 可作為健康族群之腎功能快速惡化指標

英文題目：Serum Cystatin C Levels Could Predict Rapid Kidney Function Decline in A Community-based Population

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Background: Several biomarkers have been correlated with the prevalence and severity of chronic kidney disease (CKD), however the association between biomarkers and rapid kidney function decline (RKFD) is unknown. This study aimed to evaluate the predictive performance of biomarkers to determine who is likely to develop RKFD in a healthy population.

Method: A community-based cohort of 2608 people residing in northern Taiwan were enrolled, and their renal function was followed annually from January 2014 to December 2019. The outcomes of interest were RKFD, defined as a 15% decrease in estimated glomerular filtration rate (eGFR) within the first 4 years, and a decrease in eGFR without improvement in the 5th year. Clinical variables and potential predictors of RKFD, namely adiponectin, leptin, tumor necrosis factor-alpha, fibroblast growth factor-23 (FGF-23), and cystatin C were measured and analyzed.

Results: The incidence of RKFD was 17.0% (105/619). After matching for age and sex at a 1:1 ratio, a total of 200 subjects were included for analysis. The levels of cystatin C and total vitamin D were significantly negatively correlated with eGFR. eGFR was negatively correlated with the levels of cystatin C and total vitamin D. Among the biomarkers, cystatin C showed the best predictive performance for RKFD (area under the receiver operating characteristic curve (AUROC): 0.789), followed by FGF-23 (AUROC: 0.772). Lower serum cystatin C was associated with a higher rate of RKFD in healthy subjects. A generalized additive model showed that 0.82 mg/L was an adequate cut-off value of cystatin C to predict RKFD. Multivariable logistic regression analysis further indicated that cystatin level was an independent predictor of the possibility of RKFD.

Conclusion: Serum cystatin C level could predict the possibility of RKFD. On the basis of our results, we suggest that a low cystatin C level should be considered as a risk factor for RKFD in healthy subjects.