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한국의 새로 복막투석을 시작하는 환자들에서 Charlson comorbidity index의 재조정 및 타당성 검증

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Recalibration and Validation of the Charlson Comorbidity Index in Korean Incident Peritoneal Dialysis Patients

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Objectives: The Charlson Comorbidity Index (CCI) is the most widely used for mortality analysis. Previous studies showed that the CCI was a better predictor for survival in dialysis patients than other indexes such as Wright-Khan indexes and the Davies index. In this study, we modified the CCI and developed a modified Charlson comorbidity index (mCCI) for incident peritoneal dialysis (IPD) patients to improve risk stratification for mortality.

Methods: The mCCI was developed based on 7,606 Koreans who received their first peritoneal dialysis treatment between 2005 and 2008. Data were obtained from the Korean Health Insurance dataset. The mCCI-IPD score was the sum of the weights which were assigned to individual comorbidities according to their relative prognostic significance determined by multivariate Cox proportional hazards model. The modified index was validated based on 664 IPD patients in an independent prospective cohort.

Results: The Cox proportional hazards model revealed that the CCI comorbidities except ulcers, peripheral vascular disease, dementia and connective tissue disease significantly predicted mortality. Thus, the mCCI-IPD included 11 comorbidities with re-assigned severity weights. In the validation cohort, both the CCI and the mCCI-IPD were correlated with mortality. However, the mCCI-IPD showed modest but significant increases in c statistics compared with the CCI at 6 months and 1 year. The analyses using continuous net reclassification improvement revealed that the mCCI-IPD improved net mortality risk reclassification by 24.6% (95% CI, 2.5-46.7; p=0.03), 26.2% (95% CI, 1.0-51.4; p=0.04) and 42.8% (95% CI, 4.9-80.8; p=0.03) with respect to the CCI at 6 months and 1 and 2 years, respectively.

Conclusions: The mCCI-IPD performed the better risk stratification for mortality in IPD patients than the CCI. It suggests that the mCCI-IPD may be a preferred tool for clinical and epidemiological study of PD patients.

Key Words: 사망률, 복막투석, 동반질환
Mortality, Comorbidity, Peritoneal dialysis