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Cf-PWV but not cr-PWV or cd-PWV is associated with cardiovascular mortality in patients with chronic kidney disease

Yan Wang, Mi Wang, Zhun Sui, Jieran Xiong, Xin Zhang, Li Bai, Xiangzheng Jiao, Li Zuo
Department of Internal Medicine-Nephrology, Peking University People's Hospital, China

Objectives : In patients with CKD, there are more studies on cf-PWV and mortality, but fewer studies on cr-PWV and cd-PWV. This study aims at examining the relationship between cf-PWV, cr-PWV, and cd-PWV and mortality in patients with CKD.

Methods : This was a single-center cohort study. CKD patients with eGFR <60 ml/min/1.73 m² were recruited. Their baseline cf-PWV, cr-PWV, and cd-PWV were collected, and then were followed up for the occurrence of all-cause and cardiovascular (CV) death. Cox proportional hazards model were used to examine the association of cf-PWV, cr-PWV, and cd-PWV with mortality. Time-dependent receiver operating characteristic (ROC) curve was used to evaluate the predicting performance of cf-PWV on CV mortality.

Results : A total of 233 patients were enrolled. Their average cf-PWV, cr-PWV, and cd-PWV were 12.8±3.6 m/s, 9.9±2.0 m/s, and 9.4±3.7 m/s, respectively. During 9.0(4.0, 12.6) years of follow-up, 144 (61.8%) patients died, of which 76 (52.8%) were due to CV death. In the univariate Cox regression analysis, cf-PWV was associated with all-cause mortality; both cf-PWV and cr-PWV were associated with CV mortality. After adjustment for confounding factors, only cf-PWV was an independent risk factor for CV mortality [HR 1.198, 95% CI (1.097, 1.308)]. The areas under the curve (AUC) of cf-PWV for 1-, 3-, 5-, and 10-year of CV death were 0.78, 0.76, 0.70, and 0.75, respectively.

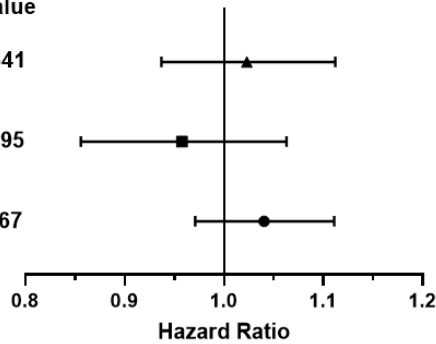
Conclusions : In CKD patients, cf-PWV is associated with CV mortality, and the predictive vitality remains significant even after 10 years. Cr-PWV and cd-PWV are not associated with either all-cause or CV mortality, therefore, routine monitoring of these parameters is not needed.

Figure1.png

(A)

All-cause mortality

| Variable | HR (95% CI) | p value |
|----------|----------------------|---------|
| cd-PWV | 1.020 (0.937, 1.112) | 0.641 |
| cr-PWV | 0.954 (0.856, 1.063) | 0.395 |
| cf-PWV | 1.039 (0.971, 1.111) | 0.267 |



(B)

Cardiovascular mortality

| Variable | HR (95% CI) | p value |
|----------|----------------------|---------|
| cd-PWV | 1.021 (0.931, 1.120) | 0.662 |
| cr-PWV | 1.049 (0.931, 1.181) | 0.432 |
| cf-PWV | 1.198 (1.097, 1.308) | <0.001 |

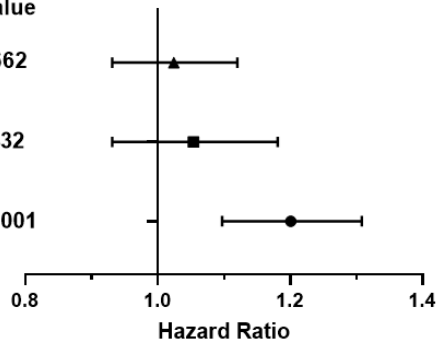


Figure1.png

