Pulse wave velocity and its prognostic value in maintenance hemodialysis patients

SP571

WU Fan[1,2], GAN Liangying[1], YANG Jinghua[1], TAN Min[1], ZUO Li[1], WANG Mei[1]

1 Peking University People's Hospital, Beijing 100044, China; 2 The Third Hospital of ZhengZhou, ZhengZhou 450000, China. **Correspondence author**: GAN Liangying, email: ganliangying@yahoo.com

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Objective To explore the predictive value of Carotid-femoral pulse wave velocity (cfPWV) on cardio-cerebral vascular deaths and all-cause mortality in maintenance hemodialysis(MHD) patients.

Methods

A cohort of 76 MHD patients from Peking University People's hospital were recruited. Demographic data was collected. Lab exam and cfPWV were performed.

Results During a follow-up of 66months, 17 fatal and 9 non-fatal CV events and 33 deaths occurred. Age and diabetes were independent predictors for all-cause survival and age, diabetes, mean arterial pressure, pulse pressure and cfPWV were independent predictors for CV survival by cox regression.

Table 1 Baseline characteristics and lab values

Parameters	mean±SD
Age(years)	59.7±14.3
Dialysis vintage(months)	31.1±30.5
BMI (Kg/m^2)	23.18±4.13
Hb(g/L)	10.44±1.57
ALB(g/L)	39.50±3.18
Corrected Ca(mg/dl)	8.89±0.65
P(mmol/l)	1.91±0.56
Ca×P (mg^2/dl^2)	52.25±15.89
iPTH(pg/ml)	215.17±157.05
TG(mmol/l)	1.36±0.79
TC(mmol/l)	3.77±0.90
HDL(mmol/l)	3.77±0.36
LDL (mmol/l)	2.02±0.59

Table 2 Survival comparison by log-rank test of patients with different cfPWV levels

cfPWV(m/s)	N	Cumulative survival	Mean survival time （months）（SD ）
>=13	32	37.5%	45.00 (3.64)
<13	44	70.5%	56.51 (2.59)

***P*=0.004（Log Rank）， X^2=8.390**

Figure 1 All-cause survival comparison of different cfPWV levels

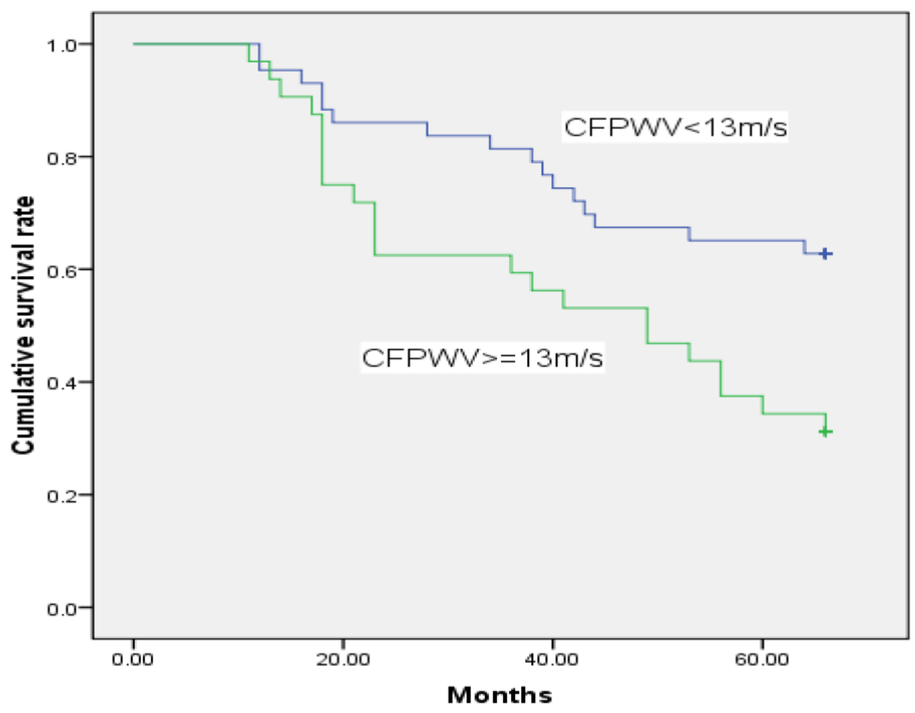
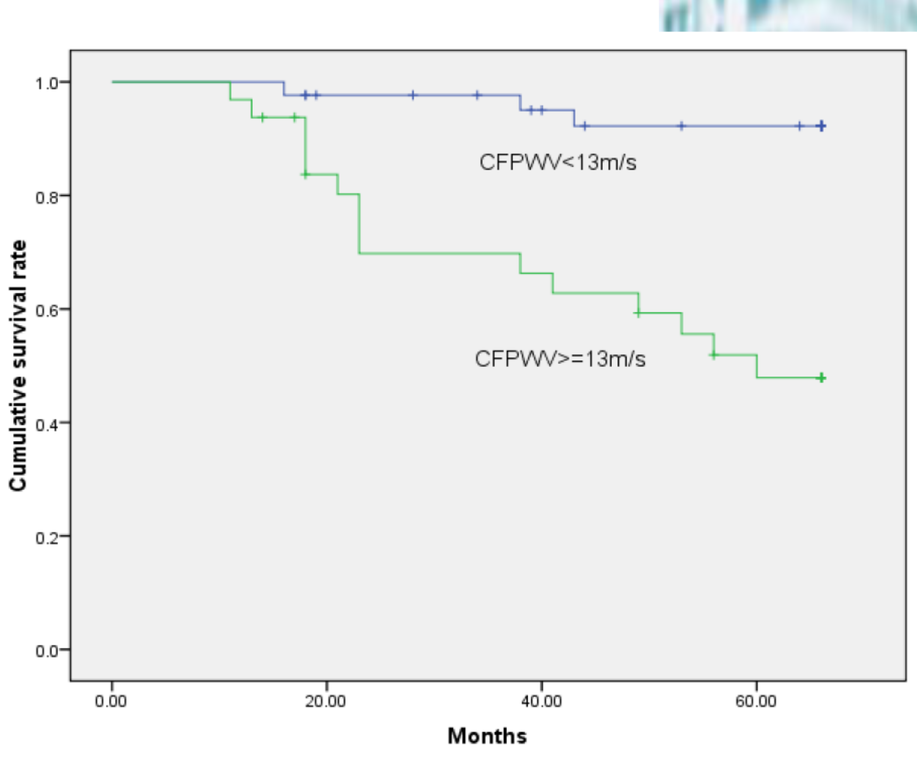


Table 3 CVD Survival comparison by log-rank test of patients with different cfPWV levels

cfPWV(m/s)	N	Cumulative survival	Mean survival time （months）（SD ）
>=13	32	53.1%	48.20 (3.82)
<13	44	93%	53.46 (1.47)

***P*=0.000（Log Rank）， X^2=16.848**

Figure 2 CVD survival comparison of different cfPWV levels



Conclusions MHD patients with higher CFPWV have worse all-cause and CV survival. Higher CFPWV is an independent predictor for CV survival of MHD patients.

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