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## Walking Speeds for Reduced Cardio-Cerebrovascular Events in Hemodialysis Patients : A Seven-Year Cohort Study

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**【Purpose】** Deterioration in walking ability characterized by slow walking speed is associated with an increased risk of hospitalization and mortality in hemodialysis (HD) patients. However, few studies have focused on walking speeds associated with reduced clinical events. Here we assessed the benefits of a range of maximum walking speeds (MWS) to reduce cardio-cerebrovascular events in HD patients.

**【Methods】** A total of 188 Japanese outpatients (90 men, 98 women; mean, 65 ± 10 years) undergoing maintenance HD 3 times a week were monitored for 7 years. We measured clinical characteristics (age, sex, body mass index, HD duration, comorbid conditions, serum albumin, and serum C-reactive protein) and MWS at baseline, and followed the patients for clinical events. Patients were divided into quartiles (Q1 = lowest [slow MWS], Q4 = highest [fast MWS]) based on MWS for each sex as follows: ≤79 m/min, 79 to 89 m/min, 89 to 105 m/min, and >105 m/min in men; and ≤72 m/min, 72 to 85 m/min, 85 to 100 m/min, and >100 m/min in women. Kaplan-Meier analysis and Cox proportional hazards regression were used to assess the contribution of MWS to cardio-cerebrovascular events.

**【Results】** During the follow-up period, cardio-cerebrovascular events occurred in 67 patients. Seven-year cumulative incidence rates were 36%, 32%, 13%, and 9% for Q1 through Q4, respectively, and a significant difference across quartiles of MWS was observed (Log rank,  $P < 0.001$ ). While the incidence did not significantly differ between Q1 and Q2 and between Q3 and Q4, Kaplan-Meier curves clearly differed between Q2 and Q3. After adjusting for potential confounders, the hazard ratio for events per 10-m/min increases in MWS was 0.71 (95% confidence interval: 0.58-0.86;  $P = 0.001$ ).

**【Discussion】** Our findings suggest that MWS >89 m/min in men and >85 m/min in women should be maintained in order to reduce subsequent cardio-cerebrovascular events in HD patients.