7．Diabetes and instrumental activities of daily living limitations via illness-death model: NIPPONDATA90

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Background: Prediabetes and disability among middle-aged population is less studied. The illness-death model can illustrate the transition between state and solve the limitations mentioned in previous studies.

Objective: To examine the association between diabetes categories and limitations of instrumental activities of daily living (IADL) and mortality via illness-death model among middle-aged adults Japanese.

Method: There were 1784 participants in NIPPONDATA90 aged 45 to 64 randomly selected from 300 community areas around Japan were eligible for the analysis. Diabetes status at baseline was classified as normal, prediabetes and diabetes based on comprehensive methods using fasting plasma glucose, HbA1c certified by NGSP, self-reported medication for diabetes. In the pooled survey of 25-year follow up, participants who had reached age 65 years and over at four time points (1995, 2000, 2006, 2012) were eligible for the IADL survey. The transitions from healthy state at baseline to IADL decline and death was illustrated by Markov model. Cox proportional hazards model was employed for each transition risk separately.

Results: In the present study, 374 (20.9%) participants had an incident IADL decline event, 360 (20.1%) had died without IADL decline,140 (37.4%) participants transitioned to death from IADL decline in the end of study. Participants with prediabetes and diabetes had higher risks of transition from healthy state to IADL decline HR of 1.24 (0.99-1.55) and 1.38 (1.02-1.89), and higher risks of transition from healthy state to death HR of 1.33 (1.05-1.68) and 1.49 (1.09-2.02). However, we did not find significant results for transition from IADL decline to death.

Discussion: Our results are comparable with other studies while solving the interval-censored data and competing risk, using longitudinal data with repeated measurement of outcome. Prediabetes is considered as the risk factors for disability and mortality in later life, the mechanism could be stacked up the risk factors over time. Prevention should be aimed for people with prediabetes and diabetes.

Conclusion: Prediabetes and diabetes associated with increased the risks of disability and mortality in later life.

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