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Association between alcohol consumption and mortality in Parkinson's disease : A nationwide population-based cohort study

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Objectives

Previous studies on the association between alcohol consumption and risk of Parkinson's disease (PD) have produced controversial results. Discrepancies in findings may be due to differences in study design, recall bias, and the presence or absence of confounding variables. The relationship between alcohol consumption and mortality in PD, however, has scarcely been investigated. This study aimed to determine the association between alcohol consumption and all-cause mortality in individuals with PD using a prospectively collected nationwide cohort in Korea.

Methods

The nationwide population-based retrospective cohort study was conducted using the Korean National Health Insurance System cohort data. Among the whole nationwide population data from Korea National Health Insurance Service, newly diagnosed PD (ICD-10 code: G20 and a rare intractable disease registration code: V124), between 2009 and 2017, were selected. Alcohol consumption habit was obtained from a self-reported questionnaire on the National Health Screening Program. Based on the total alcohol intake per week, participants were classified into the following four groups: heavy drinkers (more than 210 g of alcohol per week), moderate drinkers (105–209 g of alcohol per week), mild drinkers (less than 104 g of alcohol per week), and nondrinkers. 32,419 individuals with PD were followed-up longitudinally until December 31, 2017, and all-cause mortality was evaluated. Cox proportional hazard regression models were used to evaluate the association between alcohol consumption and mortality in PD.

Results

Figure 1. Flowchart for participant selection

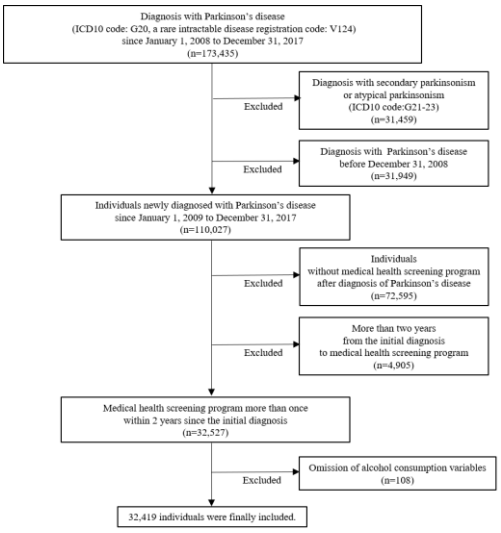

Figure 2. Multivariable-adjusted survival curves in individuals with PD according to alcohol consumption

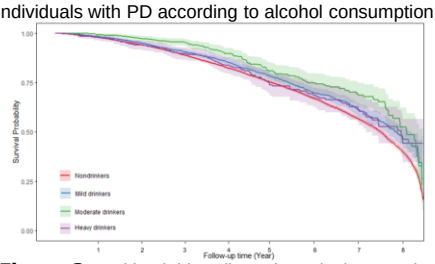

Figure 3. Multivariable-adjusted survival curves in individuals with PD according to alcohol consumption behavior change before and after the diagnosis.

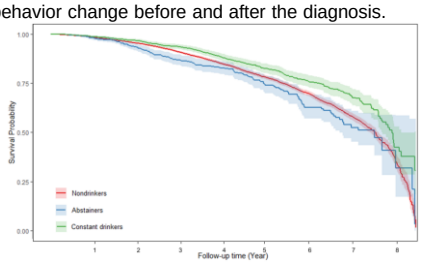

Table 1. Cox proportional hazard regression analysis of Mortality in Parkinson's disease according to alcohol consumption

	PD (n)	Mortality (n)	Person-years	Mortality rate	Model 1	P value	Model 2	P value	Model 3	P value
Nondrinkers	27,401	8,062	108112.41	74.57	1.00		1.00		1.00	
Mild drinkers	3,957	740	13456.53	54.99	0.72 (0.66-0.77)	<.0001	0.71 (0.65-0.76)	<.0001	0.78 (0.71-0.84)	<.0001
Moderate drinkers	649	134	3051.84	43.91	0.57 (0.48-0.68)	<.0001	0.59 (0.50-0.71)	<.0001	0.69 (0.58-0.82)	<.0001
Heavy drinkers	412	113	1934.39	58.42	0.76 (0.63-0.92)	0.0041	0.72 (0.60-0.87)	0.0007	0.84 (0.69-1.02)	0.0800

Conclusion

Alcohol consumption appears to be associated with reduced all-cause mortality in PD; however, the association is similar to that observed in the general population. Although light to moderate drinking does not appear to be detrimental to PD mortality, alcohol consumption in PD requires attention considering individual motor and non-motor symptoms.