

Abstract

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Dietary intake of folate, vitamin B6, vitamin B12 and riboflavin and risk of Parkinson's disease: a case-control study in Japan.

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BACKGROUND: Increased homocysteine levels might accelerate dopaminergic cell death in Parkinson's disease (PD) through neurotoxic effects; thus, increasing intake of B vitamins involved in the regulation of homocysteine metabolism might decrease the risk of PD through decreasing plasma homocysteine. However, epidemiological evidence for the association of dietary B vitamins with PD is sparse, particularly in non-Western populations.

OBJECTIVE: We conducted a hospital-based case-control study in Japan to examine associations between dietary intake of folate, vitamin B6, vitamin B12 and riboflavin and the risk of PD.

METHODS: Patients with PD diagnosed using the UK PD Society Brain Bank criteria (n 249) and controls without neurodegenerative diseases (n 368) were recruited. Dietary intake during the preceding month was assessed at the time of study recruitment using a validated, self-administered, semi-quantitative, comprehensive diet history questionnaire.

RESULTS: After adjustment for potential dietary and non-dietary confounding factors, intake of folate, vitamin B12 and riboflavin was not associated with the risk of PD (P for trend = 0.87, 0.70 and 0.11, respectively). However, low intake of vitamin B6 was associated with an increased risk of PD, independent of potential dietary and non-dietary confounders. Multivariate OR (95 % CI) for PD in the first, second, third and fourth quartiles of vitamin B6 were 1 (reference), 0.56 (0.33, 0.94), 0.69 (0.38, 1.25) and 0.48 (0.23, 0.99), respectively (P for trend = 0.10).

CONCLUSION: In conclusion, in the present case-control study in Japan, low intake of vitamin B6, but not of folate, vitamin B12 or riboflavin, was independently associated with an increased risk of PD.

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