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Vitamin D and all-cause mortality in older adults > 50 years - data from The Irish Longitudinal Study of Ageing

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Abstract

Background

Low 25-hydroxyvitamin D (25(OH)D) has been linked with adverse health outcomes, including cancer, cardiovascular disease and mortality. The Irish Longitudinal Study on Ageing (TILDA) has previously shown that 13.1% of the Irish population over 50 are deficient in 25(OH)D, after adjusting for seasonality. The aim of this study is to assess whether low 25(OH)D concentrations are associated with all-cause mortality in the over 50s in Ireland.

Methods

Data from Wave 1 (2009–2011) of TILDA, a prospective population representative study of community dwelling adults aged over 50, were used. Blood was obtained during the health assessment, and analysis of 25(OH)D was performed. Mortality was confirmed through official death records, and all participant deaths between baseline and March 2017 were included. Logistic regression assessed whether baseline levels of 25(OH) D, both continuous and categorised into deficient ($25(\text{OH})\text{D} < 30 \text{ nmol/l}$), insufficient ($30 \leq 25(\text{OH})\text{D} < 50 \text{ nmol/l}$) or sufficient ($25(\text{OH})\text{D} \geq 50 \text{ nmol/l}$), are associated with mortality.

Results

Of the 8,175 over 50s recruited, 25(OH)D data was available for 5,388 participants. Of these, 366 individuals had died prior to March 2017. Higher concentrations of 25(OH)D were associated with lower odds of mortality (OR 0.70; 95% CI 0.60, 0.81, p-value), controlling for confounders. On categorising 25(OH)D, those with insufficient 25(OH)D concentrations had higher odds of mortality than those with sufficient levels (OR 2.04; 95% CI 1.48, 2.8; p-value < 0.001). Stratifying between men and women, there was no gender difference in this association.

Conclusion

Insufficient baseline 25(OH)D concentrations are associated with an increased odds of all-cause mortality in community dwelling adults over 50 in Ireland. Further research evaluating whether treatment of vitamin D deficiency improves mortality is warranted.

Conflict of Interest

There is no conflict of interest