

Mortality Trends In Elderly Patients With Coexisting Hypothyroidism And Alzheimer’s Disease: A 25-year Retrospective Nationwide Study

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Findings from this observational study suggest a modest increase in national mortality among elderly patients with coexisting Hypothyroidism and Alzheimer Disease, with rising trends especially seen in females, rural areas, and the very elderly.

INTRODUCTION	METHODS	RESULTS	CONCLUSIONS	REFERENCES
Hypothyroidism and Alzheimer’s disease (AD) are highly prevalent conditions among older adults and independently associated with increased morbidity and mortality. Thyroid hormone plays a critical role in brain metabolism and neurocognitive function, and its dysregulation has been implicated in AD pathophysiology. However, population-level mortality trends in the U.S. among elderly individuals with coexisting hypothyroidism and AD remain poorly characterized.	We conducted a retrospective analysis using the CDC WONDER database to evaluate mortality trends among individuals aged ≥65 years in the U.S. with coexisting hypothyroidism and AD from 1999-2024. Crude and age-adjusted mortality rates (AAMRs) were analyzed overall and stratified by sex, age group, race/ethnicity, and geographic region. Temporal trends were assessed using Joinpoint regression to compute annual percentage change (APC) and average APC (AAPC), and future projections were estimated using ARIMA forecasting.	A total of 60,496 deaths were identified during the study period. Most deaths occurred in nursing homes or long-term care facilities (61.3%), followed by home settings (19.8%). Overall AAMR showed a slight increase from 4.1 in 1999 to 4.9 in 2024 (AAPC: 0.42), with a biphasic distribution (peaks in 2005 and 2020). Females demonstrated a significant increase in mortality (AAPC: 0.85), whereas trends in males were not significant. Individuals aged ≥85 years exhibited a significant rise in mortality (AAPC: 1.01) with 65-74 and 75-84 year age groups showing stable trends. Geographic variation was also seen, with higher rises in mortality rates in rural areas (AAPC: 2.25) compared to urban areas. Forecasting predicted a marginal rise in AAMRs (predicted to reach 5.08 through 2030).	Mortality rates among elderly individuals with coexisting hypothyroidism and AD demonstrate a modest overall increase with significant demographic and geographic disparities. These findings highlight the need for targeted public health strategies, improved access to care in rural areas, and further research into the mechanistic interplay between thyroid dysfunction and neurodegeneration.	National Center for Health Statistics. About multiple cause of death, 1999-2020. CDC WONDER. Accessed January 23, 2026. https://wonder.cdc.gov/mcd-icd10.html. Li Z, Liu J. Thyroid dysfunction and Alzheimer's disease, a vicious circle. Frontiers in endocrinology. 2024 Feb 14;15:1354372. CONTACT Muskan Asghar Qureshi Email: muskanasghar840@gmail.com muskanasghar42@gmail.com  ALZHEIMER'S ASSOCIATION AAIC 26