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Epub 2023 Jun 23.

Early menopause and premature ovarian insufficiency are associated with increased risk of dementia: A systematic review and meta-analysis of observational studies

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PMID: 37393661 DOI: [10.1016/j.maturitas.2023.107792](https://doi.org/10.1016/j.maturitas.2023.107792)

Abstract

Background/aims: Among other risk factors, the decline in estrogen concentrations during menopause may compromise cognitive function. Whether early menopause (EM) is associated with an increased risk of dementia remains unclear. The purpose of this study was to systematically review and meta-analyze current evidence regarding the association between EM or premature ovarian insufficiency (POI) and the risk of dementia of any type.

Materials and methods: A comprehensive literature search was conducted through the PubMed, Scopus and CENTRAL databases up to August 2022. Study quality was assessed using the Newcastle-Ottawa scale. Associations were calculated as odds ratio (OR) with 95 % confidence interval (CI). The I² index was employed for heterogeneity.

Results: Eleven studies (nine assessed as of good and two as of fair quality) were included in the meta-analysis (n = 4,716,862). Women with EM demonstrated a greater risk of dementia of any type than women of normal age at menopause (OR 1.37, 95 % CI 1.22-1.54; I² 93%). However, after excluding a large retrospective cohort study, the results were altered (OR 1.07, 95 % CI 0.78-1.48; I² 94%). Increased risk of dementia was also found in women with POI (OR 1.18, 95 % CI 1.15-1.21; I² 0%). Subgroup analysis showed that this risk was mostly evident in cohort studies, and those which included women with natural menopause.

Conclusions: Women with EM or POI may be at increased risk of dementia compared with women of normal age at menopause, but further research investigating that hypothesis is warranted.

Keywords: Alzheimer's disease; Cognitive function; Dementia; Early menopause; Premature ovarian insufficiency.

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