

The incidence of young onset dementia: a systematic review and meta-analysis

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Background

Young-onset dementia (YOD) denotes persons who have an onset of the disease before the age of 65. Information on the epidemiology of YOD, especially the incidence, is scarce. Insight into the incidence can contribute to further research on the etiology, mechanism and risk factors of YOD. Therefore, we aimed to conduct a systematic review and meta-analysis collecting all published data on the incidence of YOD worldwide.

Method

This systematic review and meta-analysis was conducted using the PRISMA guidelines. A thorough literature search was performed in PubMed, Embase, CINAHL and PsychINFO. Eligible studies were prospective or retrospective population-based studies reporting on the incidence of dementia under the age of 65. No restrictions on language were applied, and studies published between 1990 and March 2020 were screened. Random-effect meta-analyses were used to pool 5-year incidence rates together. Incidence rates were age-standardized for the World Standard Population whenever possible. Subgroup analyses and meta-regression were used to identify factors influencing heterogeneity between studies. The study is registered with PROSPERO, number CRD42019119288.

Result

50 articles were included in the systematic review, of which 42 were included in the meta-analysis. Studies were mostly conducted in Europe, with few studies from North America, Asia and Oceania. Age-standardized incidence rates of YOD increased from 0.15/100,000 in the age group 30-34 years, to 4.83/100,000 in the age group 60-64 years, resulting in an overall incidence rate of 11/100,000 in the total age group 30-64. This corresponds to 360,000 new cases globally per year. Heterogeneity between studies was high. Subgroup analyses showed incidence rates between males and females were similar. Meta-analyses of different dementia subtypes showed incidence was highest for Alzheimer's disease, followed by vascular dementia and frontotemporal dementia. Meta-regression showed geographic location of the studies significantly influenced heterogeneity.

Conclusion

This review showed current age-standardized incidence rates of YOD are estimated to be 11/100,000 person-years. However, there are still knowledge gaps to address in future research, such as differences in incidence by ethnicity and subtypes of dementia.