Hormone therapy and risk of Alzheimer's disease in women:a systematic review and meta-analysis

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Objectives

To assess the relationship between hormone therapy and the risk of Alzheimer's disease in women.

Methords

The following databases were searched for randomized controlled trials (RCTs), case-control studies, and cohort studies: Cochrane Central Register of Controlled Trials, PubMed, Embase from inception to October 2021 and the reference list of retrieved studies. We included studies of the risk of Alzheimer's disease in women receiving hormone therapy with either estrogen therapy or estrogen-progestin therapy. Two independent reviewers assessed the study quality and extracted data.

Results

Nineteen studies enrolling 5 184 607 women were included. The results of RCTs showed the risk of Alzheimer's disease was not relevant to estrogen or estrogen-progestin therapy. The results of cohort studies showed the risk of Alzheimer's disease was lower in women exposed to estrogen compared to those without estrogen exposure (OR 0.84, 95%CI 0.73-0.98), and there was no significant difference regarding Alzheimer's disease risks between estrogen-progestin exposed and unexposed women. The results of case-control studies showed there was no significant difference of Alzheimer's disease risks between estrogen exposed and unexposed women, however, the risk of Alzheimer's disease was higher in women exposed to estrogen-progestin therapy compared with unexposed women(OR 1.05, 95%CI 1.03-1.07). Both cohort studies and case-control studies showed tibolone would not increase the risk of Alzheimer's disease.

Conclusion

The association between estrogen therapy, estrogen-progestin therapy and risk of Alzheimer's disease was still controversial, and using of tibolone would not increase the risk of Alzheimer's disease. More studies need to be conducted to investigate the relationship between hormone therapy and the risk of Alzheimer's disease.

References

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