

Risk Factors of Breast Cancer: A Systematic Review and Network Meta-analysis

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Abstract

Background: The etiology of breast cancer might be explained by 2 mechanisms, namely, differentiation and proliferation of breast epithelial cells mediated by hormonal factors. We performed a systematic review and meta-analysis to update effects of risk factors for both mechanisms.

Method: MEDLINE and EMBASE were searched up to January 2011. Studies that assessed association between oral contraceptives (OC), hormonal replacement therapy (HRT), diabetes mellitus (DM), or breastfeeding and breast cancer were eligible. Relative risks with their confidence intervals (CIs) were extracted. A random-effects method was applied for pooling the effect size.

Results: The pooled odds ratios of OC, HRT, and DM were 1.10 (95% CI = 1.03-1.18), 1.23 (95% CI = 1.21-1.25), and 1.14 (95% CI = 1.09-1.19), respectively, whereas the pooled odds ratio of ever breast feeding was 0.72 (95% CI = 0.58-0.89).

Conclusion: Our study suggests that OC, HRT, and DM might increase risks, whereas breastfeeding might lower risks of breast cancer.

Keywords: breast cancer, meta-analysis, risk factor, systematic review

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