

Soy and Isoflavone Intake And Risk of Endocrine-Related Gynecological Cancer: A Meta-Analysis of Epidemiological Studies.

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Objective: To evaluate the association between soy and isoflavone intake and the risk of endocrine-related gynecological cancer such as ovarian cancer and endometrial cancer by using a meta-analysis of epidemiological studies.

Patients and Methods: We searched PubMed, EMBASE, and the bibliographies of relevant articles in September 2014. We reviewed and selected articles based on predetermined selection criteria.

Results: Sixteen epidemiological studies (11 case-control studies and five cohort studies) were included in the final analysis. In a random-effect meta-analysis of all the included studies, when compared with the lowest level of soy and isoflavone intake, the odds ratio (OR) or relative risk (RR) of the highest level of soy and isoflavone intake was 0.71 (95% confidence interval [CI], 0.59-0.86; $I^2 = 71.4\%$) for endocrine-related gynecological cancer, 0.67 (95% CI, 0.50-0.89; $I^2 = 71.3\%$) for ovarian cancer, and 0.82 (95% CI, 0.50-0.89; $I^2 = 71.3\%$) for endometrial cancer, respectively. However, in the subgroup meta-analyses by study design, there was no significant association between soy and isoflavone intake and the risk of endocrine-related gynecological cancer in five cohort studies (RR, 0.86; 95% CI, 0.64-1.17; $I^2 = 39.2\%$), whereas there was an inverse association in 11 case-control studies (OR, 0.67; 95% CI, 0.53-0.83; $I^2 = 76.8\%$).

Conclusion: Given that a cohort study gives a higher level of evidence than a case-control study, the current meta-analysis suggests there is insufficient evidence to support a preventive efficacy of soy and isoflavone on the risk of endocrine-related gynecological cancer. Further larger prospective cohort studies are required.

Key words: soy, isoflavone, gynecological cancer, meta-analysis