Meta-Analysis for Effect of Dietary Isoflavones on Breast Density and Hot Flush Suppression.

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Received: July 1, 2011 / Revised: July 25, 2011 / Accepted: July 26, 2011

For establishing the efficacy against breast cancer occurrence, women's mammographic breast density and hot flush remission related to pre and post-menopausal symptoms were selected as biomarkers. Meta analysis applied the final selection of 40 papers from Medline to assess the efficacy of isoflavone-rich soy or supplements versus placebo under randomized controlled trials. Interestingly, the exposure to the purified isoflavones was more effective than the exposure to the crude extract of soy isoflavones for hot flush suppression. The length and the amount of dosage dependency is the most appropriately suggested to be one year long with 50~100 mg/day of isoflavone-rich soy or supplements. Funnel plots was used to interpret the results, overall effect of isoflavones on breast density in post-menopausal women was revealed to be less effect [effect size: 0.062, 95% confidence interval (CI): 0.005 to 0.12], than that of pre-menopausal women (effect size: 0.101, CI: -0.003 to 0.205). The reason why breast density was found higher among the pre-menopausal than the post-menopausal women is that the phytoestrogens of dietary isoflavones were antagonized against estrogen by the basis of estrogen receptor binding affinity. Overall, the Meta analysis reported that isoflavone had limited influence on breast density by suppressing the expansion by only 2%, while it was more effective to suppressing the hot flush, showing a dramatic decrease of 23%.

Key words: Breast cancer, isoflavone, genistein, breast density, hot flushes, meta-analysis
