Abstract

Introduction: Osteoporosis has become a condition with an increasing frequency concurrently with a longer life expectancy. There is increasing evidence showing the positive effect of isoflavones in preventing loss of bone mass during post-menopause. However, there are only a few studies available assessing the relationship between isoflavone intake and risk for osteoporotic fractures as the primary endpoint, which is a critical point in order to determine the real usefulness of the aforementioned agents.

Materials and Methods: A meta-analysis was performed combining results from randomized and/or observational clinical trials and prospective cohort studies that compared the frequency of osteoporotic fractures in post-menopausal women taking and not taking isoflavones. Search strategy: We conducted a search looking for clinical trials about osteoporosis (up to June 15, 2007) in the following databases: Cochrane Controlled Trials Register (Cochrane Library Issue 1, 2007), PUBMED (1980 up to June 2007), EMBASE (1980 up to June 2007), PROQUEST, BIREME, TRIP DATABASE, LILACS, and Scielo (since 1980), as well as in the reference lists of all articles. We also contacted the investigators. Selection criteria: Randomized or observational cohort studies comparing flavonoids versus placebo in post-menopausal women, with respect to fracture incidence. Data acquisition and analysis: Three independent reviewers assessed trial quality and gathered the data. We contacted some cooperating agencies in order to obtain published papers. Results: The results of three clinical trials were combined, obtaining a total number of 416 patients (comparing the use of isoflavones versus placebo in the prevention of osteoporotic fractures), and we also included a cohort prospective study in which 75,221 post-menopausal women with no history of fracture or cancer underwent follow-up. Dersimonian test indicated the existence of homogeneity between studies, so a fixed-effect method was used for the combined analysis. It was found that isoflavone use has a significant effect in reducing the risk for fractures in post-menopausal women (RR = 0.72 / 95% CI: 0.620.83). No publication biases were found. Conclusion: that isoflavones may have a positive effect in risk reduction for osteoporotic fractures in the short term (23 years). However, it will be important to perform additional clinical trials and prospective cohort studies considering the incidence of osteoporotic fractures as a primary objective, not only bone mineral density or levels of bone resorption markers. This osteoporotic risk reduction effect may also be assessed in the long term in order to improve certainty of these initial findings.
Keywords

isoflavones, post-menopausal, metanalisis.