

## **Herbal dietary supplements for erectile dysfunction: a systematic review and meta-analysis**

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Erectile dysfunction (ED), a persistent inability to achieve and maintain an erection sufficient to obtain a satisfactory sexual performance, is a common condition mainly affecting men between the ages of 40 and 70 (Eisenberg and Meldrum, 2017). We performed a systematic review and meta-analysis to evaluate the clinical efficacy of herbal medicines in the treatment of ED. Literature search was performed via Pubmed, Google Scholar, Scopus and Web of Science databases (from their inception to March 2017). Randomized controlled trials (RCTs) that assessed the clinical efficacy of herbal medicines (as a monopreparation or as a mixture of multiple herbal extracts, i.e., herbal formulations) on ED were included. The Jadad score and the Cochrane risk of bias tool were used to assess the methodological quality and the risk of bias, respectively. Twenty-four RCTs were identified [five concerning ginseng (*Panax ginseng*), three saffron (*Crocus sativus*), two *Tribulus terrestris*, one each *Lepidium meyenii* and *Pinus pinaster*, and twelve related to herbal formulations]. Ginseng significantly improved erectile function (IIEF-5 score: 140 ginseng, 96 placebo; random-effect model MD: 2.95 points, 95% CI 1.26, 4.64;  $P < 0.01$ ,  $I^2 = 0$ ). Saffron and *Tribulus terrestris* trials generated mixed results. Several herbal formulations were associated with a decrease of IIEF-5 or IIEF-15, although the results are too preliminary. The quality of the included studies varied among the individual studies. Using the Jadad score the median methodological quality score was 4 out of a possible maximum 5. No severe adverse events were observed within all the included trials. In conclusion, there is encouraging evidence suggesting that ginseng may be an effective herbal treatment for ED. However, further, larger and high-quality studies are required before a firm conclusion can be drawn. There are also promising (although very preliminary) results generated by some herbal formulations. Overall, more research in the field, according to the CONSORT statement extension for reporting trials, is justified before a firm recommendation on the use of herbal medicinal products in ED can be made.

Eisenberg ML, Meldrum D. Effects of age on fertility and sexual function. *Fertil Steril*. 2017;107:301-304.