

Immunomodulation with echinacea - a systematic review of controlled clinical trials

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Abstract

We performed a systematic review of controlled clinical trials to check the evidence for the immunomodulatory efficacy of preparations containing extracts of Echinacea. Trials were searched by on-line searches in Medline and Embase, a search in the private database Phytodok, contacts with researchers and drug companies, and by checking references in available articles. All available historically and prospectively controlled trials investigating the prophylactic or

therapeutic immunomodulatory activity of preparations of Echinacea alone or in combination with other plant extracts or homeopathic dilutions in humans were included. Study characteristics, results, and conclusions of primary authors were analyzed using standardized evaluation forms and methodological quality assessment using a predefined score system. A total of 26 controlled clinical trials (18 randomized, 11 double-blind) were identified; 6 of these involved testing three different mono-extracts, and 20 involved testing three different preparations also containing other ingredients. Nineteen trials studied the efficacy of the prophylactic or curative treatment of infections; 4 trials the reduction of side-effects of antineoplastic therapies and 3 trials the modulation of various laboratory immune parameters. The primary authors claimed that 30 of the 34 treatment strategies showed a superior efficacy to those of the control groups. The methodological quality of most studies was low and only 8 trials scored more than half of the maximum possible score points. Existing controlled clinical trials indicate that preparations containing extracts of Echinacea can be efficacious immunomodulators. However, the evidence is still insufficient for clear therapeutic recommendations as to which preparation to use and which dose to employ for a specific indication. Further methodologically sound, randomized clinical trials should be conducted.

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