

Efficacy and Mechanisms of Acupuncture for Depression: A Meta-Analysis of Clinical and Preclinical Evidence

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Abstract : Major depressive disorder (MDD) is a prevalent mental health condition with a substantial economic impact and limited treatment options. Acupuncture has gained attention as a promising non-pharmacological intervention for alleviating depressive symptoms. However, its mechanisms and clinical effectiveness remain incompletely understood. This meta-analysis aims to (1) synthesize existing evidence on the mechanisms and clinical effectiveness of acupuncture for depression and (2) compare these findings with pharmacological interventions, providing insights for future research. Evidence from animal models and clinical studies indicates that acupuncture may enhance hippocampal and network neuroplasticity and reduce brain inflammation, potentially alleviating depressive disorders. Clinical studies suggest that acupuncture can effectively relieve primary depression, particularly in milder cases, and is beneficial in managing post-stroke depression, pain-related depression, and postpartum depression, both as a standalone and adjunctive treatment. Notably, combining acupuncture with antidepressant pharmacotherapy appears to enhance treatment outcomes and reduce medication side effects, addressing a critical issue in conventional drug therapy's high dropout rates. This meta-analysis, encompassing 12 studies and 710 participants, draws data from eight digital databases (PubMed, EMBASE, Web of Science, EBSCOhost, CNKI, CBM, Wangfang, and CQVIP) covering the period from 2012 to 2022. Utilizing Stata software 15.0, the meta-analysis employed random-effects and fixed-effects models to assess the distribution of depression in Traditional Chinese Medicine (TCM). The results underscore the substantial evidence supporting acupuncture's beneficial effects on depression. However, the small sample sizes of many clinical trials raise concerns about the generalizability of the findings, indicating a need for further research to validate these outcomes and optimize acupuncture's role in treating depression.

Keywords : Chinese medicine, acupuncture, depression, meta-analysis

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