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Objectives: The objectives of this Cochrane systematic review were to determine the efficacy and safety of acupuncture therapy in patients with autism spectrum disorder (ASD). We intend to review whether acupuncture is effective in improving social, communication, behavioural impairment, quality of life and overall functioning, and whether acupuncture is associated with any adverse effects.

Methods: We searched the Cochrane Developmental, Psychosocial and Learning Problems Group (July 2009), the Cochrane Central Register of Controlled Trials (The Cochrane Library Issue 3, 2009), MEDLINE, EMBASE, PsycINFO, CINAHL, AMED, Dissertation Abstracts International, Cochrane CM Field Trials Register, NCCAM, NIH Clinical Trials Database. We also searched TCMLARS, China Biological Medicine Database, China Journal and Doctor Dissertation Full-text Database, China Proceeding Conference Database, Chinese Acupuncture Trials Register, and Index to Chinese periodical literature on WWW (tw). The proceedings of relevant conferences and the reference lists from relevant trials were reviewed. No language restrictions were imposed. Selection criteria were: randomised controlled clinical trials using random or quasi-random allocation of treatment. Studies comparing acupuncture with at least one control group that uses no treatment, placebo treatment or sham treatment were included.

Results: Six trials studied autistic children met the inclusion criteria, with four studies in Hong Kong, one each in mainland China and in Egypt. Meta-analysis was not done in three trials (Chinese trial, one of Hong Kong trials and Egyptian trial), which compared acupuncture with no acupuncture, due to the heterogeneity of outcome measures, although the improvement of autistic behaviour (Chinese trial) or language development (Egyptian trial) or overall functioning (Hong Kong trial) was reported respectively. In contrast, meta-analysis was performed in the remaining three Hong Kong studies, comparing acupuncture with sham acupuncture. Two trials showed a significant beneficial effect of tongue acupuncture in achieving overall functioning (weighted mean difference [WMD]=4.39; 95% CI, 2.85-5.92), self-care (WMD=3.63; 95% CI, 2.01-5.26), cognition (WMD=1.18; 95% CI, 0.37-1.99), comprehension language age (WMD=0.16; 95% CI, 0.03-0.29) and language age (WMD=2.08; 95% CI, 0.11-4.04), while another Hong Kong trial found a positive effect of body electro-acupuncture in improving language comprehension, self-care assistance and clinical global impression of children with ASD. Regarding the effect of acupuncture, all three remaining Hong Kong trials (two tongue acupuncture trials and one body electro-acupuncture trial) showed a significantly favourable effects in ameliorating overall functioning (WMD=3.69; 95% CI, 2.33-5.06), self-care (2.41; 95% CI, 1.16-3.65), cognition (WMD=0.87; 95% CI, 0.27-1.47), comprehension language age (WMD=0.15; 95% CI, 0.03-0.26) and language age (WMD=1.34; -0.02 to 2.69). A mild positive effect of acupuncture on autistic behaviour (WMD= -0.09; 95% CI, -0.09 to 0.03 [RFRLS] and WMD= -5.02; 95% CI, -11.51 to 1.48 [ATEC]) was also found, though not reaching statistical significance. Chinese trial was of low quality without adequate description of randomisation method, concealment of randomisation or blinding. On the other hand, either Chinese trial or Hong Kong and Egyptian trials were small trials with short follow-up.

Conclusions: Acupuncture might be useful as adjunctive to conventional western approach in improving functional aspects in children with ASD. Much larger high quality clinical trials with long-term follow-up are needed.