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**Introduction**

Acupuncture is one of the main modalities of treatment in traditional Chinese medicine for more than 2,000 years and its use for post-stroke rehabilitation in China is based on a large body of preclinical and clinical research. It is claimed that being a relatively simple, inexpensive and safe treatment compared to other conventional interventions, acupuncture has been well accepted by Chinese patients and is widely used to improve motor, sensation, speech and other neurological functions in patients with stroke. As a therapeutic intervention, acupuncture is also increasingly practiced in some Western countries. The lack of English language publications has, however, impeded any serious consideration of acupuncture as a treatment for post-stroke rehabilitation and it remains uncertain whether the existing evidence is scientifically rigorous to be recommended for routine use.

This technology review was conducted following a request from the Director of Traditional and Complementary Medicine (T&CM) Division, Ministry of Health Malaysia, to provide the available evidence for ensuring T&CM practice in Malaysia is safe and conforms to acceptable standards for the benefits of the public, and in line with the requirement of the Traditional and Complementary Medicine Act 2013.

**Objective/Aim**

The objective of this technology review was to review evidence on the effectiveness, safety and cost-effectiveness of acupuncture therapy in post-stroke rehabilitation patients.

**Results and Conclusions**

There was high level of evidence on the effectiveness of acupuncture for post-stroke recovery. However, the included trials in most of the systematic reviews have biases due to inappropriate randomised sequence generation, lack of allocation concealment, inadequate level of blinding, poor description of patient withdrawals from the studies and the adverse events and hence, varying the quality of the included trials. Nevertheless, findings from the systematic reviews showed that:

1. Acupuncture seemed to be superior to conventional treatments or provide added value in terms of:
  - Improvement in global neurological deficit [odds ratio (OR)=6.55; 95% confidence interval (CI): 1.89 to 22.76]
  - Improvement in motor impairment scales, generalized stroke scales, and disability assessment (OR=4.33; 95% CI: 3.09 to 6.08)
2. Scalp acupuncture (SA) seemed to be effective as an adjunct treatment to the conventional care (medication or rehabilitation) in terms of:
  - i. Total efficacy rate:
    - SA plus medication versus medication: [risk ratio (RR)=1.19; 95% CI: 1.05 to 1.36]
    - SA plus rehabilitation versus rehabilitation (RR=1.12; 95% CI: 1.01 to 1.23)
  - ii. Activities of daily living (Barthel Index)
    - SA plus medication versus medication: [standardized mean difference (SMD)=0.78; 95% CI: 0.40 to 1.17]
    - SA plus rehabilitation versus rehabilitation [weighted mean difference (WMD)=13.41; 95% CI: 11.05 to 15.76]

- iii. Changes in neurological function (Neurological deficit score)
  - SA plus medication versus medication: (SMD=-0.61; 95% CI: -0.81 to -0.40)
3. Electro-acupuncture could be effective in decreasing post-stroke spasticity (Weighted mean difference 0.72; 95% CI: 0.29 to 1.14;  $p<0.001$ ) compared with usual care or placebo.
4. Acupuncture treatment plus rehabilitation was superior compared with only rehabilitation for the recovery of apoplectic hemiplegia in terms of:
  - Improvement motor function ( $p<0.05$ )
  - Improvement activities of daily living ( $p<0.05$ )
5. Acupuncture-massage therapy may have curative effects on shoulder-hand syndrome in hemiplegia patients compared to rehabilitation group in terms of:
  - Improvement in numeric pain rating scale ( $p<0.05$ )
  - Fewer patients with shoulder-hand syndrome at Steinbrocker stage II or III ( $p<0.05$ )

Acupuncture seemed to be relatively safe with minimal adverse events, and there was no retrievable evidence on its cost-effectiveness. The cost per session varies according to scope of treatment ranges between RM 60 to RM 120. However, it was provided free of charge by T&CM unit in several dedicated governmental hospitals.

#### **Methods**

Literatures were searched through electronic databases specifically PubMed, Medline, Cochrane, Ovid, Horizon scanning databases, other websites; US FDA, MHRA and from non scientific database - Google search engine. In addition, a cross-referencing of the articles retrieved was also carried out accordingly to the topic. Relevant articles were critically appraised and evidence graded using US/Canadian Preventive Services Task Force.