The Seven Wonders of China in Stroke Therapy: Fact or Illusion?

To the Editor:

In the June 2007 issue of Stroke, Wu et al presented figures of their meta-analysis of controlled trials suggesting that (1) there are at least 21 traditional Chinese medications that significantly improve neurological deficit after stroke, and (2) seven of these treatments in a pooled analysis also significantly decrease case fatality. These 2 figures—despite the opposing interpretation in the text—may be misleading by suggesting for readers of the visual type that the problem of acute stroke treatment is finally solved, and the solution is the use of traditional Chinese medications: they triple the chance for neurological improvement, and the treatment halves the odds of dying even if these drugs are used outside the 3-hour time window of thrombolysis with recombinant tissue plasminogen activator (rtPA).

The seven wonders of the ancient world—the pyramids of Egypt, the hanging gardens of Semiramis in Babylon, the statue of Zeus at Olympia, the temple of Artemis at Ephesus, the mausoleum at Halicarnassos, the colossus at Rhodes, and the lighthouse of Alexandria—products of human science, art and technology, were thought to be impossible to create in their times. We are also skeptic about miracle treatments in acute stroke. To date, among pharmacological interventions only rtPA and aspirin proved to be effective in this condition. The use of rtPA is limited, and the efficacy of aspirin is not high. With our ongoing trust in science and technology many of us still hope for a wonder: a medical treatment that is highly effective in most patients with acute stroke outside the therapeutic window of rtPA. To find such treatments is not very hopeful because out of over a thousand interventions tested to date, all failed in randomized controlled clinical trials after optimistic findings in preclinical studies.

Because of the disappointments in Western medicines and the lack of treatment that could be used with high efficacy routinely in all patients with ischemic strokes, recent attention has turned toward “nonconventional” or “complementary” interventions, including traditional oriental herbal medicines. This interest is reflected by the 10 Cochrane reviews on the efficacy and safety of such treatments in acute stroke. The completed reviews on dan shen and ginkgo biloba concluded that these interventions resulted in “significant improvement in neurological deficit at the end of treatment.” The reviewers, however, warn that the results might be caused by bias due to problems with trial methodology. Eight other reviews—on chuan xiong, deng zhan hua, puerarin, dani shen and ginko biloba—might be caused by bias due to problems with trial methodology. The reviewers, however, warn that the results might be caused by bias due to problems with trial methodology.

The authors used Cochrane methodology to review the existing clinical evidence regarding these TCPMs, and very properly chose death and disability at 3 months as the primary outcome. Improvement in neurological deficit was the secondary outcome measure. Astonishingly, of the 22 medications, 21 were claimed to significantly improve neurological deficit, and the effect was large with narrow confidence intervals: those who got TCPM—irrespective of which one—had on average over 3 times higher odds for improvement than the control group. Case fatality was analyzed for 7 medications—overall they significantly decreased the odds of death by half.

The readers should be aware that even if sophisticated Cochrane methodology is used to analyze data, the mathematical result of the meta-analysis will not be clinically reliable if the original trials had methodological flaws. In full agreement with the authors’ conclusion it should be emphasized that although their Figures 2 and 3 suggest clinically significant benefit, no recommendations on these treatments can be made until properly designed randomized controlled trials prove their value in acute stroke treatment.

Disclosures

None.

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Stroke. 2007;38:e142; originally published online September 13, 2007;
doi: 10.1161/STRKKEAHA.107.495515

The online version of this article, along with updated information and services, is located on the
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