Meta-Analysis of Antidepressant Treatment for Patients With Poststroke Depression

To the Editor:

Because of our pharmacoepidemiologic research focus, we reviewed the recent article by Hackett et al entitled “Management of depression after stroke” in the May 2005 issue of Stroke. The article provided a critical systematic review of antidepressant therapies after stroke based on 7 treatment trials and 9 prevention trials. In Figure 2, the authors compared the antidepressants with placebo in terms of average change in depression scores between the baseline and end of treatment. Although there were considerable variations of depression measures as authors mentioned, we believe that it would be more meaningful to provide quantitative overall effectiveness comparisons by using meta-analysis method. We retrieved and reviewed the original articles listed in Figure 2. It should be noted that, attributable to the predefined selection criteria in the Hackett et al study, the Robinson et al study should be included for both treatment and prevention trials because its crossover design did provide the comparisons of the depression scores in the depressed patients between the therapy group and control group. On the other hand, the Lipsey et al original article did not provide the detail data (the means and standard deviations at the baseline and end of treatment). Therefore, we thought that the overall effects of antidepressant treatment in terms of various depression scores would better be estimated by separating the pretreatment and post-treatment instead of calculating the mean differences. Based on the limited data directly from the retrieved articles, we estimated the overall depression treatment effects. With only respect to the treatment trials, before the administration of any treatments, the overall depression scores in the patients of treatment groups were a little bit higher (more depressed) than the patients in the control groups, but the difference was not statistically significant (weighted mean difference [WMD]= 1.01, 95% CI, −0.24 to 2.27, statistical Z score [Z]=1.59, P=0.11; see the Figure). However, after the antidepressant treatments, patients in the treatment groups became statistically less depressed than the patients in the control groups in terms of lower depression scores (WMD=−1.88, 95% CI, −3.58 to −0.17, Z=2.16, P=0.03; see the Figure). It indicated that antidepressant treatments were effective in the patients after the stroke in terms of reducing the symptoms of depression.

In addition, the antidepressant treatment effect should be time-dependent. Based on available data published in 3 studies, we measured WMD between the 2 groups as 0.60 (95% CI, −0.75 to 1.94; Z=0.87, P=0.39) at the beginning of antidepressant treatment. In the middle of treatments (3 weeks in Andersen et al study, 1 month in Fruehwald et al study, and 30 days in Wiart et al study), the WMD became −1.85 (95% CI, −3.55 to −0.14, Z=2.12, P=0.03), which demonstrated that the depression scores of patients in the treatment group became significantly lower than the those of patients in the control group. At the end of treatment, the WMD decreased to −3.06 with 95% CI, −5.12 to −1.0 (Z =2.92, P=0.004). Above meta-analysis data provided an in-depth assessment effect of antidepressants for patients after the stroke.

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Comparison of antidepressant versus placebo for the management of depression after stroke: depression scores of pretreatment and post-treatment, respectively.

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