Depression is an important consequence of stroke, affecting one third of patients, that often goes undetected or is inadequately treated and managed. This is an update of a Cochrane review we first published in 2004 to determine whether pharmacological, psychological, or electroconvulsive treatment (ECT) of depression in patients with stroke can improve outcome.¹

Search Strategy
We searched the trials registers of the Cochrane Stroke Group (last searched October 2007) and the Cochrane Depression Anxiety and Neurosis Group (last searched February 2008). In addition, we searched the Cochrane Central Register of Controlled Trials (The Cochrane Library, Issue 1, 2008), MEDLINE (1966 to May 2006), EMBASE (1980 to May 2006), CINAHL (1982 to May 2006), PsycINFO (1967 to May 2006), and other databases. We also searched reference lists, clinical trials registers, conference proceedings, and dissertation abstracts and contacted authors, researchers, and pharmaceutical companies.

Selection Criteria
We considered all truly randomized controlled trials comparing pharmaceutical agents with placebo, or various forms of psychotherapy or ECT with standard care (or attention control), to treat depression in patients with stroke.

Results
We identified 16 trials (17 interventions), with 1655 participants at entry. Data were available for 13 pharmaceutical trials and 4 trials of psychotherapy. There were no trials of ECT. There was evidence of benefit of pharmacotherapy in terms of a complete remission of depression (odds ratio [OR] 0.47, 95% confidence interval [CI] 0.22 to 0.98) and a reduction (improvement) in scores on depression rating scales, but there was also evidence of an increase in adverse events (OR 1.96; 95% CI 1.19 to 3.24). There was no evidence of benefit of psychotherapy. The analyses were complicated by the lack of standardized diagnostic and outcome criteria including multiple measures of depression within and between trials without a priori identification of the primary measure, differing analytic methods, with few trials prospectively recording and reporting adverse events.

Discussion
The addition of 5 new pharmacotherapy trials since 2004 has altered previous findings to show a small but significant effect of pharmacotherapy for treating depression and reducing depressive symptoms after stroke and an associated significant increase in adverse events. Antidepressants should be used with caution in people with persistent depressive symptoms after stroke as little is known about the risks, especially of seizures, falls, and delirium. More research is required before recommendations can be made about the routine use of such treatments in light of the increase in adverse events and a lack of efficacy of selective serotonin reuptake inhibitors except in those with severe depression in nonstroke populations.² With the addition of 2 new psychotherapy trials there is still no evidence to support the use of psychotherapy on its own to treat depression after stroke.

There is a need for further research using more rigorous methods including concealment of randomization, and blinded treatment allocation and outcome assessments. Future trials to treat depression after stroke should be of adequate power, clearly identify a priori primary and secondary end points, and include prospective assessment and complete reporting of adverse events. Any treatment strategy should be continued for a sufficient duration and follow-up, so that rates of relapse or maintenance of remission can be assessed.

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**References**

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