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## Pharmaceutical interventions for emotionalism after stroke (Review)

Allida S, Patel K, House A, Hackett ML

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Pharmaceutical interventions for emotionalism after stroke.

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[Intervention Review]

# Pharmaceutical interventions for emotionalism after stroke

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## ABSTRACT

### Background

Antidepressants may be useful in the treatment of abnormal crying associated with stroke. This is an update of a Cochrane Review first published in 2004 and last updated in 2010.

### Objectives

To determine whether pharmaceutical treatment reduces the frequency of emotional displays in people with emotionalism after stroke.

### Search methods

We searched the trial register of Cochrane Stroke (last searched May 2018). In addition, we searched the Cochrane Central Register of Controlled Trials (CENTRAL; to May 2018), MEDLINE (1966 to 14 May 2018), Embase (1980 to 14 May 2018), CINAHL (1982 to 14 May 2018), PsycINFO (1967 to 14 May 2018), BIOSIS Previews (2002 to 14 May 2018), Web of Science (2002 to 14 May 2018), WHO ICTRP (to 14 May 2018), ClinicalTrials.gov (to 14 May 2018), and ProQuest Dissertations and Theses Database (to 14 May 2018).

### Selection criteria

Randomised controlled trials (RCTs) and quasi-RCTs comparing psychotropic medication to placebo in people with stroke and emotionalism (also known as emotional lability, pathological crying or laughing, emotional incontinence, involuntary emotional expression disorder, and pseudobulbar affect).

### Data collection and analysis

Two review authors independently selected studies, assessed risk of bias, extracted data from all included studies, and used GRADE to assess the quality of the body of evidence. We calculated mean difference (MD) or standardised mean difference (SMD) for continuous data and risk ratio (RR) for dichotomous data with 95% confidence intervals (CIs). We assessed heterogeneity using the  $I^2$  statistic. The primary emotionalism measures were the proportion of participants achieving at least a 50% reduction in abnormal emotional behaviour at the end of treatment, improved score on Center for Neurologic Study - Lability Scale (CNS-LS), Clinician Interview-Based Impression of Change (CIBIC) or diminished tearfulness.

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Pharmaceutical interventions for emotionalism after stroke (Review)

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## Main results

We included seven trials with a total of 239 participants. Two trials were of cross-over design, and outcome data were not available from the first phase (precross-over) in an appropriate format for inclusion as a parallel randomised controlled trial (RCT). Thus, the results of the review are based on five trials with 213 participants. Treatment effects were observed on the following primary endpoints of emotionalism: There is very low quality of evidence from one small RCT that antidepressants increased the number of people who had 50% reduction in emotionalism (RR 16.50, 95% CI 1.07 to 253.40; 19 participants) and low quality evidence from one RCT of improved scores on Center for Neurologic Study - Lability Scale (CNS-LS) and Clinician Interview-Based Impression of Change (CIBIC) with antidepressants (RR 1.44, 95% CI 0.95 to 2.19; 28 participants). There was moderate quality evidence from three RCTS that they increased the number of people who had a reduction in tearfulness (RR 2.18, 95% CI 1.29 to 3.71; 164 participants); and low quality evidence from one RCT of improved scores on the Pathological Laughter and Crying Scale (PLCS) (MD 8.40, 95% CI 11.56 to 5.24; 28 participants).

Six trials reported adverse events (death) and found no difference between the groups in death (RR 0.59, 95% CI 0.08 to 4.50; 6 RCTs, 172 participants, moderate-quality evidence).

## Authors' conclusions

Antidepressants may reduce the frequency and severity of crying or laughing episodes based on very low quality evidence. Our conclusions must be qualified by several methodological deficiencies in the studies and interpreted with caution despite the effect being very large. The effect does not seem specific to one drug or class of drugs. More reliable data are required before appropriate conclusions can be made about the treatment of post-stroke emotionalism. Future trialists investigating the effect of antidepressants in people with emotionalism after stroke should consider developing and using a standardised method to diagnose emotionalism, determine severity and assess change over time; provide treatment for a sufficient duration and follow-up to better assess rates of relapse or maintenance and include careful assessment and complete reporting of adverse events.

## PLAIN LANGUAGE SUMMARY

### Pharmaceutical interventions for emotionalism after stroke

#### Review question

Does pharmaceutical treatment reduce the frequency of unwanted emotional displays in people with emotionalism after stroke compared to placebo?

#### Background

Emotionalism often occurs after stroke. Emotionalism means that the person has difficulty controlling their emotional behaviour. People after stroke may suddenly start crying or, less commonly, laughing for no apparent reason. This is distressing for that particular person and their carers. Antidepressants, known to be helpful in people with depression, may be an effective treatment for emotionalism after stroke, but there have been very few randomised controlled trials in this area.

#### Search date

We identified studies by searches conducted on 14 May 2018.

#### Study characteristics

We included seven randomised controlled trials involving 239 participants in the review, which reported on the use of antidepressants for treating emotionalism. Trials ranged from small (10 participants) to large (92 participants). Mean/median age of participants ranged from 57.8 years to 73 years. Studies were from Europe (UK: 1, Denmark: 1, Scotland: 1, and Sweden: 1); Asia (South Korea: 1; and Japan: 1); and the USA: 1.

#### Key results

We included seven trials involving 239 participants (we identified no new trials since the previous version of the review). Two trials were of cross-over design, and outcome data were not available from the first phase (precross-over) in an appropriate format for inclusion as a parallel randomised controlled trial (RCT). Data were only available for five trials with 213 participants. We observed treatment effects on the following: 50% reduction in emotionalism, improvements (reduction) in lability, Clinician Interview-Based Impression

of Change (CIBIC), diminished tearfulness and scores on the Pathological Laughter and Crying Scale (PLCS). However, confidence intervals were wide indicating that treatment may have had only a small positive effect, or even a small negative effect (in one trial). Six trials reported death as an adverse event and found no differences between groups.

#### **Quality of the evidence**

We rated the evidence from very low to moderate quality due to these being small trials with some degree of bias.

#### **Conclusion**

Antidepressant drugs appear to reduce outbursts of crying or laughing. More trials with systematic assessment and reporting of adverse events are needed to ensure that these benefits outweigh the risks.