

# Pharmacologic Treatment Options For Post-Stroke Depression: Focused On Selective Serotonin Reuptake Inhibitors vs. Tricyclic Antidepressants

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## 1. Introduction

Approximately 700,000 Americans suffer a stroke or cerebrovascular accident (CVA) each year, making it the third leading cause of death, and a leading cause of long-term disability[1]. The number of stroke survivors is increasing because of improvement in the management of acute stroke. This has resulted in greater numbers of stroke survivors who will suffer from significant residual physical and psychological impairments[2]. Depression is an important complication following the event of a stroke. Poststroke depression (PSD) affects 20-50 percent of patients within one year after stroke[3]. Depression is considered to be the most common emotional outcomes of stroke[4]. PSD is often not detected or inadequately treated by healthcare professionals[5]. The challenge of accurately diagnosing depression after stroke is a concern of healthcare providers.

The prevalence of post-stroke depression is undeniably high and on the rise due to the increasing age of today's population. The main objective of this research paper is to outline the efficacy and safety of the pharmacologic treatment options for poststroke depression, according to the most recent medical literature available. Furthermore, there is little evidence in the literature regarding evidence-based guidelines for clinical practitioners to reference in regard to selection, timing, and duration of treatment when faced with this increasingly common medical dilemma.

## 2. Methods, Results, Discussion, and Significance

An evidence-based systematic review of the current literature was conducted utilizing multiple databases to identify randomized, placebo-controlled trials examining the pharmacologic treatment options for Poststroke Depression. Databases utilized were Pub Med, Medline, CINAHL, Expanded Academic ASAP, PsycINFO, Ovid, and First Search databases from 1990 to the present. The search was done using the keywords of poststroke depression, treatment AND poststroke depression, stroke AND depression, cerebrovascular accident AND depression, antidepressant treatment AND poststroke depression.

Articles were individually reviewed and selected based on the quality of methodology and randomization of each individual study; emphasis was on randomized-controlled trials (RCTs). Articles selected were dated no earlier than 1990. Patients in the studies analyzed had no history of depressive disorders or other psychiatric disturbances previous to stroke. Depression will be defined individually by each study included in this article according to specific DSM IV criteria and other tools used to assess level of depression. Based on a preliminary evaluation of the available literature, there was a significant amount of research studies focused on SSRIs and TCAs. Therefore, this research project is designed to compare the studies on these two classes of antidepressants as they relate to the treatment of PSD.

Twenty-two pharmacological articles were selected for review; 14 were RCTs, 8 other. All 22 articles were examined but this study will particularly focus on the RCTs examining treatment of PSD. In the RCTs, a cumulative total of 847 patients were finally selected for review. The average time from onset of acute stroke to enrollment in the research studies was less than 12 months. Among the 14 RCT treatment trials, some comparing more than one drug to placebo; 10 trials used SSRI, 6 trials tested TCA, and 4 studies examined other antidepressants. The SSRIs included were fluoxetine, citalopram, and sertraline; TCAs included were nortriptyline; and other antidepressants included were reboxetine (a NARI-noradrenaline reuptake inhibitor), methylphenidate (a psychostimulant), and maprotiline (a tetracyclic antidepressant). The average duration of treatment in the trials ranged from 6 weeks to 26 weeks.

Based on this review, it was determined that several treatment options exist. Comparison of the data extracted from the studies showed variable recommendations for the pharmacologic treatment of PSD. This research study was designed to focus on RCTs. There was a total of fourteen treatment trials found in the literature. Of these fourteen, Table 1 demonstrates the distribution of studies which demonstrated clinical evidence to support various antidepressants.

The superiority of one drug over the other cannot be accurately deduced from the literature. However, it is apparent that SSRIs are more commonly prescribed today for treatment of PSD than TCAs. Fluoxetine has the most RCTs supporting its use. It has shown to be safe and efficacious when started at 20 mg/day. Initial doses of any medication when starting in an elderly patient must be small and side effects should be closely monitored by the clinician.

Table: 1

Drug Class	Name	Number of RCTs	Reference Number
TCA	Nortriptyline	5	[6-10]
SSRI	Sertraline	1	[11]
	Fluoxetine	5	[6, 9, 12-14]
	Citalopram	2	[15, 16]
OTHER	Reboxetine	2	[15, 17]
	Methylphenidate	1	[18]

### 3. Conclusions

The approach to diagnosing and treating PSD has proven to be exceedingly difficult based on the numerous inconsistencies in the literature. Effective treatment depends on an accurate diagnosis. The diagnosis of PSD should be considered in any patient following stroke with loss of energy, loss of appetite, sleep disturbances, alteration of mood, agitated state, or suicidal thoughts. Antidepressants should be chosen with careful attention to patient specific condition, side-effect risks, and drug interactions with concurrent medication. SSRIs are commonly prescribed today for treatment of PSD. Fluoxetine has the clinical data supporting its use. Further trials with larger sample sizes and longer duration of treatment are still needed to accurately provide treatment recommendations to practitioners.

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