Jain, J Clin Trials 2014, 4:2
DOI: 10.4172/2167-0870.1000e118

Journal of Clinical Trials

Editorial Open Access

Effect of Ascorbic Acid on Mental Depression Drug Therapy: Clinical Study

Shailesh Jain*

Regional Chair, Dept of Psychiatry, Texas Tech University Health Science Center, USA

The above article is amongst first articles to show empirical evidence in the form of double-blind placebo-controlled design, the supplementary effect of ascorbic acid in the treatment of depression. Briefly, the study entailed of ascorbic acid 500 mg per day in combination with antidepressant in the active arm along with use of placebo with antidepressant in the control arm. The study found significant reduction in the Hamilton Depression Rating Scale Scores in the patients of the active arm at the end of eight weeks of trial.

The literature has supported the role of vitamin D in the treatment of clinical depression particularly in the elderly population and have even pointed out that nonresponse to antidepressant could be secondary to low levels of vitamin D levels. However, the role of ascorbic acid in the treatment of clinical depression mostly in the form of supplementation of traditional antidepressants has not been explored. Ascorbic acid acts as a cofactor for dopamine beta hydroxylase in the formation of norepinephrine. Ascorbic acid is also shown to be necessary for the conversion of tryptophan to 5 – hydroxy tryptophan and the formation of important neurotransmitters such as epinephrine from dopamine. Affect is also shown to alter the redox state of NMDA glutamate receptors blocking of NMDA calcium gated channels. The antagonism of NMDA receptors has been shown to exhibit antidepressant like activities in animals. Such antagonism of NMDA receptors has been shown to prevent neuronal excitotoxic damage. Ascorbic acid is also known to potentiate the behavioral response to anti-dopaminergic such as the antipsychotics. As a possible mechanism for the antidepressant effect of ascorbic acid could be its role as an antioxidant. A number of studies (Yanik, Erel, & Kati, 2004) have indicated that major depression is associated with increased levels of superoxide dismutase and decreased levels of plasma ascorbic acid. Ascorbic acid is shown to be able to scavenge a broad spectrum of reactive oxidant and is therefore one of the most important exogenous antioxidants in the body. Treatment with antidepressant such as frosting and citalopram has been shown to reverse the increased levels superoxide dismutase [1]. Interestingly, besides the mood, ascorbic acid administration did not show any significant changes in insomnia, feelings of guilt, psychomotor retardation or insight.

Clinically, the study reconfirms a previous study by Brody (2002) [2]. The study also showed similar decrease in Beck Depression scale scores in patients treated with supplementary ascorbic acid.

Another pediatric double-blind placebo-controlled study [3,4] has shown efficacy of hider does off ascorbic acid (1000 mg per day) supplementation with an average dose of fluoxetine (10-20 mg per day). The fluoxetine ascorbic acid combination showed a significant decrease in depressive symptoms in comparison to fluoxetine plus placebo group as measured by the CDRS. There are no significant side effects noted. The study concluded that ascorbic acid may be an effective adjuvant agent in the treatment of major depressive disorder and pediatric population.

References

1. Amr M, El-Mogy A, Shams T, Vieira K, Lakhan SE (2013) Efficacy of vitamin C as an adjunct to fluoxetine therapy in pediatric major depressive disorder: A randomized, double-blind, placebo-controlled pilot study. Nutr J 12: 31.
2. Brody S (2002) High-dose ascorbic acid increases intercourse frequency and improves mood: a randomized controlled clinical trial. Biol Psychiatry 52: 371-374.
3. Khanzode SD, Dakhale GN, Khanzode SS, Saoji A, Palasodkar R(2003) Oxidative damage and major depression: The potential antioxidant action of selective serotonin re-uptake inhibitors. Redox Report 8: 365-370.
4. Yanik M, Erel O, Kati M (2004) The relationship between potency of oxidative stress and severity of depression. Acta Neuropsychiatrica 16: 200-203.

***Corresponding author:** Shailesh Jain, Regional Chair, Dept of Psychiatry, Texas Tech University Health Science Center, USA, Tel: 432-335-1777; Fax: 432-335-1788; E-mail: bobby.jain@ttuhsc.edu

Received March 28, 2014; **Accepted** March 29, 2014; **Published** March 31, 2014

Citation: Jain S (2014) Effect of Ascorbic Acid on Mental Depression Drug Therapy: Clinical Study. J Clin Trials 4: e118. doi:10.4172/2167-0870.1000e118