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Review article

Ascorbic acid: A therapeutic viability in anxiety disorders

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Abstract

Anxiety, a subjective feeling of unease, discomfort, apprehension or fearful concern is the most common psychiatric illness seen in patients irrespective of nations, societies and religions. Although it is a normal, emotional, reasonable and expected response to real or potential danger however, if the symptoms of anxiety are prolonged, irrational, disproportionate and/or severe and occur in the absence of stressful events then, these are called Anxiety Disorders which are accompanied by a host of autonomic and somatic manifestations. Studies have suggested that oxidative stress triggers and play an important role in patho-biology of anxiety and antioxidants have shown beneficial results in preclinical and clinical studies. Vitamin C (ascorbic acid) is a well-known antioxidant that is involved in anxiety, stress, depression, and fatigue and mood state in humans. Vitamin C is required for growth and repair of tissues, including collagen and synthesis of norepinephrine and serotonin. It also elevates moods, reduces stress and reduces anxiety. The biochemical functions of vitamin C include stimulation of certain enzymes, collagen biosynthesis, hormonal activation, detoxification of histamine, phagocytic functions of leukocytes, and formation of nitrosamine and proline hydroxylation amongst others. A deficiency of vitamin C reduces production of neurotransmitters associated with anxiety while Vitamin C infusions increase blood vessel smooth muscle communications among small capillaries and increase body's ability to transport blood through brain. Although exact mechanism is yet to be elucidated, yet its involvement in catecholamine, serotonin and neuropeptide synthesis, inhibition of peroxidation of membrane phospholipids and as a scavenger of free radicals in the brain may be a suitable explanation for its anxiolytic mechanism.

Keywords: Anxiety, ascorbic acid, GABA, neuropeptide, oxidative stress, serotonin.

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