

Immediate effects of vagus nerve stimulation (vns) for the treatment of panic attack disorders

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Abstract

Unresponsive panic attack disorder cases to treatments are main problem for the cardiology and emergency medicine clinics. Nowadays, new approaches to panic attack disorder are advancing. One of these approaches is Vagus Nerve Stimulation therapy. In this case article, VNS response of four panic attack cases have been reported and discussed.

Keywords: Vagus Nerve Stimulation; Panic Disorder

Introduction

Panic attacks are terrifying and can happen without warning or any reason, causing sudden fear and extreme nervousness as if one is choking, and perhaps worst feeling, "going crazy," for 10 minutes or more. During panic, patient may feel like having a heart attack or dying. Symptoms include fast or irregular heartbeat, difficulty in breathing, chest pain, sweating, muscle tension, difficulty in sleeping. Usually, panic is short-lived and is often related to a frightening event that happens to person. If panic occurs unrelated to situations, happens frequently, and is followed by at least 30 days of worry about another panic attack, this is termed "panic disorder". Not every person who has a panic attack will develop panic disorder. There is evidence that panic disorder is sometimes genetic (1).

The disorder most often begins during the late teens and early adulthood and strikes twice as many American women as men. No one knows what causes panic disorder, though researchers suspect a combination of biological and environmental factors, including family history, stressful life events, drug and alcohol abuse.

Along with the other types of anxiety disorders (obsessive-compulsive disorder, generalized anxiety disorder, social anxiety disorder, posttraumatic stress disorder, and phobias), panic disorder is fairly common. Anxiety disorders affect more than 40 million adults in the United States alone, about 18% of the population. Worldwide, approximately 20% of persons who receive primary health care have anxiety disorders or depression.

Treatment may be different for each person. Medication is used for prevention and/or immediate alleviation of symptoms and is usually the main line of treatment.

In addition, psychotherapy such as cognitive-behavioral therapy, relaxation, and/or meditation are often used to help relax the body and relieve anxiety.

If you're in the middle of a panic attack, immediate relief of anxiety symptoms can come from taking a sedative type anti-anxiety medication such as Xanax, Klonopin, and Ativan. These drugs are provided at least in the beginning of medical therapy, but are not for long-term use. Certain antidepressants can help prevent anxiety and reduce the frequency and severity of panic attacks, but are not used for immediate relief during an attack. Frequently used antidepressants are the selective serotonin reuptake inhibitors (SSRIs) such as Prozac, Paxil, Celexa, Lexapro, and Zoloft. This group of medications is often considered the first line of treatment for panic disorders. Anticonvulsant drugs, such as Lyrica and Neurontin, have also begun to show value in research studies as experimental treatments for some anxiety disorders, including panic disorder.

During our study, Vagus Nerve Stimulation (VNS) for the Management of Epilepsi which covered 105 Drug Resistant Epilepsy (DRE) patients, we came across 4 persons suffering from panic attack alongside DRE (2). Patients were implanted with the tulgar neuroimplant system, that is semi-implantable and applying HBP – (H: hearth beat, B: breathing frequency, P: position, awake or sleep) mode of stimulation considering age, sex and metabolik rate of each patient. These patients, who were followed up for one year, all well-responded to VNS. The cases were as follows:

Case

Case 1: a 39 year old lady, DRE patient for 20 years. Free from panics within one week, after the activation of vagal implant (two weeks post implantation).

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Case 2: a 38 year old lady, DRE patient for 6 years. Free from panics within one four weeks, after the activation of vagal implant (two weeks post implantation).

Case 3: a 25 year old lady, DRE patient for 15 years. Free from panics within two weeks, after the activation of vagal implant (two weeks post implantation).

Case 4: a 36 year old man, DRE patient for 24 years. Free from panics within three weeks, after the activation of vagal implant (two weeks post implantation).

Conclusion

This is the first and only study undertaken so far related to VNS and Panic Disorder. The promising outcome reported here suggests resorting to extended similar studies with large number of patients.

Conflict of interest: The authors declare that there are no conflicts of interest

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