

Vagus Nerve Stimulation for the management of depression: Rationale, anatomical and physiological basis of efficacy and future prospects

Metin Tulgar¹, Erol Ozan^{2*}, Zafer Akan³

Dear Editor,

Treatment-resistant depression (TRD) is a major public health concern due to its high costs to society. One of the novel approaches for the treatment of depression is the Vagus Nerve Stimulation (VNS). Therapeutic brain stimulation through delivery of pulsed electrical impulses to the left cervical vagus nerve now has established safety and efficacy as an adjunct treatment for medication-resistant epilepsy (1).

Vagus nerve stimulation therapy is US FDA approved for the adjunctive treatment of epilepsy and has also been applied for the medication resistant depression (2-6). Owing to its novel route into the brain, it has no drug-drug interactions or systemic side effects. This treatment also appears to have high long term tolerability in patients, with low rates of patients relapsing on Vagus nerve stimulation or becoming tolerant.

However, alongside the excitement and enthusiasm for this new treatment, a lack of Class I evidence of efficacy in treatment depression is currently slowing down adoption by psychiatrists.

Much more research is needed regarding exactly how to refine and deliver the electrical pulses and how this differentially affects brain function in health and disease.

In this clinical study, 10 patients (7 women, 3 men) who have diagnosis of major depression, the ages of patients are between 31 and 44. After two years follow up, the patients' Hamilton depression scores have been improved significantly.

In the present literature, heavy cases are advised to be excluded (7). Very interestingly, in this study a 44 year old lady, who was repeatedly talking about suicide, soon after the activation of the vagal nerve implant rescued.

As to our first prelaminal report about Vagus nerve stimulators and management of depression indicate that, VNS treatment may be an alternative to treatment for major depression patients.

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¹Yuzuncu Yil University School of Medicine Dept. of Biophysics Van, Turkey

²Celal Bayar University School of Medicine Dept. of Psychiatry, Manisa, Turkey

³Celal Bayar University School of Medicine Dept. of Biophysics, Manisa, Turkey

*Corresponding Author: Erol Ozan E-mail: erolozan@gmail.com