

SPG Stimulation for Migraines

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Abstract— Chronic migraines are an ailment that effects about many Americans each and every day. Those who suffer from chronic migraines are seriously affected by their ailment. However, migraines are very misunderstood and there is no permanent treatment.

I. INTRODUCTION

Migraines are an ailment that effects about 18% of American women and 6% of American men. Even children are affected by migraines. Chronic migraines affect about 2% of the population and are defined by having at least 15 days per month with a migraine. Migraines are categorized as a syndrome where a collection of neurological symptoms produce intense throbbing on one or both sides of the head. They can last between 4 and 72 hours, and often come with nausea, vomiting, dizziness, sensitivity to sound, light and other external stimulants, as well as tingling and numbness in the extremities of face. Right now, migraines are still quite misunderstood and only have a handful of treatments. Most of which are not 100% effective. There is acute treatment, where drugs are taken as symptoms start to show, preventative treatment, where drugs are taken daily to stop migraines before they occur, and complementary treatment, that is drug-free but mostly focuses on relaxation techniques and stress-relief. There is a product in development, *The ATI Neurostimulator*, which could eliminate migraines completely for those that suffer from them.

II. METHODS

The *Autonomic Technologies* company has been developing a form of treatment for migraine headaches in the form of *The ATI Neurostimulator* (seen below). The stimulator itself is

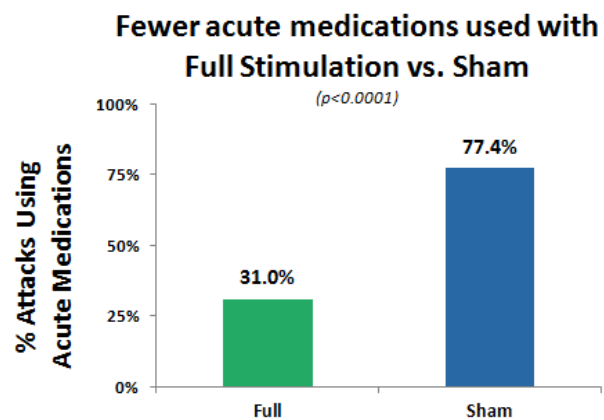


implanted in the upper gum area, just below the cheek bone. It is connected to the sphenopalatine ganglion (SPG) nerve bundle, where a connection to severe pain relief has already been proved. The other component involves a handheld component that is extremely easy to use. The patient simply

raises this device to their face, where the chip has been placed. The chip will send electrostimulation to the SPG, until the pain has subsided. The patient then switches off the handheld device, and is allowed to continue with their day.

III. RESULTS

The ATI Neurotransmitter has been through extensive clinical trials, most of which are very impressive. Many different sets of data were collected, including frequency of cluster migraine attacks, amount of time it takes to stop the attack, quality of life improvement, and need to take acute treatment. In most cases, the ATI outperformed the acute treatment by a lot. For example, in one study, the need to take acute medication dropped from 77.4% to 31%, an impressive 46.4 decrease.



IV. DISCUSSION

The ATI Neurostimulator seems to be a very viable option for Patients who suffer from chronic migraines and tension headaches. The chip itself is relatively easy to implant and leaves no scars because it is an oral procedure. Also, with some of the statistics produced by the trial, it seems that this product is incredibly effective and could be applied in many ways in the future to deal with any type of chronic pain.

REFERENCES

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