



TECHNOLOGY

Zona Incerta Stimulation for Chronic Pain Relief

OVERVIEW

Central pain syndrome (CPS) is a debilitating condition affecting with lesions or dysfunction in the central nervous system. CPS is a neurological disorder resulting from damage to or dysfunction of the pain-conducting pathways of the central nervous system. The patented invention describes a novel method for treating CPS regions of the brain comprising the zona incerta (ZI).

The invention describes a method of controlling pain in CPS patients that involves the implantation of electrodes in the sub-thalamic nucleus zona incerta. A patient-controlled stimulator using radio-frequency waves is used to stimulate the ZI. The researchers have shown that one of the causal pathological events leading to CPS is abnormally suppressed activity of the inhibitory ZI. The ZI is responsible for regulating the activity of thalamic nuclei that process pain information. The stimulation of the ZI results in immediate and complete amelioration of pain sensations.

APPLICATIONS

CPS is a common condition exhibited by patients suffering spinal cord injuries, multiple sclerosis (MS), epilepsy, Parkinson's disease, and cerebrovascular lesions (stroke). It is estimated that as much as 95% of spinal cord injury patients, 30% of MS patients, and approximately 10% of stroke patients will suffer from CPS. In the U.S. alone, it is estimated that nearly four million people will suffer from neuropathic pain. Treatment of CPS includes the use of pain medications, tricyclic antidepressants, and anticonvulsants. Complete relief of pain is often not possible.

ADVANTAGES

Alleviate chronic pain without use of pharmaceutical treatments

STAGE OF DEVELOPMENT

The efficacy of the technology to control CPS has been demonstrated in appropriate animal models.

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LICENSING POTENTIAL

Available for licensing

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Additional Information

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PATENT STATUS

U.S. Patent 8,396,558

LICENSE STATUS

Available for exclusive license

CATEGORIES

- Devices
- Methods of Treatment

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ATTACHMENTS

-  [Download AK-2009-044 Marketing Summary_09_2019.pdf](#)

EXTERNAL RESOURCES

- [Zona incerta: a role in central pain](#)

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