MEDICAL DEVICE TECHNOLOGY ALERT

A COMPUTERIZED NEURO-BRAIN MONITORING DEVICE

According to the American Academy of Neurology (AAN), Parkinson's disease (PD) affects up to 1.5 million Americans. This represents more people than those affected with multiple sclerosis and muscular dystrophy combined. Although 15% of the patients are diagnosed before the age of 50, PD is normally considered a disease, which affects older adults. PD afflicts one of every 100 persons over the age of 60. While there is as yet no cure for this condition, early detection and progressive treatments allow many patients to maintain a high level of function throughout their lifetimes. Every 53 seconds someone has a stroke. One in every four households has a migraine sufferer. Epilepsy and seizures affect 2.3 million Americans.

The clinical applications of the electro-encephalo-graph (EEG) are quite diversified. It is used for monitoring PD, Alzheimer's disease, stroke, epilepsy, syncope, migraine, sleep investigations, psychogenic seizures, transient ischemia of the brain, drug efficacy, monitoring brain activity during anesthesia in operating theatres and monitoring brain activity in intensive care units and cardiac care units.

IMEXCO General Ltd., based in Israel, has developed a computerized neuro-brain monitor--the Neuritor for the acquisition and analysis of multiple EEG channels and electro-cardio-graph (ECG) signals in real time. The device can produce standard EEG and ECG readouts on a printer and may operate as a paperless EEG/ECG when connected to a computer. The Neuritor is portable, compact and lightweight. As the Neuritor's software mechanizes the analysis of the data and represents it in the form of precise reports, the technicians working with the machine are not required to be skilled in EEG analysis.

The Neuritor

Picture Credit: Dr. Giora Ram, President, IMEXCO General Ltd.

There are two versions of this product: the hospital mode (Neuritor-ST) and the ambulatory mode (Neuritor-EX). EEG monitoring in hospital is implemented mainly for screening and for limited periods of time, usually for 30 minutes. There are two possibilities to use the system in this mode: Online real time, while the system is connected to the printer and/or computer. Or offline real time, and the data for full 30 minutes is saved for subsequent printout and analysis. This mode enables the monitoring of patients at their bedside. Monitoring in ambulatory mode is used for classification and quantification of EEG and other physiological events. It may assist in differential diagnosis of events particularly for outpatients. Long-term ambulatory monitoring also enables efficacy evaluation of new and existing drugs, drug titration and sleep studies.

The following examples show how the Neuritor may reduce diagnostic and treatment costs, thereby increasing the institutions net revenues: 1) Operating cost of the Neuritor is significantly lower than for any other EEG monitoring system on the market. 2) Most importantly, the initial investment required to purchase the Neuritor is much less than for any other EEG monitor, computerized or ambulatory available today. 3) The Neuritor requires virtually no maintenance, because it has no moving

parts. 4) The versatility of the Neuritor may greatly increase the number of patients, who can be examined per day. 5) Use of the ambulatory feature of the Neuritor may permit earlier discharge of the patient from the hospital while providing effective monitoring on an outpatient basis.

Giora Ram, president, tells about the other potential applications of the proprietary technology developed by the company, "The Neuro-CPD is another application of our core technology for the detection and verification of chronic pain. We believe that it will revolutionize pain diagnosis and treatment practices. This product may assist locating the exact muscle or muscles that generate pain. This may eliminate unnecessary surgeries and other medical treatments, which can save over $25 billion per year in the US alone." The Neuritor is one of the major component of the Neuro-CPD, which is built using multichannel physiological signal processing algorithm in real time to operate also under ambulatory conditions. It may also be used for monitoring pain-related drug efficacy and can serve as an indispensable tool for pharmaceutical companies and save insurance companies on unjustified insurance claims.

The Neuritor is FDA approved to market it as an EEG device. Currently, the company is seeking additional capital and partners to exploit those technologies and bring the related products to the market.

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