9 September, 2011

Results of study of BAR System at Swinburne University

Cortical Dynamics Ltd ("**Cortica**l"), an investee company of BPH Energy Limited (ASX: BPH), is pleased to announce the results of a recently completed study of the major components of the Brain Anaesthesia Response (BAR) monitoring system. The aim of the study was to verify the performance of the BAR system by evaluating the performance of all the signal gathering and analysing components. The study replicated and extended well known results regarding the effect of the hypnotic agent benzodiazepine alprazolam on brain electrical activity, lectroencephalogram (EEG), in healthy subjects. This study was not designed to gain regulatory approval.

Study

Ten healthy participants between the ages of 18 and 40 ingested a single 1mg oral dose of alprazolam after a baseline EEG recording was taken. The EEG was recorded and analysed by employing two of the three components of the complete BAR system, the Data Acquisition Module (DAM) which amplifies and analyses the EEG and, Cortical's adhesive scalp electrodes. The participant's EEG was subsequently recorded every hour for a period of three hours.

Study Conclusion

The study demonstrated that the major components of the BAR system were capable of robustly replicating the well known pharmaco-EEG phenomena of benzodiazepine agents, the enzodiazepine-induced "beta buzz". The replication of this well documented phenomenon indicates that the BAR's hardware and software components are functioning correctly.

Additionally this study concluded that the physiologically inspired approach of the BAR monitoring system, which is it's differentiating feature, was as anticipated capable of detecting the effects of the well known hypnotic agent alprazolam.

Cortical plans to further evaluate the CS and CI indices using the complete BAR monitoring system in a range of upcoming clinical trials. This study provides the necessary verification of the major components of the BAR system for it to be used in planned clinical studies.

About the BAR Monitor

The BAR monitoring system measures a patient's brain electrical activity, the electroencephalogram (EEG), in order to indicate how deeply anaesthetised a patient is during an operation via an adhesive sensor applied to the forehead. The BAR monitor is designed to assist

Cortical Dynamics Ltd
ACN 107 557 620
PO box 317, North Perth, WA, 6906
14 View Street, North Perth, Western Australia
T: +61 8 6467 9525 F: +61 8 9328 8733
contact@corticaldynamics.com www.corticaldynamics.com

anaesthetists and intensive care staff in ensuring patients do not wake up un-expectedly, as well as reducing the incidence of side effects associated with the anaesthetic.

The BAR monitor improves on currently used EEG monitors by utilising advances in understanding of how the brain's electrical activity is produced, and how it is affected by anaesthetic and sedative drugs. The BAR's unique physiological approach is aimed at independently monitoring the hypnotic and analgesic states associated with anaesthesia, a feature no known existing EEG based depth-of-anaesthesia monitor is able to achieve. Objectively monitoring of hypnotic and analgesic state will lead to improved anaesthetic and surgical outcomes, by reducing times and minimising drug costs.

About Cortical Dynamics

Cortical Dynamics is a medical technology company that was established in 2004 to commercialise intellectual property relating to brain function monitoring developed by Associate Professor David Liley and his scientific team at Melbourne's Swinburne University of Technology.

Cortical Dynamics Ltd
ACN 107 557 620
PO box 317, North Perth, WA, 6906
14 View Street, North Perth, Western Australia
T: +61 8 6467 9525 F: +61 8 9328 8733
contact@corticaldynamics.com www.corticaldynamics.com