NEW USCOM STUDY PUBLISHED IN SURGERY JOURNAL

Tuesday, October 4, 2005: USCOM Limited (ASX Code: UCM) announced today the publication of significant new research in one of the world's most prestigious medical journals.

The new study, comparing the noninvasive USCOM cardiac output monitor with the current invasive method among heart surgery patients, was published this week in the US-based Annals of Thoracic Surgery.

The study, conducted among 36 open heart surgery patients, proved the accuracy and reliability of the USCOM system in measuring Cardiac Output (CO) non-invasively, without the risk of invasive catheters.

In the case of 6 patients, measurements were taken with the USCOM transducer placed directly on the pulmonary artery during open heart surgery. The CO measurements were identical to those measured by the Pulmonary Artery Catheter (PAC) method.

The study concluded, *"Using the USCOM system it is feasible to determine beat-to-beat CO in critically ill patients in the cardiac intensive care unit, non-invasively. These measurements demonstrate a high correlation to invasively determined CO, CVS percentage, and SV by a Swan-Ganz PAC, without the possible complications associated with invasive right heart catheterization. The device provides instantaneous results and is portable, with applications in the intensive care unit, emergency department, and operating room preoperatively and perioperatively."*

In an invited commentary to the paper by 2 senior clinicians from the Cleveland Clinic Foundation, it was stated, *"This study does suggest the potential value of this innovative technology to assist in the perioperative management of the cardiac surgery patient."*

The paper, titled *"Non-Invasivre Cardiac Output Determination by Two-Dimensional Independent Doppler During and After Cardiac Surgery"* was authored by Dr Karsten Knobloch from the Department of Trauma Surgery at the Hannover University Medical School, in Hannover Germany.

Dr Knobloch stated, *"These findings confirm the reliability of the USCOM device and suggest that it may have multiple clinical applications in which the immediate and non-invasive assessment of CO is important. Clinical adoption of this method may reduce the need for invasive procedures such as PAC and left ventricular angiography, and may improve care by providing hemodynamic data on patients not suitable for invasive monitoring."*

"Applications for this novel device may include the intensive care unit as well as intermediate or regular care units to immediately assess the hemodynamic status of a critically ill, unstable patient. Furthermore, the USCOM system may be of special value in the operating room preoperatively, perioperatively and postoperatively in the hands of anaesthesiologists in which hemodynamic management may be critical. Additional use may be applicable in the transplantation ambulance to assess transthoracic CO non-invasively, allowing early hemodynamic optimization."

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"Non-invasive Doppler determination of CO using the USCOM device is easy to achieve by both medical and nursing staff, and it provides real-time assessment of CO."

"Results correlate highly with invasive methods of CO determination, as this study demonstrates. In addition, the USCOM system is lightweight and portable, so it can be used in serial hemodynamic determinations in the emergency department, the intensive care unit, and even in the operating room prior to and during procedures. As a non-invasive method that does not require calibration, additional measurements for optimizing hemodynamic interventions can be acquired at no patient risk cost. These repeated measurements also result in significant improvements in measurement sensitivity."

"The USCOM device can measure hemodynamics from both the right and left heart, and a number of acoustic accesses, allowing for versatility in the surgical environment where access may be restricted by dressings and leads. The device is simple to understand and operate, so reliable results should be attainable in general clinical practice, and these may improve with increased use, such as with other ultrasound modalities."

About USCOM:

The USCOM monitor is a custom-designed patient management tool for the optimisation of hemodynamics.

Using the proven science of CW Doppler Ultrasound and validated algorithms, USCOM provides real-time beat-to-beat information across 10 parameters of cardiac function, including Cardiac Output (CO), Cardiac Index (CI), Heart Rate (HR), Stroke Volume (SV) and Systemic Vascular Resistance (SVR). The validated USCOM method is completely non-invasive and accurately measures flow for both right and left heart, providing therapeutic guidance for pre-load, contractility and afterload.

The device is ideally suited to the Emergency Care setting. The operator can assess cardiac flow within seconds of start-up. And with USCOM's advanced serial measurement capabilities, clinicians can accurately quantify the impact of therapy. USCOM has an especially important role in fluids management, allowing the clinician to assess, in real-time, the changes in cardiac output as fluids are applied. This puts USCOM in a potentially pivotal role in the implementation of Early Goal Directed Therapy (EGDT), a new approach to Emergency Care, providing improved outcomes and reduced costs through the early optimisation of cardiovascular hemodynamics.

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