

New Cryoablation Device Targets Enhanced Treatment of Cardiac Arrhythmias

In vitro study details the increased performance and potential of CPSI's Supercritical Nitrogen cryoablation device for the epicardial based ablation of cardiac tissue

March 19, 2018

OWEGO, NY - CPSI Biotech announced today the publication of a peer-reviewed article detailing the enhanced performance CPSI's next generation supercritical nitrogen (SCN) cryoablation device and its potential application in the treatment of cardiac arrhythmias. The study, titled *Evaluation of a New Epicardial Cryoablation System for the Treatment of Cardiac Tachyarrhythmias*, published as an open access article in the journal *Trends in Medicine*, was a multi-institutional collaboration between researchers from CPSI and Binghamton University.

The article details developments in CPSI's cardiac cryoablation technology platform. The study investigated the performance of the patented Supercritical Nitrogen (SCN) cryoablation system and epicardial cryoablation probe developed by CPSI. The studies, conducted using a series of heat loaded engineering and tissue models, demonstrated the ability of the system to quickly and effectively deliver an ablative dose. Commenting on the study, Dr. John M. Baust (CPSI President and Lead Scientist) stated "We have been working on a series of a next generation cryoablation devices and probes for targeting various cardiac arrhythmias for a number of years. These activities have resulted in the development of a platform of new ablation probes and catheters, the *ICEolate* platform, designed to support ablation of cardiac tissue using either a epicardial or endocardial approach. This specific study focused on evaluations of the epicardial cryoprobe technology. The results demonstrate that the SCN system is able to generate ablative power several fold greater than today's commercial cryoablation systems and as such deliver a ablative dose in less than one minute in many cases."

In addition to developing advanced cryoablative devices, another focus at CPSI is to identify the minimal lethal temperature necessary to effectively ablate various cells and tissues. Previous studies by CPSI scientists, as well as others, identified -30°C as the minimal critical temperature for cardiac tissue. These studies were led by Dr. Kristi Snyder (Director of Operations an Principal Scientist) who commented "once we were able to identify -30°C as the minimal target temperature we were able to use this information to guide the development of new devices designed to hit this target as quickly as possible throughout the targeted tissue. Reaching this temperature throughout the full thickness of the target tissue is very important; -30°C is not what needs to be achieved at the probe surface, but must be attained across the entire cardiac wall to achieve conduction block. The faster and more precisely this can be achieved on the opposite surface of the heart, the greater the potential for procedural success. The data in this study demonstrated that the SCN *ICEolate* epicardial cryoprobe were able to deliver temperatures of -30°C in a circulating heat loaded *ex vivo* cardiac tissue model in ~30 seconds and achieved a nadir temperature of <-50°C during a 3-minute freeze protocol."

This study was conducted as part of CPSI's ongoing research and technology development program which involves the development of a next generation cryoablation devices and approaches for the treatment of various disease states. Ongoing efforts continue to build upon this success and are focusing on continued development, optimization and testing of these new devices. Speaking to the broader device development program at CPSI, Baust added "while this study focused on our prototype epicardial cardiac

probe, we are also actively developing linear and balloon tipped catheter technologies as part of the *ICEolate* platform to support endocardial based procedures. The power of the patented cryoablation engines that CPSI's engineers have developed has opened a number of doors for advanced treatment for various diseases. We are excited to take the next steps with this technology." With development underway, CPSI is poised to embark down the commercialization path. To this end, Baust commented "We are actively seeking investors and partners through a variety of mechanisms to join our team to bring this potentially lifesaving technology platform to the market."

The open access article, initially published online February 2, 2018 is timely and can accesses free of charge via the Trends in Medicine website at <http://www.oatext.com/evaluation-of-a-new-epicardial-cryoablation-system-for-the-treatment-of-cardiac-tachyarrhythmias.php>

More information on the CPSI's cryoablation technology platform or any of CPSI's other technologies can be found on CPSI's website at www.CPSIBiotech.com.

About CPSI Biotech - CPSI Biotech, a private, integrative bio/medtech greenhouse company, develops and designs life science research products and cryo-medical devices for applications in cancer, cardiovascular disease treatments and cell therapy bioprocessing. Ongoing R&D and business development activities continue to produce innovative technologies, devices and intellectual property for commercialization, licensing or sales in support of diverse clinical and research applications. By leveraging the innovation, flexibility and R&D strengths of CPSI in combination with the development, commercialization, manufacturing and clinical expertise of partnering organizations, rapid and efficient product development is attainable.

Disclosure Notice: The information contained in this release is as of March 19, 2018. CPSI assumes no obligation to update forward-looking statements contained in this release as the result of new information or future events or developments. CPSI's technologies do not have regulatory clearance for commercial sale and are currently intended for "Research Use Only".

With the exception of the historical information contained in this release, this release contains materials and statements related to future business, financial performance, future events and/or developments involving CPSI which constitute forward-looking statements. The matters described herein contain forward-looking statements that involve risk and uncertainties that may individually or mutually impact the matters herein described, including but not limited to, CPSI's ability to develop and market new products, to retain and attract key employees, to obtain regulatory clearances and approvals for its products, to effectively react to other risks and uncertainties, such as fluctuation of quarterly financial results, contract and grants acquisition, reliance on third party manufacturers and suppliers, litigation or other proceedings, economic, competitive, governmental impacts, whether pending patents will be granted or defendable, validity of intellectual property and patents, the ability to license patents, the ability to commercialize developmental products, competition from existing and new products and procedures and CPSI's ability to raise the capital that is required to accomplish the foregoing.

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