



"In³ Europe: A Preview of Early-Stage Medtech Companies"

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Biosan Medical is developing a novel device and method for treating the *deadliest* type of stroke

by Ronald C. Trahan

BIOSAN MEDICAL LTD. is developing the *VentriTek105[®] System* to treat **subarachnoid hemorrhage (SAH)**, a catastrophic neurological event that affects 30,000 persons in the U.S. annually. Approximately 50% of those affected by hemorrhagic strokes die within 30 days of the initial event (median age of death due to SAH is 59 years)—among survivors, about half suffer permanent disability. SAH occurs when bleeding from a damaged vessel causes blood to accumulate between the brain and the skull in the *subarachnoid* space, where it mixes with the cerebrospinal fluid (CSF) that cushions the brain—consequently blocking CSF circulation, leading to CSF build-up and increasing intracranial pressure on the brain. The open spaces in the brain (ventricles) may enlarge, resulting in a condition called *hydrocephalus*.



Ofer Taran
CEO and Co-Founder,
Biosan Medical Ltd.

"The large accumulation of blood surrounding the different brain surfaces, including basal CSF cisterns, interferes with brain function," explains Dr. David Michaeli, a prominent brain researcher and co-founder of Biosan Medical. "Leaked blood can produce *vasospasm*—in which vessels narrow, impeding the flow of blood to the brain." Vasospasm is caused by breakdown products of blood surrounding the brain arteries. This process begins about three days after the bleed and reaches its peak at one week. The only widely accepted forms of therapy are manipulations of blood pressure and volume, and treatment with the vasodilating drug, *nimodipine*.



David Michaeli, MD, PhD, Co-Founder, CTO,
Biosan Medical; and,
Neurosurgeon, Rabin
Medical Ctr. (Israel);
pioneered endovascular
therapy for treating
intracranial aneurysm

"The beneficial effects of these treatments are relatively minor," adds Prof. Z. H. Rappaport, M.D., Director of Neurosurgery at the Univ. of Tel-Aviv School of Medicine. "While this protocol decreases intracranial pressure and also removes the CSF mixed with blood, it has a great disadvantage as it requires three or four weeks to clean the CSF from blood, and the patient is exposed to severe suffering." It is further important to remember that, in the process of fragmentation of red blood cells, *Erythrocytes* occur. These products of red blood cells' fragmentation act as poison to the body. It is critical therefore to speed up the 'cleaning' process. Until now, though, purification of the CSF from blood can take up to four weeks and, in cases of a massive SAH, it can last up to two months.

Biosan Medical's *VentriTek 105[®] System* speeds-up the purification process by shortening the time required for the ventricular drainage procedure. The Biosan system utilizes a method and apparatus whereby brain output fluid (CSF mixed with blood) is connected to the *VentriTek105[®] System*, which separates the red blood cells and fragmentation products from the CSF. An electronically controlled and precisely measured quantity of purified CSF is then returned back to the patient's ventricles or into the spinal and cerebral subarachnoid space. Unlike the current medical CSF drainage process, the Biosan *VentriTek105[®]* purification of CSF is achieved with a fully controlled and carefully monitored system—providing quick purification of CSF from blood by shortening the time required for the ventricular drainage process, thus preventing Cerebral Vascular Spasm by breakdown products, while minimizing the risk of development of post-SAH hydrocephalus. Biosan believes that its method and device prevent complications of SAH resulting in a shorter patient recovery time, less suffering and dramatic decrease of medical costs.

"The Biosan (device) makes scientific sense," concludes Prof. Rappaport of the University of Tel Aviv School of Medicine. "If we could remove the blood cells and their breakdown products from the cerebrospinal fluid surrounding the brain early on after the subarachnoid hemorrhage, the incidence of vasospasm should be significantly reduced."

"We are very much looking forward to presenting at Medtech Insight's encore In³ meeting in Brussels. Medtech Insight's conferences are always well-attended by successful investors—corporate investors as well as VCs and investment bankers. We expect to meet many of them at our breakout session after our presentation at the Brussels conference," says Ofer Taran, a co-founder and Chief Executive Officer of Biosan Medical. ■

What leading investors are saying about Medtech Insight's In³ events:



"I attended last year's inaugural In3 Europe event, and I'm planning on being there again this year. It was a great place to network: there were many many senior-level decision-makers—and not only from the investment community, but also from major medtech, biotech and other companies."

Graham Lay
Investment Advisor
Earlybird Ventures, Hamburg



"I participated in last year's Medtech Insight In3 meeting, and I'm very pleased that this event will be staged again in Brussels this year. Europe needs this sort of critical mass of emerging companies intersecting with serious investors. Indeed, I hope this event continues for a long time to come."

Stefan Winberg
Investment Director
Karolinska Investment Fund, Stockholm



"Last year, I attended the In3 Europe conference. I was curious to see if it would turn out as advertised: 'an advanced forum for presentation by, and interaction with, innovative companies and industry decision-makers driving the development of advanced medical technologies'... It was."

Joey Mason, MD
General Partner
Delta Partners, Dublin

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Medtech Insight's In³ conferences have drawn a total of more than 5,850 senior execs from the investment community and major medtech companies, and have featured more than 650 innovative early-stage presenting companies. In³ Europe will feature a new group of over 50 early-stage medical technology companies from around the world seeking partnering and/or investment.

To register for this conference, please call 949-219-0150 or 888-290-2225 (toll-free in the U.S.), send an email to in3@medtechinsight.com, or register online at www.medtechinsight.com.