

ACCELERATED THROMBOLYSIS WITH THE USE OF NEW ULTRASOUND ENHANCED DRUG DELIVERY CATHETERS

Incorporating high-frequency, low-power ultrasound into a catheter provides more effective delivery of thrombolytic agents into a clot. The technology, developed by EKOS[®] Corporation, combines miniaturized ultrasound transducers with peripheral catheter technology.

Unique Technology Improves Drug Delivery



The **Lysus[®] Peripheral** system consists of a multi-side port drug infusion catheter with treatment zones up to 50 cm with a matched ultrasound core wire.

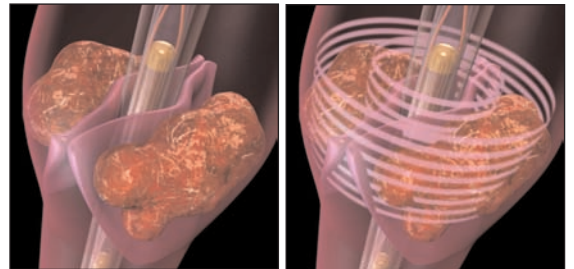
The wire incorporates miniature ultrasound transducers spaced evenly along the infusion area that deliver high-frequency, low-power ultrasound. The ultrasound loosens and separates the fibrin in the clot temporarily, which increases the availability of more plasminogen activator receptor sites. The thrombolytic agents penetrate deeply into the clot, thus accelerating thrombolysis and dissolving the clot.



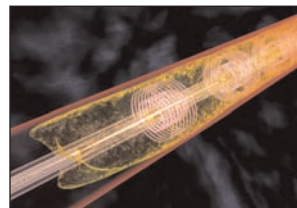
The **Micro-Infusion Catheter** is an end-hole catheter that also utilizes ultrasound technology incorporated into the catheter's distal tip. This system is useful for administering contrast material into the brain and delivering other fluids,

including thrombolytics, into the peripheral vasculature.

Sanjiv Parikh, MD, Endovascular Director, Swedish Health System (Seattle, WA), has been using the ultrasound catheters since September, 2004. "We've been very pleased with the clearance of clot we get," said Dr. Parikh. "In most cases we have found that it tends to work much better than standard infusion catheters.



"One advantage for treating DVT is that it has the ability to clear clot behind the valves. That's one of the limitations with standard catheters; it's hard to get good clearance of clot behind the valves," Dr. Parikh noted. "The goal of treating veins is to try and preserve valve function, to avoid the long-term sequelae of post-thrombotic syndrome, chronically swollen legs, and pain. I think it's going to be a very, very promising tool for treatment of DVT and also long-segment and short-segment arterial thrombosis."



Rod Raabe, MD, Director of Radiology at the Sacred Heart Medical Center (Spokane, WA), added, "We think the

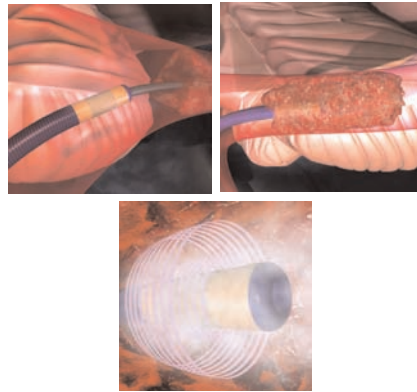
ultrasound catheters do a much better job than any of the traditional catheters available now for non-mechanical thrombolysis. This catheter is so easy to use, it's like using any traditional catheter.”

Amir Motarjeme, MD, Director of Midwest Vascular Institute of Illinois, said, “This catheter expedites the course of treatment. We soon realized that we can accomplish what we usually do in at least half the time that we spent with the conventional catheters.

“There is a monitor on the device that shows a power graph that indicates when flow has been established. Using that, we can instruct the nursing staff to stop the lytic agent or reduce it. This device will help us to decrease the total amount of a lytic agent given and terminate the treatment a lot sooner, thereby cutting the cost and reducing bleeding complication rate. These are two very important advantages of this device.

Stroke Study Shows Promising Results for Ultrasound-Assisted Drug Delivery

Investigators evaluated the safety and effectiveness of EKOS unique Micro-Infusion Catheter in the Interventional Management of Stroke II (IMS II) trial. The investigators



used the EKOS ultrasound catheters to deliver the ultrasound and Activase® to the clot in 30 (41%) of the 73 patients in the trial. The ultrasound catheters resulted in a higher rate of reopening the blocked brain arteries (69%) as compared with the IMS I study (55.6%), which did not use the ultrasound catheters. In addition, the likelihood of IV-IA treated patients being independent 3 months following the stroke was 1.65 times greater than for patients who received only the IV treatment (mortality rates were 16% in both studies). Based on the promising results of the IMS II trial, the National Institutes of Health will sponsor a 40-center randomized trial beginning in 2006 to evaluate further the combined IV and IA approach to treating ischemic stroke.

EKOS Corporation was founded in 1995 with the vision that ultrasound could accelerate the

delivery of drugs to benefit patients with a variety of diseases and conditions. Today, EKOS is the world leader in providing ultrasound-assisted fluid infusion catheters for diagnosis and therapy. Educational videos can be viewed at: www.ekoscorp.com.

EKOS products include:

- The **EKOS® Lysus® Peripheral Infusion System**, which has been demonstrated clinically to restore blood flow more quickly than traditional catheters in the periphery for the treatment of patients with peripheral arterial occlusions (PAO) and deep vein thrombosis (DVT).
- The **EKOS® Micro-Infusion Catheter**, which is currently indicated for the administration of contrast media into the brain and the infusion of physician-prescribed fluids, including thrombolytic agents, into the peripheral vasculature. It is also being studied for the treatment of ischemic stroke in an NIH sponsored trial.



For more information on the EKOS drug delivery systems, write to EKOS Corporation, 22030 20th Ave SE, Suite 101, Bothell, WA 98021; call at 1-425-482-1108; fax at 1-425-482-1109; or visit the company Web site at www.ekoscorp.com.