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HELLO ‘WEARABLE KIDNEY,’ GOODBYE DIALYSIS MACHINE

Washington, DC (Monday, August 17, 2009) — Researchers are developing a Wearable Artificial Kidney for dialysis patients, reports an upcoming paper in the *Clinical Journal of the American Society of Nephrology* (CJASN). "Our vision of a technological breakthrough has materialized in the form of a Wearable Artificial Kidney, which provides continuous dialysis 24 hours a day, seven days a week," comments Victor Gura, MD (David Geffen School of Medicine at UCLA).

The device—essentially a miniaturized dialysis machine, worn as a belt—weighs about 10 pounds and is powered by two nine-volt batteries. Because patients don't need to be hooked up to a full-size dialysis machine, they are free to walk, work, or sleep while undergoing continuous, gentle dialysis that more closely approximates normal kidney function.

Such a device could lead to a "paradigm change" in the treatment of dialysis patients. Despite enduring long hours on dialysis every week—with major limitations in activities, diet, and other areas of life—dialysis patients face high rates of hospitalization and death. The U.S. dialysis population currently exceeds 400,000, with costs of over \$30 billion per year. "We believe that the Wearable Artificial Kidney will not only reduce the mortality and misery of dialysis patients, but will also result in significant reduction in the cost of providing viable health care," says Gura.

The Wearable Artificial Kidney is successful in preliminary tests, including two studies in dialysis patients. The new study provides important information on the technical details that made these promising results possible.

"However, the long-term effect of this technology on the well-being of dialysis patients must be demonstrated in much-needed clinical trials," adds Gura. "Although successful, this is but one additional step on a long road still ahead of us to bring about a much-needed change in the lives of this population."

Other authors were Alexandra S. Macy, Masoud Beizai, and Carlos Ezon (Xcorporeal, Inc); and Thomas A. Golper, MD (Vanderbilt University Medical Center). Dr. Gura receives a salary from Xcorporeal, Inc.

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Additionally, significant contributions to the development of this new device were made by Hans Dietrich Polaschegg, PhD, Andrew Davenport, MD, Claudio Ronco MD, Andre Kaplan, MD, and Eli Friedman, MD.

The study entitled, “Technical Breakthroughs in the Wearable Artificial Kidney (WAK),” will appear online at <http://cjasn.asnjournals.org/> on August 20, 2009, doi 10.2215/CJN.02790409.

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