New Zealand scientists develop wireless heart pump

September 16 2009

New Zealand scientists have developed the technology for a wireless heart pump they say could save thousands of lives and offer an alternative to heart transplants.

University of Auckland scientists said Wednesday their technology uses magnetic fields to transfer power to heart pumps through a person's skin rather than using wire cables, which often cause serious infections.

"We would very much like for it to be the preferred choice for patients to be able to choose this type of pump over a heart transplant, said David Budgett of the university's bioengineering institute.

The university has licenced the technology to US medical company MicroMed, which will integrate the wireless technology with its own heart pumps, Budgett told Radio New Zealand.

The technology uses a coil outside the patient's body, which can be placed in a pocket, and another inside the body near the collarbone to pick up the magnetic field and produce the power for the pump, the university said.

A battery inside the body can also store enough power to operate the pump for about an hour.

Heart pumps are used to keep patients alive while they await heart surgery but the wire cable which goes through their stomachs and chests

cause serious -- sometimes fatal -- infections in about 40 percent of patients.

The wires can also break and restrict a patient's movement.

Budgett said it was hoped the wireless pump could eventually replace transplants, which involve traumatic surgery and require large amounts of drugs to avoid rejection.

He added about a million people died of heart failure worldwide each year while there were only about 3,000 heart transplants carried out.

Simon Malpas, the chief executive of TETCor, the university company set up to market the technology, said it was hoped to start patient trials within two years.

"These wireless heart pumps could be implanted in about 50,000 people each year around the world within 10 years," Malpas said.

"It's probably the most extreme implantable medical device you can get. If these pumps stop, you only have about one minute to live."

Previous attempts at making wireless heart pumps produced too much heat and would have resulted in "cooking a person from the inside", Malpas said.

The new technology was able to deliver exactly the right amount of power, eliminating the heating problem, he said.