

Portable Finger-probe Device Measures Liver Function in Organ Donors



According to a UCLA study, a portable, finger-probe device can successfully measure liver function in brain dead adult organ donors. The study is published in the Journal of Surgical Research.

UCLA researchers worked with OneLegacy, a non-profit organ and tissue recovery organisation that serves the greater Los Angeles area. In a double blind study, the researchers measured liver function in 53 potential organ donors. The portable, finger-probe device declined eleven of the livers because of poor quality.

According to study first author Dr. Ali Zarrinpar, an assistant professor of surgery in the Division of Liver and Pancreas Transplantation, "This device is best single predictor of organ survival in our patients. Ultimately, what it does is gives us a quantitative measure of how good a liver is without having to visually inspect the organ. It gives us a measurement to talk about when we're thinking about whether to transplant an organ into a recipient."

This device could change the way livers are assessed because there are still no accurate and reliable function tests for livers. Currently, a donor's medical history is thoroughly assessed and a surgical team is dispatched to the donor's location to inspect and procure the organ. This generally costs thousands of dollars per procedure and only about 10 to 15 percent of the times the organ is deemed usable. In addition, organs from patients with a questionable history or borderline laboratory results are usually rejected. This device tests organ function in marginal donors as well thus increasing the potential number of organs that can be used for transplants.

Dr. Zarrinpar points out that demand for organs continues to increase and many patients die while on waiting lists. According to the American Liver Foundation, approximately 1500 people die every year waiting for a donated liver. There are about 17,000 adults and children that are medically approved for liver transplants and are still waiting for a donor. This device can be used in any hospital and can help increase the number of donor livers. It works like a pulse oximeter, and can be attached to the finger to measure oxygen in the blood. It measures the rate at which a dye, injected into the potential donor's bloodstream, is cleared by the liver.

The procedure is non-invasive, novel and rapid and can be successfully used to predict which livers can be used in transplant patients. It can also assist in the standardisation of graft evaluation and can increase liver graft utilisation and decrease travel risk and expenses.

Source: University of California, Los Angeles Health Sciences

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