



Sydney surgeons revolutionise cardiac transplants with ‘heart in a box’

Monday 2 May, 2016

Surgeons from St Vincent’s Hospital in Sydney have been refining a system known colloquially as the ‘heart in a box’ program, to increase the number of donor hearts potentially available for transplantation.

St Vincent’s is the only unit in Australia using the TransMedics Organ Care System, which uses ex-vivo perfusion to keep the heart ‘alive’. This involves oxygenated warm blood and medications being pumped through the donor heart after removal from the human body.

In some cases, hearts have been flown interstate between hospitals in the sterile box, with its blood pressure, pulse and vital signs monitored on a portable computer screen.

Cardiothoracic surgeon Dr Emily Granger is presenting her research today at the Royal Australasian College of Surgeons Annual Scientific Congress in Brisbane, and says 18 patients have now benefited from hearts retrieved using this technology.

“We have been researching and refining this system for more than 15 years now, and what is different about it, is that it allows hearts to be transplanted from donors we previously would have rejected,” Dr Granger says.

“We quickly transfer the deceased patient to the operating theatre, place the stopped donor heart onto the organ care system, connect up the tubes and run the warm blood.

“Our research shows that if perfusion starts within 30 minutes then the stopped donor heart has a great chance of beating again. Hearts recover very quickly in the right conditions.

“In the past we’ve literally had to whip retrieved donor hearts from one hospital to the next. It’s a race against the clock to preserve the cold donor heart stored in an esky full of ice.

“Now we can minimise damage to the heart by keeping it warm and functioning on the Transmedics OCS. We can transport it from hospitals up to seven hours away.

“There are around 80 heart transplants performed each year in Australia, and 25-30 of these are in NSW. The average wait time for a heart transplant is 150 days, so it’s a real breakthrough to pioneer a system that allows us to salvage and optimise donor hearts.

Dr Granger believes these types of operations are a tribute to team work, communication and organisation in the operating theatre.

“Everybody in the theatre has a critical role in the retrieval process, and so far results with the Transmedics OCS have been exceptional. It has increased our heart transplant rate by 20 per cent.

“The fact that we can travel to virtually any hospital in Australia and perform this operation successfully reflects upon the wonderful training and dedication of all staff involved.

“There is nothing more amazing than sitting next to a beating heart in a box on an airplane, knowing that a surgical team and patient are getting ready to receive this wonderful gift.”

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