SA first to do HIV kidney transplants

Cape Town doctor Elmi Muller and her team have pioneered a technique to transplant kidneys between HIV-positive donors and recipients.

Cape Town doctor Elmi Muller and her team have pioneered a technique to transplant kidneys between HIV-positive donors and recipients.

Muller, a surgeon at the University of Cape Town's (UCT) Department of Surgery in the Faculty of Health Sciences, performed the first such kidney transplant in September 2008 at the world-famous Groote Schuur hospital, where she is permanently based.

In the 1960s Groote Schuur was the setting for the first human heart transplant, performed by UCT medical graduate, Dr Christiaan Barnard.

Between September and November 2008 the team performed four pioneering procedures, which are now described in the 17 June 2010 issue of the prestigious New England Journal of Medicine.

The team has performed nine procedures in total, a world first according to Muller, and has earned global attention and acclaim for its innovation.

"We've been discussing whether it makes sense to start doing this," said Dr Peter Stock of the Department of Surgery at the University of California, San Francisco. Stock was present at a National Institutes of Health meeting in the US in June, where Muller talked about her work.

Prof Bongani Mayosi, Groote Schuur's head of medicine, praised the achievement, saying that it was a testimony to the continuing capacity for innovative world-class work in the South African public health

sector.

Muller worked on the project in consultation with her colleagues Prof Marc Mendelson of the Division of Infectious Diseases; Prof Del Kahn, transplant specialist and UCT's head of surgery; and Dr Zunaid Barday of the Division of Nephrology.

Mendelson and Kahn co-authored the journal article, which is titled Renal transplantation between HIV-positive donors and recipients.

Giving hope to HIV-positive kidney patients
Kidney damage associated with HIV infection, wrote Muller in the journal article, is the leading cause of end-stage renal disease in HIV-positive South African patients. This refers to the fifth stage of chronic kidney disease and is the complete, or almost complete, failure of the kidneys to function. The condition can only be treated with dialysis or a transplant.

In the environment in which Muller practices, access to dialysis for HIV patients is limited and many who would ordinarily benefit from this treatment are sent home to die, because without it or a transplant, there is nothing more that can be done for them. An added complication is that HIV-positive patients are more prone to anaemia, so a transplant is the better option.

According to nephrologist June Fabian of the Witwatersrand University's medical school, state patients can expect to wait between four to six years for a new kidney, and when one does come along an HIV-negative patient would get preference.

Meanwhile, the availability of suitable deceased HIV-negative donors has decreased, while the frequency of HIV-positive brain-dead donors has increased.

Kidneys from HIV-negative donors can be safely transplanted into both infected and non-infected recipients, with roughly the same outcome in both cases. Transplanting a kidney from an HIV-positive donor into an HIV-positive recipient is a different matter, as the safety and effectiveness was previously not guaranteed.

Pioneering work
The four recipients all suffered from end-stage renal disease, were on anti-retroviral therapy, had a stable HIV infection and had no previous opportunistic infections except for one patient who had fully recovered from tuberculosis. This means that the immune systems of all four patients were relatively robust.

The patients had no access to dialysis and there was little chance of any of them receiving a transplant from an HIV-negative donor within the state system.

Neither of the two donors was on anti-retroviral therapy or had suffered from cancer or any serious opportunistic infection, and both had healthy kidneys.

After the transplant the recipients, three men and a woman, were said to have much improved kidney function, without further need for dialysis, and had not experienced any signs of rejection. This is significant because while HIV/Aids drug therapy boosts the immune system, anti-rejection drugs suppress it.

The four initial transplant patients have thrived, reported Muller in the article, and were still doing well a year after their operations, without any deterioration in their HIV infections.

Eight of the nine patients have done well, and a few of them have been able to return to work. The ninth

also improved, but later died from what seemed to be an unrelated cause.

Saving lives

Muller attributed the development of the new technique partly to her personal research interests, and partly to the desperate need for a new course of action for HIV-positive renal patients.

With an estimated 5.7-million people living with HIV, there is no shortage of kidney donors â€“ or patients with end-stage renal disease to receive the organs.

“We have the biggest HIV population in the world, and therefore we have a lot of HIV-positive donors," she said. "And we have a lot of HIV-positive patients with end-stage renal failure."

The technique has the potential to save hundreds of lives, which would otherwise be lost because of limited treatment options, using organs which would normally be discarded. In addition, the possibility of transplanting other vital organs such as livers and hearts cannot be discounted.

The team is aware of the danger of super-infecting the recipient with a more virulent HIV strain, thereby accelerating the progress of their condition. But because there is a lower prevalence of drug-resistant HIV than in the US, for example, the chances of passing these problematic strains from donor to recipient are reduced, and appropriate drug therapy should suppress any virus that may be carried over in the organ, wrote Muller.

Sourced by SA - The Good News via Mediaclub South Africa