

A new lease of life for kidney patients

Glimmer of hope with combination therapy :

by Ranga Chandrarathne

One of major obstacles in the transplantation of kidney is the natural mechanism in the human body which immediately rejects the transplanted host organ. The regime of drugs which would virtually stop the natural mechanism of rejection entail transplanted kidney susceptible to infection shortening the life of the transplanted kidney.

The growing body of evidence has proved that the life span of a transplanted kidney is shortening by the infections. The situation is further compounded as less than 10 % of kidney patients can afford to prolong their lives on dialysis and 1% can afford to find a donor and go for transplantation.

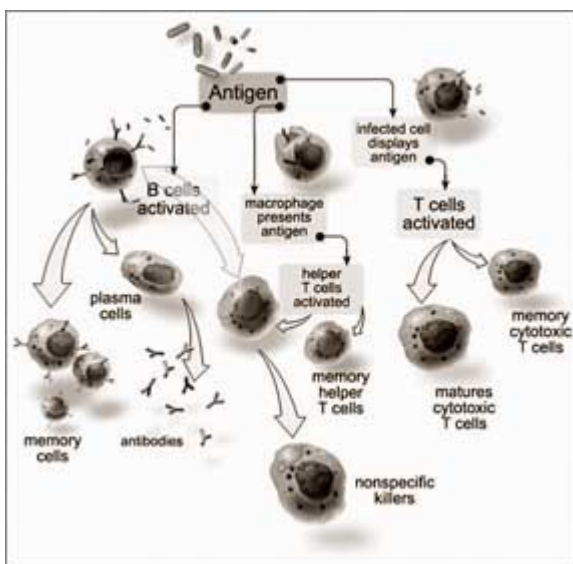
WHO has declared March 2 as World Kidney Day considering the enormity of the problem. Suddenly the incidents of kidney failure are shooting up and particularly in developing countries. India is going to be called the capital of diabetes.

Sri Lanka also has the same problem; diabetes, hyper tension and kidney failures. However, very few nephrologists are available in Sri Lanka, said Dr. P. Ravichandran referring to the current state of kidney failures in Sri Lanka

Owing to the condition known as chronic allograft nephropathy the life span of a transplanted kidney remains between five to ten years. Either the patient has to go back to dialysis or find a donor to go for transplantation.



Dr Palani Ravichandran



Lymphocytes, the most important of the immune cells are responsible for launching a seek-and-attack-mission on new kidney cells causing damage to the transplanted kidney. Drugs and infections also cause major damage and are the principle reason for the failure of a transplanted kidney.

"In the new technology, we start conditioning the body to suit the new kidney. There are four types of immune systems. One forms the anti-bodies while the other forms the segregated immunity. Under this system we only removed these anti-bodies and do not attack the system, so that still that parts have the immunity to attacks hostile bacteria and infections.

This immune condition system for the first time was introduced by us and we are now able to do transplant

on persons aged above 60 years and those who are not suitable for steroids," said Dr. Ravichandran on the new technology.

Dr Palani Ravichandran, MD DM and head of Nephrology and Transplantation KIOT, Barathi Raja Hospital T Nagar Chennai has developed a new novel technique in transplantation called combination therapy, which prevents rejection of a transplant kidney and also converts a high-risk patient to a low risk individual.

It has been found that few patients who live with their kidney beyond ten or more years develop what is called 'tolerance' and this was possible because the body had in them a new type of cell

called T regs or immune regulatory lymphocytes which work exactly opposite to that of destroying lymphocytes so these cells when their percentage is increased were effective in preventing the damage to the kidney cells and thereby could prolong the life of a transplanted kidney.

Research was directed to increase these cells and this was done by a combination therapy by use of different types of monoclonal injections that target specific immune cells so as not to disturb the regulatory cells.

Once the lymphocytes were depleted the already present antibody were also reduced by a new method called Double Filtration Plasmapheresis and Splenic radiation. To prevent infection as a result of low immunity, the patient was infused with donor's stem cells and these cells were allowed to grow post operatively in an environment in such a way that they turned into tolerant cells and also protected the new kidney cells from not only being destroyed but also to replace those cells which were also damaged.

This prolonged the life of the transplanted kidney by three ways, one by preventing rejection, two by not developing infection as drugs needs are very low and three drugs that damage the kidney need not be used namely cyclosporine and steroids.

The patients are monitored by the development of antibody in the blood periodically by a most advanced test called anti HLA antibody test for class I and class II antigens to make sure that the damaging lymphocytes do not come back.

The research work, which was presented in scientific forums conducted in World Transplant Congress Boston USA, Berlin Germany, and European transplant society congress at Switzerland. The research publication will be published in the prestigious journal International Immunopharmacology in the coming month.

Many centers have shown interest to learn more on this new technology which is very useful in poor patients especially who cannot afford to get costly medication postoperatively.

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