

Chronic Renal Insufficiency (May 20, 2009)

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Patient is a 56 year old male and UK citizen; he is presented with oliguria and edema for about 5 years. He was diagnosed with chronic renal insufficiency. Patient has a medical history of hypertension for more than 10 years.

Admission PE: Bp155/95mmHg, nephrotic face, patient has edema of his eyelids and lower limbs.

Laboratory Test of renal function:

BUN 15mmol/L, Cr 365umol/L, UA 650umol/L, Hb90g/L, Pro 2+.

Type-B ultrasonic indicated bilateral renal atrophy.

Admission Diagnosis:

1. Chronic Renal Failure (CRF)
2. Hypertension (3 degrees, extreme high risk)

Treatment Plan: (The treatment program is 5 weeks)

1. Active treatment for his primary affliction, control his blood pressure, prevent any complications.
2. Improve the patient's internal environment; activate his own stem cells, prepare the stem cells for implantation.
3. Four times Mesenchymal Stem Cells (MSCs) implantation, comprehensive medication to help the survival of these stem cells.
4. Treatment to help the stem cells express normal functions in the patient's body.

Treatment Results:

The edema has disappeared, the patient's anemia improved very much: Hb increased to 120g/L. Patient's renal functioning had obvious improvement: BUN 7.2 mmol/L, Cr 92 umol/L

We followed the patient for more than one year up to now, currently his condition is stable.

Case Analysis:

Chronic Renal Failure (CRF) is a kind of chronic progressive nonreversible damage to the renal parenchyma with a variety of causes. The main symptoms are uremic toxins retention, fluid and electrolyte imbalance, renal anemia and disturbance with calcium and phosphate metabolism, etc. Most patients have a medical history of different kinds of glomerulonephritis (GN), pyelonephritis, hypertension, diabetes and gout. When these kinds of renal diseases develop into renal failure, the traditional therapy is renal transplantation and dialysis. But dialysis can only partly substitute for the Glomerular Filtration function, and cannot replace the entire renal functioning such as secretion, metabolizing, and keeping the internal environment at homeostasis and so on. Also, there are so many possible complications following dialysis, adversely affecting the quality of life of the patient. Renal implantation can be a complete substitute for the whole renal function, but until now the suitable donor shortage is a serious limitation, and even after the implantation, the side effects of immunosuppressors and the complications of surgery have caused great difficulty for the development of renal implantation treatment.

Recently, with the development of stem cell research, doctors have started to focus on stem cell treatment for renal disease, and a series of clinical research projects have confirmed that it has great potential for clinical treatment. Mesenchymal cells have very strong plasticity, they can transdifferentiate into different kinds of tissue cells, and in the restoration of renal tissue injuries, have shown good prospects for their application. The mesenchymal cells can transdifferentiate into renal cells and play an important role in the self restoration and regeneration of nephrons, post renal disease.

We have treated more than 10 renal insufficiency patients with the mesenchymal cells implantation procedure; all of them had very good results. For this particular patient, he had CRF which related to his many years of hypertension, after the general regular medical treatment, doctors first improved the internal environment. After the four stem cells implantations, the patient's renal functioning had further recovery. The positive treatment results have been maintained for more than one year now, the clinical treatment gives good evidence that the stem cell treatment can alleviate his symptoms effectively and reverse part of his renal functioning successfully. We have complete confidence that with the continuous development of medical technology, our stem cell treatment can help more patients to live a better quality of life than what the end-stage therapy of renal transplantation and dialysis can offer.