

Evaluation of Therapeutic Effects of Autologous Bone Marrow Mesenchymal Stem Cells to Prevent the Progression of Chronic Nephropathy in Renal Transplant

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Background

Chronic allograft nephropathy(CAN) is one of the most common causes of chronic and end stage renal disease. It is defined with Mainly tubular atrophy and interstitial fibrosis and no evidence of any other etiology, or functional disorder that caused at least three months after transplantation .

Control of risk factors (HTN,DM,HLP, ...) and limiting usage of calcineurin inhibitors or replace all of them keep longer it and positive C4d nephropathy shiting to celecept or increase dose recommended . The use of mesenchymal stem cells has three thrapuitic purposes : first, the ability of these cells into the desired tissue , the induced effects on cell damage and third is regulation of immune system , which is totally new way to deal with the disease.

Materials and Method :

Using keywords , mesenchyma cells , renal transplantation, chronic failure Search in Google Scholar , impacts of information such as PUB MED, and magazines such KIDNEY INTERNATIONAL and research centers such as the Institute of Digestive Disease Research Center, Tehran University of embryos and one book and dissertations were used. within twelve source material has been collected and summarized. Member reconstruction methods (regeneration), which auto multipotential stem cell and tissue engineering werer used, significant results obtained. In animal models and human studies , these cells inhibit the proliferation and function of immune cells (T and B cells and NK) and adjust the function of dendritic cells and induction of regulatory T cell activity logs. Their immunomodulatory activities are through non- specific anti- proliferation activity of contact - dependent cell - cell or secreted factors such as IDO or indolamin oxidase 2 and 3 , prostaglandin E2, HLA-G, interferon, interleukin- B1

The combination of injected antibodies and stem cells transplantation was effective, the incidence of acute rejection in the first year, fewer opportunistic infections , and renal function was significantly better in the group of stem cells. The effect of autologous cell transplantation bone marrow stem cell on renal allograft significantly improved compared to that in all cases , the use of stem cell therapy approach is effective and without danger .

Transplantation of bone marrow -derived mesenchymal cells with Pioglitazone in patients with decompensated cirrhosis (clinical trial phase I). Reducing fibrosis , or prevention of fibrosis in animal studies has been shown to possess twice CD133 cell transplantation or bone marrow-derived mononuclear cells compared with a control group of patients with decompensated liver cirrhosis in human samples is ongoing .

Portal venous injection of stem cells into hepatic indices somewhat improved . Repeated cell transfusions in these patients may lead to lasting health effects .

No clinical studies done on the effects of these cells in transplant rejection and treatment of fibrosis.

Therapy with autologous mesenchymal stem cell for allograft rejection is safe (Safety), and available (Feasibility). Findings further benefit their immunosuppressive effects. Intravenous injection of mesenchymal stem cells can largely reduce the symptoms of graft rejection and graft survival. members can help . Transplantation of mesenchymal cells, also reduces memory fatal cells.

Results:

Nephropathy and chronic renal allograft rejection is a potential problem that they are facing almost 90 % of the recipient . The two groups of Patients have similar incidence of acute rejection and graft survive , fewer opportunistic infections in the first year , and was significantly better renal function in stem cells DGF in patients receiving stem cell significantly decreased than control group. early half of the patients in the control group had DGF which occurred in the first week and Cratinin was significantly lower in the first and second week in the case group.

Injections (one million cells per kilogram of patient weight) of autologous mesenchymal cells derived from bone marrow was done and biopsies showed, fibrosis and atrophy of the tubules according to protocol after the link (IF / TA) was approved . Studies showed that treatment with stem cells autologous transplant rejection in renal allografts is harmless (Safety), and available (Feasibility) , and findings for the benefit of their immunosuppressive effects .

Conclusions:

Several clinical trial was done and are doing .Therapy with autologous stem cell for choronic allograft nephropathy is harmless (Safety), and available (Feasibility) , and findings confirmed for the benefit of their immunosuppressive effects Derived mesenchymal stem cells not only increasing regulatory cells ,but also reduces fatal memory cells and possible repair or reconstruction may provide with these cells. Regeneration, and repair with multi -potential stem cell or isolated mesenchymal cells from the patient's associated tissue engineering , particularly in the kidney have achieved considerable results.

Poster Presentation

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