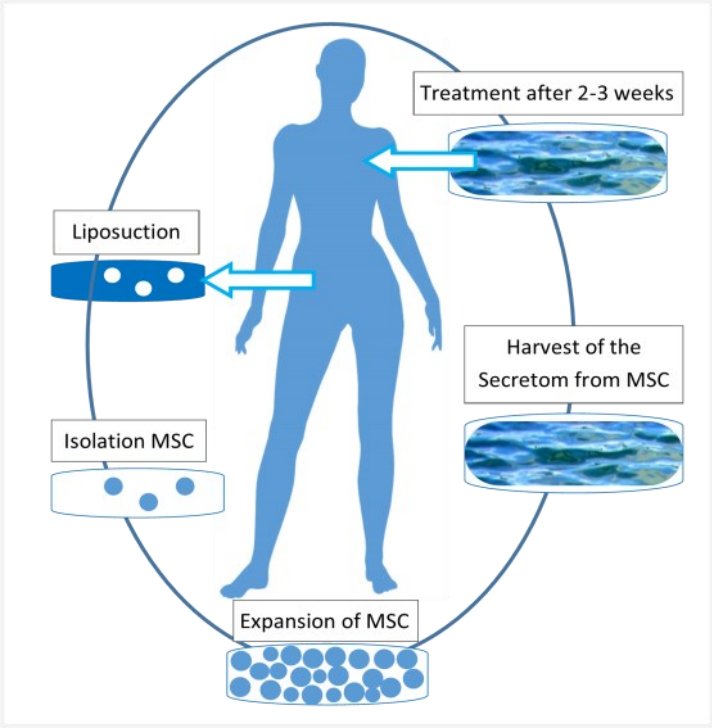

MESENCELL

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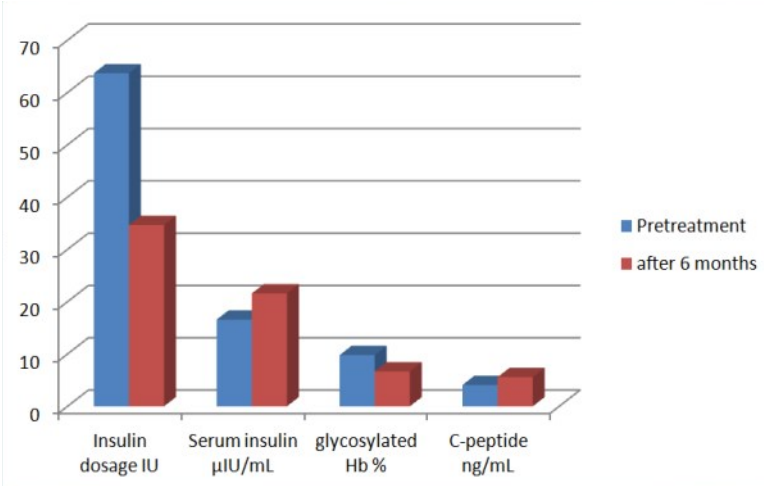
Diabetes

Adipose - Derived Mesenchymal Stem Cells

Mesenchymal stem cell infusion: a simple, safe and effective therapy of type 2 diabetes. Ref.7



Ref.7. **10 patients treated with 3 monthly intravenous injections of mesenchymal stem cells(1.35 x 10^6 cells/kg BW):**

- necessary insulin requirement from 63.7 IU (pretreatment) fell to 34.7 IU (after 6 months),
- serum insulin increased from 16.6 µIU/mL to 21.6 µIU/mL.
- levels of glycosylated hemoglobin fell from 9.8 % to 6.7% and
- levels of C-peptide rose from 4.12 ng/mL to 5.6 ng/mL during the six months examina tion period.

Various Diabetic Conditions
Mesenchymal Stem Cell
Treatment of the Complications of Diabetes Mellitus:

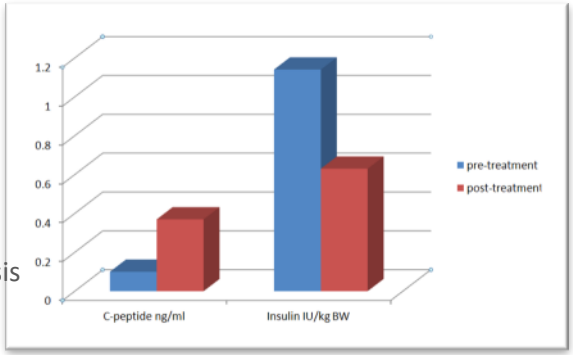
Diabetic atherosclerosis (stroke) [Ref. 4]
Diabetic retinopathy [Ref. 4]
Diabetic nephropathy [Ref.3,4]
Diabetic polyneuropathy [Ref. 3,4]
Diabetic wounds [Ref. 3]
Diabetic cardiomyopathy [Ref. 3]

Insulin Producing Cells from Mesenchymal Stem Cells

Transplantation of adipose-tissue derived insulin secreting mesenchymal stem cells in type I diabetes

Adipose-derived mesenchymal stem cells can differentiate into insulin producing cells. [Ref.5, 6] Clinical trial: [Ref.6]

- IV injection into omental vein
- No side effects
- Decrease of insulin requirement
- Reduction of Hb1Ac
- Raise of serum c-peptide levels
- Resolution of diabetic ketoacidosis



Ref.6: 11 patients;
pre-treatment c-peptide serum levels of 0.1 ng/ml increased to 0.37 ng/ml
pre-tratment exogenous insulin requirement fell from 1.14 units/kg body weight/day

to 0.63 units/kg BW/day

Treatment Of Type 2 Diabetes With Mesenchymal Stem Cells

Ref.7. 10 patients treated with 3 monthly intravenous injections of mesenchymal stem cells (1.35 x 10^6 cells/kg BW):

- necessary insulin requirement from 63.7 IU (pretreatment) fell to 34.7 IU (after 6 months),
- serum insulin increased from 16.6 µIU/mL to 21.6 µIU/mL.
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Mesencell can preserve your cells in liquid nitrogen for up to 10 years

Ref. 1. Ra et al.: Stem cell treatment for patients with autoimmune disease by systemic infusion of culture-expanded autologous adipose tissue derived mesenchymal cells. Journal of Translational Medicine 2011, 9:181. Ref. 2. Ra et al: Safety of intravenous infusion of human adipose tissue derived mesenchymal stem cells in animals and humans. Stem Cell Dev 2011, 20(8): 1295-6. Ref. 3: Volarevic, V. et al. (2011): Concise Review: Mesenchymal Stem Cell Treatment of the Complications of Diabetes Mellitus. Stem Cells 2011; 29:5-10 Ref. 4: Bernardi, S. et al. (2012): Cell-Based Therapies for Diabetic Complications. Experimental Diabetes Research, Volume 2012, Article ID 872504 Ref. 5: Timper, K et al. (2006): Human adipose tissue-derived mesenchymal stem cells differentiate into insulin, somatostatin, and glucagon expressing cells. Biochem Biophys Res commun,2006 Mar 24; 341 (4):1135-40 Ref. 6: Vanikar, A.V. et al. (2010): Cotransplantation of Adipose Tissue-Derived Insulin-Secreting Mesenchymal Stem Cells and Hematopoietic Stem Cells: A Novel Therapy for Insulin-Dependent Diabetes Mellitus. Stem Cells International, Volume 2010, Article ID 582382 Ref.7. Jiang R., et al. (2011): Transplantation of placenta-derived mesenchymal stem cells in type 2 diabetes: a pilot study. Front.Med.2011, 5(1):94-100