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Using organ-specific progenitor cells extracts in regenerative medicine

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Proliferation and differentiation of stem cells requires a specific microenvironment – "stem cells niche". For *in vivo* modulation of organ-specific niches during SCs transplantation could be useful Fetal Tissue Extracts (FTEs). In the stage of organogenesis microenvironment in each of the organs must be specific and stable enough to generate constant signal for the final differentiation of organ-specific progenitor cells. The purpose of this study is to test and validate this hypothesis. We investigated the content and concentrations of growth factors in FTEs of various organs; and studied the efficacy of FTEs in liver cirrhosis and chronic non-healing wounds patients who did not respond to stem cells treatment. Transplantation of prenatal hepatoblasts, hematopoietic stem cells, and 3 weeks of daily fetal liver extracts injections showed effectiveness in 75% of this liver cirrhosis cases that is characterized by significant decrease of liver fibroscan density, decrease of portal hypertension and ascites, decrease or normalization of biochemical markers of liver damage. Connective tissue metabolism showed increase of fibrinolytic and collagenolytic activity. In patients with chronic non-healing wounds who do not have any improvement after previous stem cells treatment, administration of FTEs (skin, muscle) activated the wound epithelialization with completely healing of Thus, FTEs obtained from the stage of incomplete organogenesis can be useful for *in vivo* modulation of organ-specific niches for transplanted stem cells.

Biography

Padma Priya Anand Baskaran completed her MSc Biotechnology from Saint-Petersburg State Chemical Pharmaceutical Academy (Russia). She has her research experience, and history of working in the hospital & health care industry. She is skilled in Stem Cells Therapy protocol from preparation to treatment and has established efficacy of stem cells in clinical research. She has 15 scientific publications to her credit. Her field of interest includes: Ageing, Prenatal Stem Cells, Exosomes, 3D Progenitor Cell Cultures, and Stem Cell Niche Modeling.

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