9th Yazd International Congress and Student Award on Reproductive Medicine with 4th Congress of Reproductive Genetics

Key Lectures

K-13
Regenerative medicine in liver and pancreas

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Many deaths in the world occur every year due to chronic liver and cirrhosis diseases. Liver transplant is the gold standard treatment but organ shortage is a great obstacle. There are several cell sources for liver regeneration such as primary hepatocytes, Mesenchymal (MSCs), embryonic stem cells and induced pluripotent stem cells (iPSCs). Nowadays, tissue-engineering strategies in liver regenerative medicine is an attractive issue; like cell sheet, liver organoids, recellularized liver, and bioartificial liver organs. Regarding diabetes mellitus, a whole pancreas transplant is the treatment of choice. Allogeneic islet transplantation in the liver of carefully selected diabetic recipients via portal vein infusion is an alternative cell-based strategy. Other stem cell sources like chemically induced islet-like cells, embryonic stem cells & iPSCs are alternative sources. The application of ECM scaffold functionalization to present bioactive motifs is an important issue in tissue engineering strategies for the pancreas. Currently, macroencapsulation and microencapsulation systems are used in several clinical studies. However, there are many challenges in both primary and stem cell therapy for liver and pancreas disease such as ethical problem, immune rejection, and best cell number and rout of transplantation.