O-01 DENDRITIC CELLS-BASED IMMUNOTHERAPY FOR CANCER PATIENTS

Dae-Heui Lee

Department of Pharmacology, Kosin University College of Medicine, Busan 602-703, Korea

Dendritic Cells (DCs) may be suited for immunotherapy for its capability to stimulate naive T cell. DCs were established from the peripheral blood leukocytes of cancer patients by culturing in the presence of Flt-3 ligand, GM-CSF, IL-4, and TNF-α for 14 days. At day 15, DCs were incubated with autologous T cells and lysate of the cancer tissues. At day 18, intact cancer tissues were incubated with autologous activated T cells for 4 days and examined the morphology of the cancer tissue and T cells by scanning electron microscopes. The differentiated cells showed typical morphology of DCs including multiple processes and profuse cytoplasm. The cells stained positively with CD1a, CD83 and CD86. Activated cytotoxic T lymphocytes and veiled cells adhered and destroyed the cancer tissues. However, normal tissues were not attacked by T cells. This study indicated that DCs with enhanced antigen presenting activity can be generated from leukocytes, and that they may be used as potential vaccines in the immunotherapy or strategy for minimal residual disease of cancer.

Key Words: Dendritic cells, Cancer, Cytotoxic T lymphocytes, Immunotherapy

O-02 EFFECTS OF UMBILICAL CORD BLOOD (UCB) STEM CELLS IN LIVER CIRRHOSIS MODEL

Kyung Hee Jung[1], Soo-Han Hwang[2], Hoon Han[2], Joo-Ho Chung[1], Sung-Vin Yim[1]

[1]Department of Pharmacology, School of Medicine, Kyung Hee University, Seoul 130-701, [2]Research Institute of Biotechnology, HistoStem., Co., Ltd, Seoul Life Foundation Bldg., Seoul, Korea

Liver cirrhosis is characterized by hepatic dysfunction with extensive accumulation of fibrous tissue. Recently, it has shown the capacity mesencymal stem cell (MSCs) to differentiate into hepatocytes. MSCs administration could repair injured liver, lung, or heart through reducing inflammation, and collagen deposition. Here, we investigated the effect of infusion of umbilical cord blood (UBC)-derived MSCs in liver cirrhosis in rats. MSCs from umbilical cord blood were infused to male Sprague-Dawley rats that liver cirrhosis was induced by carbon tetrachloride (CCl4) for 8 weeks. The effect of MSCs on liver cirrhosis was detected using hematoxylin and eosin staining (H&E), and Masson's trichrome staining. Blood samples were collected for measurement of alanine aminotransferase (ALT), aspartate aminotransferase (AST), and albumin. Immunohistochemistry assay and RT-PCR were used to examine the protein expression and mRNA levels of TGF-β1, collagen and α-Smooth muscle actin (α-SMA). Rats were killed on 1, 2, 4 weeks after UBC-derived MSCs administration. H&E and MT staining study showed that liver fibrosis in rats was alleviated when transplanted with UBC-derived MSCs than without MSCs. Additionally, A remarkable improvement of serum ALT, AST, albumin in the infused MSCs group was observed. Immunohistochemistry, RT-PCR, immunoblotting results showed infusion of UBC-derived MSCs significantly inhibited TGF-β1, collagen I and α-SMA expression in CCl4-injected rat liver. This result might suggest that UBC-derived MSCs treatment can protect against experimental in CCl4-induced liver cirrhosis in rat.

Key Words: Umbilical cord blood (UBC)-derived MSCs, Carbon tetrachloride (CCl4), Liver cirrhosis