Background Adipose-derived stromal vascular fraction (SVF) cells, a rich source of primary stem/stromal cells, are promising for administering cell therapy for patients with acute-on-chronic liver failure (ACLF). We evaluated the therapeutic effects of CD34+ /CD34- SVF cells in hepatocyte cotransplantation in a rat model of ACLF.

Methods ACLF was induced in Sprague-Dawley rats by temporary bile duct ligation and d-galactosamine administration. Donor hepatocytes and SVF cells (labelled with the PKH26 fluorescent dye) were freshly isolated from Tg(UBC-emGFP) rats and human adipose tissues, respectively. Sorted CD34+ and CD34- SVF cells were separated using a magnetic bead system. Rat hepatocytes and SVF cells (unsorted and sorted) were intraportally transplanted into ACLF rats. The surviving animals were sacrificed at 1 and 2 weeks after transplantation.

Results ACLF was evidenced by the development of acute coagulopathy and hepatocyte necrosis in fibrotic livers. Compared with the control group, the unsorted group showed less biliary ductular proliferation and fibrosis at 1 week after transplantation. Prominent biliary ductular proliferation and significantly increased fibrosis were observed in the CD34+ group at 1 week. At 2 weeks, the serum level of alkaline phosphatase was significantly lower in the CD34+ group than in the CD34- group. The transplanted SVF cells were found in the periporal regions at 1 week, whereas donor hepatocytes were rarely detected.

Conclusions Compared with CD34- SVF cells, cotransplantation of CD34+ SVF cells resulted in the early amelioration of liver fibrosis and biliary ductular proliferation in ACLF rats.

**Basic Hepatology**

**IDDF2018-ABS-0037 THERAPEUTIC BENEFIT OF ADIPOSE-DERIVED Stromal VASCULAR FRACTION Cell TRANSPANTATION IN Rats OF ACUTE-ON-CHRONIC LIVER FAILURE**

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