Inhibit the Function of SREBP1 possibolly Promote Apoptosis and 5-Fu Sensitivity of Colorectal Cancer

Yuyan Gao (Haerbin Medical University Cancer Hospital, China), Xiaofeng Ge (Haerbin Medical University Cancer Hospital, China), Xiaoqin Mu (Haerbin Medical University, China), Binbin Liu (Haerbin Medical University, China).

BACKGROUND: The change of metabolism regulation is essential to the malignant tumor. The proliferation and metastasis malignant tumor are associated with metabolic changes. Sterol adjusting element binding protein 1 (SREBP1) is the key transcription regulatory factor to the lipid synthase. Abnormal lipid of synthesis and is closely related to proliferation, invasion and metastasis of malignant tumor, and some studies confirmed that SREBP1 also could promote drug resistance and metastasis of breast cancer and prostatic cancer by the way of oxidative stress and gene repair. Colorectal cancer (CRC) is third most common type cancer in the world. It is still unclear that what is the real function of SREBP1 in CRC proliferation, invasion and metastasis.

HYPOTHESIS: The expression level of SREBP1 probably related to CRC proliferation and the CRC susceptibility to 5-Fu.

METHODS: Immunohistochemistry method was used to detect the expression level of SREBP1 in tissue including normal colorectal tissue, colorectal adenoma, colorectal cancer tissue et al. Real-time PCR and western-blot methods were used to examine SREBP1 expression level in SW480, SW620, DLD1, HT29, HCT116. Used fatostatin the inhibitor of SREBP1 to deal with HT29 and HCT116, and used the overexpression of SREBP1 stable transfection system to deal with SW480 and SW620, then checked by CCK8 and flow cytometer detection to study the IC50 of 5-Fu, proliferation, apoptosis of colorectal cancer cells.

RESULTS: SREBP1 expressed in normal colon mucosa in low; Expressed in large intestinal tumor tissue increased slightly; High expression in colorectal cancer tissue, especially in the invasive carcinoma nests. 15-20uM fatostatin (the inhibitor of SREBP1) could obviously inhibit proferation and promote apoptosis of HT29 and HCT116. The susceptibility to 5-Fu decreased in SREBP1 overexpression cells such as SW480 and SW620. Now our group are doing research on the molecular mechanism. SREBP1 plays very important roles in CRC, and detail research is highly necessary.