B-01

THERAPEUTIC EFFECT AND MECHANISM OF ZUO-JIN-WAN ON HEPATOCELLULAR CARCINOMA

左金丸抗肝癌效應及機轉研究

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Abstract:

Background and Aims: Hepatocellular carcinoma (HCC) is the sixth most common malignancy worldwide and the third cause of cancer-related mortality[1]. Because of the high prevalence and mortality of HCC, the tumor growth and migration have become great concern. HCC is caused by multiple factors, and several cellular proteins are involved in the progression of HCC. For examples, nuclear factor-κB (NF-κB) is related to chronic inflammation, which is the major cause of HCC. Activator protein 1 (AP-1) is involved in tumor transformation. Metalloproteinase promotes the spread, invasion, and growth of tumor cells, facilitates them to penetrate the cell wall in veins, and tumor growth[2]. Traditional Chinese medicine has been used as an anti-cancer agent or as an adjuvant therapy for the treatment of cancers for centuries. However, there are little scientific evidences on its effectiveness. The aim of this study was to investigate effects and molecular mechanisms of Zuo-Jin-Wan and its components (*Coptis chinensis* and *Evodia rutaecarpa*) on the survival, invasion, and metastasis of HCC in human hepatoma HepG2 cells and tumor-bearing mice.

Materials and Methods: For *in vitro* studies, the anti-survival effects of herbs in HepG2 cells were examined by MTT assay, the anti-invasive effects were analyzed by matrigel assay, and the anti-cancer mechanism was evaluated by gelatin zymography and microarray. For *in vivo* studies, animal models of orthotopic HCC and HCC metastasis, which were built by intrahepatic and intraperitoneal injections, respectively, were used to investigate the inhibitory effect of Zuo-Jin-Wan on cancer survival and migration.

Results: Our data showed that Zuo-Jin-Wan effectively suppressed orthotopic HCC and HCC metastasis in mice. Moreover, MTT assay showed that Zuo-Jin-Wan inhibited the growth of HepG2 cells. Furthermore, microarray analysis showed that Zuo-Jin-Wan mainly suppressed the activities of NF-kB and AP-1 and sequentially reduced the expression of C-*myc* gene. Further experiments on the anti-invasive effects of Zuo-Jin-Wan in cells are in process.

Reference:

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