

Traditional Chinese medicine for primary liver cancer

LI Zuo-Qing

Subject headings Liver cancer, primary; TCM; complication; pain; ascites; fever

Further progress has been made in the traditional Chinese medicine for primary liver cancer over the past few years, especially in the research of traditional Chinese medicine (TCM) treatment principle, improvement of therapeutic results and prolonging the survival.

Research of TCM therapy principles

Strengthening the Spleen and replenishing Qi. According to Yu Er-Xin's^[1] principle, medication to strengthen Spleen and replenish Qi is believed to be effective in hindering the growth of tumors, even decreasing the size of tumors, improving patients' health conditions and prolonging their lives. It is also believed to strengthen the function of T lymphocytes, adjust the NK cells and help protect the liver function. Song Ming-Zhi's^[2] examination of cyclic nucleoside in the blood of cancer patients showed that cAMP in the patients with weakness and slackness of the Spleen decreased significantly, while in the type of damp and heat and Yin deficiency, cGMP tended to increase greatly. The medication to strengthen Spleen and replenish Qi can increase cAMP but decrease GMP.

Activating the blood flow and phosphating stasis (ABFPS). Modern medicine has proven that cancer patients usually have trouble with microcirculation. The therapy of ABFPS can improve microcirculation and enhance immunity, and some medications can directly kill cancer cells. Of 24 cases of 3 primary liver carcinoma treated with Wang Xiao's^[3] ABFPS, 60% showed improvement, 26% had the size of carcinoma decreased, the medium survival was five months and the >1 year survival rate was 25%, which indicates that such medication can improve microcirculation, increase blood flow and decrease platelet

aggregation. The research by Ying Duo-Rong^[4] in mechanism of this medication showed that it is effective in fighting against carcinoma, normalizing proteinogen of plasma and increasing the activation of lysozyme. Such a medication can also affect the synthesis of cellular toxin of S 180 RNA in mice and adjust the immunity. Some components of the medication such as *Rhizoma Sparganii*, *Rhizoma Zedoariae*, *Radix Angelica Sineasis*, *Flos Carthami* *Radix Paeoniae*, *Squama Manitis*, *Olibanum*, *Myrrha* and *Eupolyphaga Seu Steleophaga* had inhibitory effect in carcinoma of animal models. They also help prevent radioactive fibrosis and regulate nervous system and internal secretion. A pathological and ultrastructural study by Liu Jin-Fang^[5] revealed that this medication can directly affect the structure of liver cancer cell membrane by breaking it down, expanding rough surfaced endoplasmic reticulum (RER) and swelling of mitochondrion so as to destroy the liver cancer cells.

Cleaning the heat and toxins. This medication of TCM is one of the main therapies for cancers. It was reported in Japan that treatment with herbs like -Herba Solani Lyrati, Herba Agrimoniae-and-Radix Sophorae Tonkinensis-proved effective for various kinds of carcinomas with an effective rate of 84.6%-100%. Lu Gui-Zhi's^[6] compound -Herba Solani Nigri- injection (composed of Herba Solani, snake venom- and-Herba Solani Lyrati) administered to mice with ascitic carcinoma had an inhibiting effect of 87.35%. According to Pan Ming Ji's^[7] theory, the medication of cleaning heat and toxins can remove the stasis of cancer toxin from human body, therefore, strengthen Yin exhausted by the long period of sickness and balance the body function.

Strengthening body resistance to eliminate pathogenic factors. Qiu Jia-Xin^[8] in the principle of strengthening the Spleen and replenishing Qi, cleaning heat and eliminating toxin and softening hard mass and eliminating phlegm, used *Radix Pseudostellariae*, *Rhizoma Panacis Majoris*, *Rhizoma Atractyodis*, *Poria*, *Radix Salviae Miltiorrhizae*, *Flos Lonicerae*, *Radix Serbilanthes*, *Concha Ostreae*, *Spica Preunellae*, *Carapax Trionycis*, *Flow Rosae Rugosae*, *Prumus Mume*

Guangxi Cancer Research Institute, Nanning 530027, Guangxi Province, China

LI Zuo Qing, male born in 1953, is now an associate professor and specialist in combined therapy of traditional Chinese and western medicine for malignant tumors in Guangxi Tumor Research Institute, Guangxi Medical University, having 15 papers published.

Received 1997-08-01 Revised 1998-02-15

(*sieb*), *Lumbricus*, *Fructose Akebiae* and *Rhizoma Arisaematis* to treat 123 cases of advanced cases of liver cancer with a 1-year survival rate of 32.5%. It was proved that the formula of cleaning heat and eliminating toxin was most effective in killing liver cancer cells, and some components of the medication such as *Rhizoma Atractylodis*, *Concha Ostreae*, *Rhizoma Arisaematis*, *Flos Mume Albus* can inhibit the cancer growth and transmission of Lewis cancer. Chen Kai's^[9] medication was composed of roots of *Radix Quinguefolium*, *Radix Acanthopanax*, *Senticos*, *Radix Asparagus*, *Venenum Bufonis* and *Bulbus Bolbostemmae*, which were made into liquid and experimented on mice with transmitted cancer. The experiment revealed that the liquid can promote the activation of these mice's NK cells and IL2, and help enhance the transformation of T cells and the function of macrophages, with a 50% inhibitory rate of the development of carcinoma.

Dialectical treatment

In recent years, obvious progress has been made in clinical treatment of cancer and prolonging the survival of cancer patients. Wang Ze-Guang^[10] treated 110 liver cancer patients with self-made anti-cancer prescriptions No.1.4 at one dose daily for 30 days as a therapeutic course. Liver cancer characterized by stagnation of Liver Qi was treated with No.1 formula composed of *Radix Bupleuri*, *Radix Paeonia Alba*, *Radix Curcumae*, *Fructus Citriimmaturi*, *Indigo Naturalis* and *Herba Scutellariae Barbatae*. Liver cancer featured in blood stasis and Qi stagnation was treated with No. 2 formula composed of raw *Concha Ostreae*, *Squama Manitis*, *Scolopendra*, *Eupolyphaga Sen Steleophaga*, *Rhizoma Corydalis*, *Flos Genkwa* and *Nidus Vespaee*. Liver cancer with damp heat and virulent heat was treated with No.3 formula composed of *Herba Artemisiae Scopariae*, *Radix et Rhizoma Rhei*, *Fructus Gardeniae*, *Rhizoma Curcumae Longae*, *Rhizoma Paridis*, *Fructus Forsythiae*, *Herba Lysinachiae*, *Herba Taraxaci*, *Radix Phytolaccae* and *Rhizoma Smilacis Glabrae*. Liver cancer with weakness of Liver and Spleen was treated with No.4 formula composed of *Radix Pseudostellariae*, *Radix Glehniae*, *Radix Angelicae Sineasis*, *Semen Pharbitidis*, *Herba Lobeliae Chinensis*, *Herba Artemisiae Annuae*, *Cortex Moutan* and *Cortex Magnoliae*. These types of liver cancer were treated at the same time with No.5 formula composed of *Radix Ginseng*, *Cornu Cervi Pantotrichum*, *Placenta Hominis*, *Moschus*, *Realgar*, *Flos Carthami*, *Rhinoceros Bicornis*, *Cornu Antelopis*, *Borneolum*, *Endothelium*

Corneum Gigeriae Galli, *Hirudo*, *Calculus*, *Semen Strychnis*, *Vennenum Bufonis*, *Sanguis Draconis*, *Radix Kansui*, *Carapace Trionvcis*, *Radix Aconiti* and *Squama Manitis*. Most of the patients showed improvement and decreased size of diseased livers. Some of the patients had decreased or even negative results of AFP. The longest survival time was 17.4 months, averaging 7.4 months. Lin Zong-Guang^[11] treated 44 cases of primary liver cancer of advanced stage with the therapy of strengthening body resistance and activating blood flow and softening hard mass which greatly improved the patients symptoms and quality of life with 1-year, 3-year and 5-year survival rates of 50%, 27.2% and 4.5%. Zhang Li-Ying^[12] treated 34 cases of primary liver cancer by the formula of replenishing Qi, activating blood flow, eliminating stasis, softening hard mass and removing symptoms, as a result, 10 patients survived more than one year. Liu Bian-Lin^[13] treated 30 patients with traditional dialectical therapy, who were divided into four types of Qi stagnation and blood stasis, dampness and heat of Liver and Gole, weakness of Spleen and Stomach, weakness of Liver and Kidney, with an average survival time of 15 months and two cases remained alive for over two years. Xu Yi-Yu's^[14] medication was composed of *Concha Arcae*, *Pingdimu*, *Shiyan* and *Radix Rhapontici seu Echinopsis*, dispersing mass in combination of chemical therapy and surgery. Of the 212 primary liver cancer patients treated, 8 lived over 10 years, 9 lived over 5 years, 39 cases over 3 years and 93 over one year. Liu Ji-Fang^[15] treated 201 cases of middle or advanced primary liver cancer with tablets of resolving masses, 198 showed obvious clinical improvement and 89.12% of them prolonged their lives for 10 to 36 months, 6.5% had temporary recovery, the total effective rate being 58.8%. The medication also showed reduction of AFP. In five cases of liver cancer treated with Liu's medication, electronic microscopic observation revealed that the tissues of their tumor lumps had been destroyed and a large amount of lymphocytes and phagocytes infiltrated and the proportion of nucleic shrank. According to Cai Xin's^[16] medication, 20 g beehouse boiled in the liquid was taken once daily for the treatment of two cases of primary liver carcinoma. One showed shrinkage of the tumor lump and AFP turned negative, with 6 years of prolonged life. The other case treated in combination of other medications for three months also showed shrinkage of tumor lump and AFP turned negative. Now the patient is still alive. Zhou Jia-Xi^[17] treated two patients with Liu Lu-Ming's medication, which included disinfection and invigoration, by using Pianzaihuang to disperse

mass and remove stagnation, and *radix Quinguefolium* to strengthen the body resistance, as a result, one of the patients continue to live for three years and the other for five years. Li Ya-Lin^[18] treated 36 patients with liver cancer who could not be operated on with the traditional medication with the effect of soothing the Liver, activating the blood, removing stagnation and strengthening the Spleen. Pharmaceutical analysis showed that the components of the medication like *Rhizoma Zedoariae* had suppressing effect on the cancer lumps and the other components had different degree of resistant effect on liver cancer. Treated with this medication, 94.4% of patients remained in stable conditions and 5.5% showed improvement. Cheng Ning's^[19] analysis of the results achieved in the recent ten years in TCM treatment of primary liver cancer showed that 92.1% of the TCM medications used in treatment of liver cancer were characterized by activation of the blood and removal of stagnation, 84.3% by elimination of heat and toxin, and 79.9% by enhancement of the Spleen. All this indicates that the major pathological cause and mechanism of primary liver cancer in the middle or advanced stage were accumulation of blood stasis, heat and toxin and the weakness of the Spleen.

Treatment of complications

Pain. The pain caused by liver cancer is most common among the advanced cases and is most difficult to control according to TCM such pain is caused by the stagnation of the Liver and blood stasis or by the blocking of blood vessels that resulted from body's internal damp heat. In TCM therapy both oral administration and external application were adopted, which was superior to the modern medicine, being more convenient and effective but with less side effects. ① Oral administration. Liu Lu-Ming^[20] applied Xiangsha Liujunzi Tang, Jishi Xiaopi Pills, Chaihu Sogan San, Wendan Tang, Yiguang Jian and Simoyinzi to 169 cases of liver cancer pain, with an effective rate of 46.1%. If complemented with anti-inflammatory drugs and salicylic acids, it can relieve 93.5% of pain. Li Ya-Lin treated 36 patients with liver cancer who could not be operated on, with the traditional medication with the effect of soothing the Liver, activating the blood, removing stagnation and strengthening the Spleen. Pharmaceutical analysis showed that the components of the medication like *Rhizoma Zedoariae* had suppressing effect on the cancer lumps and the other components had different degree of resistant effect on liver cancer. Treated with this medication, 94.4% of patients

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Ascites. Hu An-Bang's^[28] medication made from *Cornu Rhinoceri*, *Radix Rehmanniae*,

Rhizoma Imperatae and *Cortex Moutan*, each 30 g, and *Cortex Cinnamomi*, *Rhizoma Anemarrhenae*, *Cortex Phellodendri*, *Radix Vladimiriae* and *Pericarpium Arecae*, each 15g showed good effect in reducing ascites. Li Pei-Wen's^[29] formula composed of *Radix Astragali*, *Semen Coicis*, *Semen Pharbitidis*, *Radix Scutellariae* and *Radix Aristolochiae* produced good effect when administered externally. Lin Zhong-Guang's^[30] medication aimed to strengthen the resistance and to soften the cancer lump. In 22 cases of ascite patients treated with this medication, 15 were improved in their condition, with an effective rate of 72.7%.

Cancer fever. The mechanism of cancer fever is not yet clear and there has been no specific method for it. Patients with such symptom are usually treated with anti-inflammatory drugs in modern medicine, which has more side effects and long-term usage might do harm to patients' health. Li Zuo-Qing^[31] treated 68 of such cases with traditional Chinese dialectical therapy which are classified into three kinds of blood stagnation caused by Yin deficiency, blood stagnation caused by heat toxin and simple blood stagnation, and achieved an effective rate of 86%. Xu Ji-Ping's^[32] medication showed better effect than dexamethasone and aminopyrine in treatment of the fever caused by malignant carcinoma. His medication consists of 15 g *Flos Lonicera*, 40 g *Cornus Bubalis*, 30 g *Pseudobulbus Cremastreae Appendiculatae*, 30 g *Radix Tetrastigmae*, 12 g dried toad skin and so on, which was cooked and taken twice a day. According to Wang Qing-Cai's^[33] dialectical analysis, such fever can be divided into four groups of Qi weakness, Yin deficiency, blood stasis and heat toxin. He treated 70 cases according to his theory with the medications of Buzhong Yinqi decoction, Zhen Yi Tang, Xuefu Zuyu decoction and Qingwen Baidu decoction for ten days with an effective rate of 78.5%.

Comprehensive therapy

In treatment of primary carcinoma at advanced stage, the combination of traditional Chinese and modern medicine is usually advocated to obtain higher clinical effective rate and survival rate. Dong-Wei-Yan's^[34] combined therapy includes a traditional medication of *Radix Codonopsis Pilosulae*, *Rhizoma Atractylodis*, *Herba Patrinia*, *Herba Agrimoniae*, *Radix Pseudostellariae*, *Herba Taraxaci* and *Herba Solani Lyrati*, etc. and chemical treatment of 5-FU hepato-artery infusion. In a year's treatment of 36 cases, their survival rates of 1, 3, and 5 years were 57.9%, 20% and 16.6% respectively. Hu Bing^[35] used combined TCM of

strengthening the Spleen and chemical therapy of adriamycine in treatment of primary carcinoma of advanced stage. The TCM consists of the liquid made from *Radix Astragalis*, *Rhizoma Astrsactylodis*, *Radix Ginseng*, *Semen Dolichoris*, *Rhizoma Dryopteris Crassirhizomae*, *Fructus Citri*, *Radix Raphani*, etc. The infusion of the combined medication was administered to 16 cases once every three weeks for nine weeks. After treatment, two cases were completely relieved of symptoms, 3 partially relieved, 8 remained stable and 3 deteriorated, with a relieving rate of 31%. Their median survival period was 12.6 months. Yu Er-Xin^[36] believed that the combination of chemical therapy and TCM can increase the therapeutic effect. Generally, in patients with stage II liver cancer treated by chemical therapy alone, the 1-year survival rate was about 30%, and the 5-year survival rate was only 5%, while the combined therapy can increase the one-year survival rate to 70% and five-year survival rate to 10%-20%. Ling Hong-Ying^[37] used traditional herbal liquid of *Bai Nian Le* and levamisole and cimetidine to treat 30 cases of primary carcinoma. The result showed that the medication could highly increase the activity of NK cells. Wang Xiao-Xian^[38] used combined oral administration and external application to 17 primary carcinoma patients. The TCM Ganai decoction consisting of *Fu* and traditional herbal liquid of *Rhizoma Smilacis Glabrae*, *Carapax Trionycis*, *Concha Ostreae*, *Radix Astragali*, *Endothelium Corneum Gigeriae Galli*, *Herba Lycopi*, etc. was taken orally together with Xiaoji pills or Xiaoji liquid. Paste made from *Venennum Bufonis*, *Caulis Fibraureas*, etc. was applied externally to the diseased spots. The result showed that, 14 of 17 cases, died within 5 months, 3 survived, tumor lump disappeared in one of them who has now survived 49 months; the other two survived 35 and 38 months with tumor still existing. Wu Jun-Yu^[39] found in his 6-year clinical observation of 18 patients with primary liver cancer who were treated with TCM therapy that TCM could increase human immunity, slow down the growth of tumor lumps and even shrink them. Such an effect would make it possible to perform the second stage operation on the cancer patients and to prevent to a certain degree the transmission of the tumor. As a result, 50% of the patients survived 3 years and 33.33% survived 5 years.

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