

Exploration of Clinical Regularities in Acupuncture-moxibustion Treatment for Cancer Pain

针灸治疗癌症疼痛临床规律探讨

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【摘要】目的: 回顾 1954~2009 年针灸文献, 探索针灸治疗癌症疼痛用穴和治疗方法的规律。**方法:** 根据《中国现代针灸信息数据库》数据, 采用计量分析方法进行综合分析。**结果:** 足三里、阿是穴、三阴交使用频次为最, 足三里、三阴交是最佳组穴, 治疗方法以针刺和针药并用为主。建议足三里、阿是穴、三阴交可作为针灸治疗癌症疼痛基础方, 并随证选穴。**结论:** 针药并用治疗癌症疼痛可以提高疗效。

【关键词】 针灸疗法; 肿瘤; 疼痛; 文献计量学; 评价研究

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【Abstract】 Objective: To review acupuncture-moxibustion literature of year 1954-2009 and explore the regularities in point selection and therapeutic methods for acupuncture-moxibustion treatment of cancer pain. **Methods:** A comprehensive analysis was made by a method of metrological analysis according to the data from China Modern Acupuncture-moxibustion Information Databank. **Results:** Zusanli (ST 36), Ashi point and Sanyinjiao (SP 6) were most frequently used. Zusanli (ST 36) and Sanyinjiao (SP 6) were optimal points combination. Acupuncture and the combination of acupuncture and moxibustion were the major treatments. It proposed that Zusanli (ST 36), Ashi point and Sanyinjiao (SP 6) can be used as a basic prescription for acupuncture-moxibustion treatment for cancer pain, and acupoints selection according to the syndrome may be added. **Conclusion:** The combination of acupuncture and moxibustion can improve the therapeutic effect on cancer pain.

【Key Words】 Acupuncture-moxibustion Therapy; Neoplasms; Pain; Bibliometrics; Evaluation Studies

Cancer pain refers to pain caused by tumor compression on and/or invasion of related tissues and nerves and is one of the clinical common symptoms of cancer. The disease pertains to aggregation-accumulation, abdominal mass, and pain syndrome in traditional Chinese medicine. It is caused by vital qi deficiency coupled with phlegm stasis and toxins, resulting in qi stagnation and blood stasis, phlegm and toxin accumulation, meridian obstruction, and pain due to obstruction. How to relieve cancer pain to improve quality of life is a problem that remains to be urgently solved in clinic. Acupuncture-moxibustion therapy has been used as a new therapeutic means for cancer patients and plays a more and more important

role in relieving cancer pain because of its advantages of being safe and no analgesics-produced addiction and toxic side effects.

1 Literature Sources and Analysis

1.1 General situation of the databank

The status of acupuncture-moxibustion treatment for cancer pain was systematically analyzed according to 93 papers on cancer pain and total 24 293 patients from 71 222 pieces of information collected from China Modern Acupuncture-moxibustion Information Databank (1954-2009) developed by Shanghai Research Institute of Acupuncture and Meridian. The regularities in the point selection and therapeutic methods were summarized. The purpose was to get a better understanding of the current situation, widen the thinking and further promote the clinical application of acupuncture and moxibustion.

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1.2 Inclusion and exclusion criteria^[1]

1.2.1 Inclusion criteria

① The data came from 75 journals of acupuncture and moxibustion, traditional Chinese medicine and combined traditional Chinese and Western medicine with a Chinese national publication number.

② The data came from the acupuncture-moxibustion literature published from 2000 to 2009.

③ The included articles with a controlled trial was taken as one article if a comparison was made with treatment other than acupuncture and/or moxibustion, e.g. Western medicine; and it was taken as several articles according to the number of control groups if the comparisons were made with different acupoints or different acupuncture therapies.

④ A clinical study or report regarded human being as subjects, and contained a sample of more than 5 cases, detailed methods of point selection and treatment, a definite therapeutic effect and reliable data about the therapeutic effect.

⑤ The disease name was indexed according to MeSH2010 and *Medical Subject Headings Annotated Alphabetic List*.

⑥ The acupoint and acupuncture-moxibustion treatment were indexed according to the *Chinese Traditional Medicine and Materia Medica Subject Headings*.

1.2.2 Exclusion criteria

① Data from supplements, proceeding papers, collections of postgraduate papers and excerpts were excluded.

② Data about medical records, famous doctors' experiences, experimental studies, literature search, acupuncture anesthesia and acupuncture accidents were included but were not statistically analyzed.

③ Data from articles that contained a clinical sample of less than 5 cases, or did not report clinical therapeutic effects or had data error, or were repeatedly published were included but were not statistically analyzed.

1.3 Literature analysis

Acupuncture-moxibustion treatment for cancer pain first appeared in 1985^[2]. Of the 93 papers, 57 were clinical reports^[3-18], accounting for 61.3%; 9 were case analyses, accounting for 9.7%; 15 were literature studies, accounting for 16.1%; 3 were clinical studies^[19-21], accounting for 3.2%; 2 were experimental studies^[22,23], accounting for 2.2%; 4

were repeatedly published papers^[17,19,24,25], accounting for 4.3%; 3 had data error^[26-28], accounting for 3.2%. Of the papers on clinical reports, 32 were controlled studies, accounting for 56.1%. Of them, 24 reported randomization, accounting for 25.8% of the total papers and 75.0% of the papers on controlled studies. Statistical data showed that clinical studies on acupuncture-moxibustion treatment for cancer pain predominated, accounting for 74.2%.

2 Results and Discussion

2.1 Characteristics of point selection

2.1.1 A summary of commonly used acupoints

The analytical results showed that acupuncture-moxibustion treatment for cancer pain involved a total of 58 acupoints. Of them, there were 50 acupoints of the fourteen meridians (regular points), 2 extraordinary points and 6 ear points.

The acupoints used clinically at a frequency of more than 5 times in all the analyzed data were summarized and generalized. The regular and extraordinary points, arranged in order of frequencies at which they were used, were Zusanli (ST 36) (32), Ashi (18), Sanyinjiao (SP 6) (18), Neiguan (PC 6) (14), Feishu (BL 13) (12), Hegu (LI 4) (10), Qimen (LR 14) (10), Ganshu (BL 18) (8), Shenshu (BL 23) (8), Taichong (LR 3) (8), Xinshu (BL 15) (6), Weishu (BL 21) (6), Pishu (BL 20) (6), Yanglingquan (GB 34) (6), Zhangmen (LR 13) (6), Yinlingquan (SP 9) (6), Shangwan (CV 13) (5) and Fengmen (BL 12) (5).

2.1.2 Characteristics of point selection

The clinically selected 52 regular and extraordinary points showed that Zusanli (ST 36) and Sanyinjiao (SP 6) were often selected. Zusanli (ST 36) is the He-Sea (earth) point of the Stomach Meridian of Foot-Yangming. It helps the acquired foundation and makes qi and blood have a source for their generation and transformation. Sanyinjiao (SP 6) is the crossing point of Three Yin Meridians of Foot. It reinforces the liver and kidney, strengthens the spleen and stomach and regulates qi and blood. The combination of the two points functions to regulate the spleen and stomach, replenish qi and blood and reinforce the liver and kidney.

The clinically selected 52 regular and extraordinary points showed that the acupoints of various meridians, arranged according to the frequency that they were

used, were ones of the Bladder Meridian (58, accounting for 24.2%), of the Stomach Meridian (40), of the Liver Meridian (34), of the Spleen Meridian (26), of the Conception Vessel (24), of the Large Intestine Meridian (14), of the Pericardium Meridian (14), of the Gallbladder Meridian (10), of the Governor Vessel (7), of the Lung Meridian (5), of the Kidney Meridian (4), of the Heart Meridian (2) and of the Triple Energizer Meridian (2). The acupoints located at various regions, arranged according to the order of frequency that they were used, were ones on the upper back (51, accounting for 21.3%), on the chest and epigastrium (47), on yang part of the leg (41), on yin part of the leg (30), on yin part of the arm (19), on yin part of the foot (11), on the lower abdomen (10), on the dorsum of hand (8), on the lower back (7), on yang part of the arm (6), on the head and neck (4), on the dorsum of foot (3) and on the palm (2).

The acupoints of the Bladder Meridian and on the upper back were often selected. They ranked as the highest frequency of use among the acupoints of various meridians. The mainly selected acupoints of the Bladder Meridian were Back-Shu points of Zang-fu organs. They are located close to the relevant viscera. Therefore, Back-Shu points can reflect and treat visceral diseases. Thus, acupoints related to viscera were often selected clinically, e.g. Feishu (BL 13), Ganshu (BL 18), Shenshu (BL 23), Xinshu (BL 15), Weishu (BL 21) and Pishu (BL 20).

Local points were often selected. *Jing Jin* (Muscle Region) Chapter of *Ling Shu* (Spiritual Pivot) states: "taking the tender point as acupoint", so Ashi points (painful regions) were often selected. In this article, cancer pain was often caused by lung, stomach and liver cancers and located at the chest and epigastrium. According to the individual pathology, Tiantu (CV 22) and Danzhong (CV 17) were often selected for lung cancer pain; Shangwan (CV 13) and Zhongwan (CV 12) for stomach cancer pain; Qimen (LR 14) and Zhangmen (LR 13), for liver cancer pain.

To sum up, acupoints on the chest (abdomen) and the back were used to treat the symptom. Ashi points (painful region) and Back-Shu points were selected to balance yin and yang, eliminate pathogenic qi, unblock meridians, resolve phlegm and stasis, (for the stimulus input) reach the affected part and reduce the tumor and its compression on nerves, thus producing

an analgesic effect. Back-Shu points are acupoints where qi of Zang-fu organs infuse into the back. Front-Mu points are acupoints through which qi of Zang-fu organs accumulate in the chest and abdomen. A combination of the two is called Back-Shu and Front-Mu points combination^[29]. Previous use of acupoints on the chest (abdomen) and the back for symptomatic treatment also means Back-Shu and Front-Mu points combination. The literature proposed that Ganshu (BL 18) and Qimen (LR 14) were selected for liver cancer pain; and Weishu (BL 21) and Zhongwan (CV 12) for stomach cancer pain. It is suggested that point combination should be further studied, e.g. a combination of Feishu (BL 13) and Zhongfu (LU 1) for lung cancer pain, a combination of Ganshu (BL 18) and Qimen (LR 14) for liver cancer pain and a combination of Weishu (BL 21) and Zhongwan (CV 12) for stomach cancer pain.

Combining local and along-meridian points and treating both the symptom and the cause were the principles of treatment for this disease. Acupoints on the lower limbs were clinically selected to treat the cause. Zusanli (ST 36) and sanyinjiao (SP 6) were selected to invigorate healthy qi, strengthen the spleen and stomach, tonify the liver and kidney, enrich qi and blood and improve body ability in combating disease. Modern studies have demonstrated that acupuncture at Zusanli (ST 36) can cause the changes in neurotransmitters, neurotransmitter receptors and the endocrine-immunological network. Although the changes are highly complex, the improvement of the immunologic function by acupuncture is consistent with the increase of 5-HT content and the decreases of 5-HT receptors and M receptor Rt value in the brain. It indicated that when analgesic effect produced by acupuncture, and the increase of 5-HT content in the brain, the immunologic function was strengthened^[30].

2.1.3 Characteristics of major point combinations

A comparison was made of every two pairs of acupoints that ranked in the top 8 frequencies of acupuncture-moxibustion treatment for cancer pain. The acupoints of which two were combined at a frequency of more than 50% were considered as the best combination, e.g. a combination of Zusanli (ST 36) and Sanyinjiao (SP 6).

2.2 Characteristics of therapeutic methods

Acupuncture-moxibustion treatments for cancer pain, arranged in the descending order, were

acupuncture (26), point injection^[2,3,13,21] (12), combination acupuncture and medicine^[4-9] (12), moxibustion^[13,18] (7), electroacupuncture^[12,22] (6), acupoint application^[14,23,26] (5), hand and foot acupuncture^[6,10,18,20] (5), ear acupuncture^[15,16] (4), acupuncture-moxibustion appliances^[7] (3) and cupping^[12] (1).

An analysis of the therapeutic methods showed that acupuncture was mainly used, and composite treatments were also administered. For acupuncture, an even reinforcing-reducing method or a reinforcing and reducing method was mainly used. Composite treatments were often the combination of acupuncture and Chinese herbal medicine or Western drugs (three-step therapy^[4,8,31]). Acupoint injection was also used. The data showed that 21.1% of the total cases were treated by combination with medication and also indicated that the combination of acupuncture and medicine was more effective than medication alone in treating cancer pain^[4-9].

3 Suggested Therapeutic Protocols

3.1 Therapeutic principles

The treatment principle is to reinforce healthy qi to eliminate pathogenic factors and unblock meridians to relieve pain.

3.2 Point selection

Acupoints selected in more than 15% of the papers on clinical reports, e.g. Zusanli (ST 36), Ashi points (painful region), Sanyinjiao (SP 6) and Neiguan (PC 6), can be used as effective points of reference for acupuncture-moxibustion treatment for cancer pain, and for systematic clinical studies. Zusanli (ST 36), Ashi points and Sanyinjiao (SP 6) were the three acupoints used most frequently to treat cancer pain. Zusanli (ST 36) and Sanyinjiao (SP 6) were also the best combined points. It proposed that these three acupoints are used as a basic prescription for acupuncture-moxibustion treatment of cancer pain and other acupoints are selected according to the syndrome.

3.2.1 Basic points

Zusanli (ST 36), Ashi points (painful region) and Sanyinjiao (SP 6).

3.2.2 Modification based on syndrome

Ashi points (painful region) are combined with related Back-Shu points, e.g. Feishu (BL 13),

Fengmen (BL 12), Tiantu (CV 22) and Danzhong (CV 17) are added for lung cancer pain to disperse lung qi, lower turbid qi and relieve cancer pain; Ganshu (BL 18), Qimen (LR 14), Zhangmen (LR 13) and Taichong (LR 3) are added for liver cancer pain to disperse stagnant liver qi, unblock meridians and relieve cancer pain; Weishu (BL 21), Pishu (BL 20), Shangwan (CV 13) and Zhongwan (CV 12) are added for stomach cancer pain to strengthen the spleen and stomach, replenish qi and blood, resolve blood stasis and relieve cancer pain.

To sum up, in recent years, the level of acupuncture studies on cancer pain continually rose to a small degree, but not much attention was paid. Clinical and individualized studies should be intensified. The principles of clinical treatment are combining local and along-meridian points and treating both the symptom and the cause. At present, more and more attention is being paid to the combined treatment of acupuncture and medicine for cancer pain. It combines acupuncture and medication, produces a dual analgesic effect, reduces analgesic dosage and reduces adverse reactions. Meanwhile, it strengthens the immunologic function of the patients, improves general symptoms and raises the quality of life.

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