Guo YF, Hu QL, Cai YY, *et al.* Observation of therapeutic effects of point application at Shenque (CV 8) plus moxa-salt hot compress for prevention of gastrointestinal adverse reactions after chemotherapy for non-Hodgkin lymphoma. J Acupunct Tuina Sci, 2018, 16(4): 248-252

DOI: https://doi.org/10.1007/s11726-018-1058-7

Clinical Study

Observation of therapeutic effects of point application at Shenque (CV 8) plus moxa-salt hot compress for prevention of gastrointestinal adverse reactions after chemotherapy for non-Hodgkin lymphoma

穴位贴敷神阙加艾盐热敷预防非霍奇金淋巴瘤化疗消化道不良反应效果观察

Guo Yan-fei (郭燕飞)¹, Hu Qun-ling (胡群玲)¹, Cai Yang-yang (蔡阳阳)², Fu Xiao-wei (傅晓炜)² 1 Dongyang People's Hospital, Zhejiang Province, Dongyang 322100, China

2 Zhejiang Tumor Hospital, Hangzhou 310022, China

Abstract

Objective: To observe the clinical efficacy of point application with *Da Huang* (*Rhizoma Rhei Cruda*) powder at Shenque (CV 8) plus moxa-salt hot compress on the umbilicus for preventing gastrointestinal adverse reactions after chemotherapy for non-Hodgkin lymphoma (NHL).

Methods: A total of 60 cases with NHL under chemotherapy were divided into two groups by hospitalization order, with 30 cases in each group. The control group was treated with routine nursing and the observation group was additionally given point application with *Da Huang* (*Rhizoma Rhei Cruda*) powder plus moxa-salt hot compress on the umbilicus, to compare the effect in preventing gastrointestinal adverse reactions after chemotherapy between the two groups.

Results: The occurrence rates of constipation, nausea, vomiting and poor appetite on the second day and fifth day after chemotherapy were obviously lower in the observation group than those in the control group, with statistically significant differences between the two groups (all *P*<0.05).

Conclusion: The point application with *Da Huang* (*Rhizoma Rhei Cruda*) powder plus maxa-salt hot compress on the umbilicus can produce more significant efficacy in preventing the gastrointestinal adverse reactions after chemotherapy for NHL than routine nursing. Moreover, it is simple and easy to be used and popularized.

Keywords: Point, Shenque (CV 8); Acupoint Therapy; Acupoint Sticking Therapy; Lymphoma, Non-Hodgkin; Chemoradiotherapy; Drug Therapy; Drug-related Side Effects and Adverse Reactions

【摘要】目的:观察生大黄粉贴敷神阙加艾盐包热敷脐部预防非霍奇金淋巴瘤(NHL)化疗后消化道不良反应的临床 疗效。方法:将60例NHL化疗患者按入院先后顺序分为两组,每组30例。对照组采用常规护理,观察组在常规护 理基础上采用生大黄粉贴敷神阙加艾盐热敷脐部治疗。比较两组预防化疗后消化道不良反应的效果。结果:观 察组化疗后第2天、第5天的便秘、恶心呕吐和食欲不振发生率均明显低于对照组,组间差异有统计学意义(均 P<0.05)。结论:生大黄粉贴敷神阙加艾盐热敷脐部预防NHL化疗后消化道不良反应的效果明显优于常规护理,且 方法简易,便于实施和推广。

【关键词】穴, 神阙; 穴位疗法; 穴位贴敷法; 淋巴瘤, 非霍奇金氏; 放化疗; 药物疗法; 药物相关的副作用和不良反应

【中图分类号】R246.1 【文献标志码】A

Chemotherapy is a main therapeutic methods for non-Hodgkin lymphoma (NHL), and the combination of cyclophosphamide, doxorubicin, vincristine and prednisone (CHOP) is the golden standard for NHL chemotherapy. It has been proven by several studies that chemotherapy has a high risk in inducing changes in gastrointestinal motility, mostly manifested by adverse reactions such as constipation, nausea, vomiting and poor appetite^[1-2]. If not intervened in time, abdominal pain, abdominal bloating, poor appetite, even dysphoria and anxiety would present, bringing sufferings to the patients and influencing the process of chemotherapy^[3-4]. Therefore, to prevent a series of gastrointestinal complications after chemotherapy for restoring gastrointestinal functions would play an

Author: Guo Yan-fei, bachelor, nurse-in-charge. E-mail: jxjai005@163.com

^{• 248 • | ©} Shanghai Research Institute of Acupuncture and Meridian 2018

important role in guaranteeing the successful completion of chemotherapy and reducing the patient's sufferings^[5-6]. Between January 2014 and August 2015, based upon the theories of meridian and blood circulation, and under the guidance of syndrome differentiation in Chinese medicine, we observed the therapeutic effects of external application of *Da Huang* (*Rhizoma Rhei Cruda*) powder plus moxa-salt hot compress on the umbilicus, i.e. a comprehensive external therapy combining the effects of acupoint and medication, for preventing the gastrointestinal adverse reactions after chemotherapy for NHL. Now, the report is given as follows.

1 Clinical Materials

1.1 Diagnostic criteria^[7]

Lymph nodes enlargement without pain; lump, pressure, infiltration or bleeding symptoms in the areas of digestive tract, skin, nasopharynx, bone marrow and nervous system; general symptoms such as fever, night sweating and body weight loss.

1.2 Inclusion criteria^[8]

NHL was confirmed by pathological examination; initial chemotherapy CHOP program was used and there were no constipation or organic intestinal diseases before the chemotherapy; no other methods or laxatives were used to promote defecation in the recent week.

1.3 Exclusion criteria

Those with constipation or gastrointestinal diseases; hepatic or renal dysfunctions; mental disorders; and those used other ways to promote defecation in the recent week.

1.4 Statistical methods

All data were input into Microsoft Excel software to establish the digital table. The SPSS version 20.0 statistical software was used for statistical analysis. The counting data were all expressed by ratio, and Chi-square test was used for comparison between the groups. The measurement data were expressed as mean \pm standard deviation ($\overline{x} \pm s$) and processed by *t*-test. *P*<0.05 indicated a statistically significant difference.

1.5 Participants

In this study, 60 patients treated in the Hematology Department of our hospital between January 2014 and August 2015 and in conformity with the inclusion criteria of NHL were selected. In accordance with the hospitalization order, the patients were divided into a control group (January to October 2014) and an observation group (November 2014 to August 2015), with 30 cases in each group. In the observation group, there were 19 males and 11 females, with age ranged from 24 to 72 years and an average of (58.4±12.7) years. In the control group, there were 18 males and 12 females, with age ranged from 26 to 71 years and an average of (60.3 ± 11.6) years. During the treatment, there was no dropout case. The differences in the gender and age were statistically insignificant between the two groups (all *P*>0.05), indicating that the two groups were comparable.

2 Methods

2.1 Control group

The patients in the control group received routine nursing: guide the patients to ingest soft food, more fresh fruits and vegetables, and ensure that they drink 2 000 mL water daily, and drink some honey water properly with empty stomach every morning; explain in details why chemotherapy may induce constipation and poor appetite, and supervise and help the patients to set up better eating and defecating habits, and teach the patients how to prevent the gastrointestinal adverse reactions after chemotherapy, such as jogging, hot compress and circular massage on the abdomen.

2.2 Observation group

Based upon the routine nursing for the control group, the patients in the observation group received point application of *Da Huang* (*Rhizoma Rhei Cruda*) powder plus moxa-salt hot compress on the umbilicus.

Preparation of *Da Huang* (*Rhizoma Rhei Cruda*) powder: *Da Huang* (*Rhizoma Rhei Cruda*) was powdered and sifted by 120-eye sieve and then sealed for storage. Each time, 3 g *Da Huang* (*Rhizoma Rhei Cruda*) powder was mixed with white vaseline into paste and then sealed into a summer-day plaster.

Preparation of moxa-salt bag: 100 g coarse salt (0.5 mm in diameter) was first mixed with 5 g moxa (five years) and then 400 g bigger coarse salt (0.5-0.9 cm in diameter) and then sealed into a cotton bag.

Method: On the first day of chemotherapy, after the skin of the acupoint area was disinfected by 75% alcohol, the above self-made herbal plaster with *Da Huang* (*Rhizoma Rhei Cruda*) was applied to Shenque (CV 8). The moxa-salt bag was heated to 50 °C in the thermostat and then put on the herbal plaster for hot compress, 20 min for each time and once a day. The herbal plaster was changed every day. The treatment was given continuously for 5 d.

3 Observation of Therapeutic Effects

3.1 Observed items

3.1.1 Occurrence rate of constipation

In reference to the diagnostic criteria of functional constipation in *Roma III Diagnostic Criteria: Functional Constipation*^[9]: (1) straining during at least 25% of defecations; (2) sensation of incomplete evacuation for at least 25% of defecations; (3) lumpy or hard stools in at least 25% of defecations; (4) sensation of anorectal

obstruction/blockage for at least 25% of defecations; (5) manual maneuvers to facilitate at least 25% of defecations; (6) <3 defecations per week. The diagnosis can be made with 2 or more symptoms.

3.1.2 Nausea and vomiting

In reference to World Health Organization (WHO) grading criteria for nausea and vomiting^[10]: no nausea and vomiting as grade 0; nausea but no vomiting without influence on normal food ingestion as grade I; vomiting 1-2 times/day, without influence on normal food ingestion and life, as grade II; vomiting 3-5 times/day, with obvious influence on food ingestion and daily life, treatment needed, as grade III; uncontrollable vomiting, >5 times/day, plus dehydration, as grade IV. Grade II and above could be diagnosed as nausea and vomiting.

3.1.3 Score of appetite

In reference to five-grade scoring method of quality of living (QOL) criteria for appetite^[11]: almost no food

ingestion as 1 point; <1/2 normal appetite as 2 points; 1/2 normal appetite as 3 points; slightly less appetite as 4 points; normal appetite as 5 points. <4 points could be judged as poor appetite.

Respectively on the first day, third day and fifth day of chemotherapy, the above items were observed and assessed.

3.2 Results

On the first day of chemotherapy, there were no significant differences in the occurrence rates of constipation, nausea, vomiting and poor appetite between the two groups (all P>0.05). On the second day and fifth day of chemotherapy, the occurrence rates of constipation, nausea, vomiting, and poor appetite were obviously lower in the observation group than those in the control group, with statistically significant differences between the two groups (all P<0.05), (Table 1).

 Table1. Comparison of the occurrence of gastrointestinal adverse reactions between the two groups during chemotherapy (case)

Group		Constipation			Nausea and vomiting			Poor appetite		
	<i>n</i> –	1st day	2nd day	5th day	1st day	2nd day	5th day	1st day	2nd day	5th day
Observation	30	4	3	3	6	5	1	8	8	3
Control	30	6	10	13	8	10	12	7	12	11
x^2 -value		0.807	3.629	5.195	0.590	2.937	7.616	0.338	2.781	6.294
P-value		0.253	0.003	0.000	0.476	0.025	0.000	0.726	0.035	0.000

4 Discussion

The heavy mental burden, and even fear and anxiety due to fear of chemotherapy can induce poor sleep and inhibition in gastrointestinal peristalsis and absorption, resulting in adverse reactions such as poor appetite, nausea, vomiting and difficult defecation. In some patients after chemotherapy, because of obvious adverse reactions of nausea and vomiting, fluid is lost inside the body and food ingestion is reduced, causing dry stool and constipation. At the same time, in order to gastrointestinal prevent the reactions after chemotherapy, 5-HT₃ antagonists such as granisetron hydrochloride and ondansetron are used to inhibit the gastrointestinal peristalsis, further aggravate the poor appetite and constipation. It is reported in the relevant literature that the occurrence rate of constipation after chemotherapy is 31%, ant the occurrence rate of nausea and vomiting is 19%-33%^[12-13]. It is believed in Chinese medicine that chemotherapies used in tumor patients can kill tumor cells to realize the goal to expel and eliminate the pathogenic toxin, but it can also damage the spleen and stomach, leading to reverse ascension of the stomach gi and insufficiency of gi and blood, depletion of the primary energy of the lower jiao, lack of fluid in the intestines and weak function in

transportation. Simultaneously, it consumes and damages body fluid, causing lack of moisture in the intestines and hard stool, hence constipation.

Mostly the herbal drugs with bitter, cold and purgative property are selected for point application at Shenque (CV 8). Da Huang (Rhizoma Rhei Cruda) is in bitter and cold property and has the effects to promote purgation and bowel movements, digest food and eliminate distension, clean up the intestines and stomach, and assist the digestion of water and food^[14-15]. Shenque (CV 8) is located at the naval. Anatomically, horny layer of epidermis in the navel is the thinnest, without fat underneath the navel. After external application of herbal drugs on the navel, it is easy to penetrate internally to display the therapeutic role^[16-19]. Based upon this, moxa-salt is added for hot compress on the navel, in order to improve the local blood circulation by heat and promote penetration and quick absorption of herbal drugs and moxibustion effect. Generally speaking, external application of Da Huang (Rhizoma Rhei Cruda) plus moxa-salt hot compress can display the dual functions of acupoint and herbal drug, for improving micro-circulation and promoting the peristalsis of the stomach and intestine, so as to reduce the adverse reactions in the digestive tract^[20].

In this study, the patients were informed of the therapeutic purpose and precautions before the treatment and asked to empty the bladder and to keep warm in winter. The patients were also asked about their allergy history. During the external application on the navel, it is necessary to observe if herbal drugs and plaster cause allergy at any moment. If itchy skin and red rash occur in the local area, it is necessary to stop treatment immediately. The herbal drugs should be prepared and used on the spot and changed on time, in order to ensure the therapeutic effects. It is necessary to keep ventilation in the clinic during hot compress. But it is necessary to keep warm, to avoid catching cold in the abdomen. At the same time, it is necessary to pay attention to the temperature of hot compress, which should not be over 50 $^\circ C$ but can cause blush will be appropriate. During hot compress, the patients must be told to keep the original body position and even respiration, and must tell the nurse to manage immediately if there is burning hot, both to avoid burns. After hot compress, the patients should be told to lie quietly for 30 min, to avoid catching wind and cold, and not to wash the hands with cold water or to take a shower, in order to avoid invasion of external pathogens. Before moxa-salt hot compress, the patients should be enquired about their food ingestion, in order to avoid over full or hunger. During hot compress, the patients should be told to take light and digestible food and avoid uncooked, cold, spicy and greasy food^[21].

It has been shown by the findings of this study that the occurrence rates of constipation, nausea, vomiting and poor appetite on the second day and fifth day of chemotherapy were obviously lower in the observation group than in the control group, with statistically significant differences between the groups (all P < 0.05), indicating that point application of Da Huang (Rhizoma Rhei Cruda) powder at Shenque (CV 8) plus moxa-salt hot compress on the navel based upon the routine nursing can effectively prevent constipation, poor appetite, nausea and vomiting induced bv chemotherapy in NHL patients. Moreover, this therapy is low in cost, painless and non-traumatic, reliable in the therapeutic effects, and characterized by the patient's good compliance, and thus needs to be clinically popularized.

Conflict of Interest

The authors declared that there was no potential conflict of interest in this article.

Statement of Informed Consent

Informed consent was obtained from all individual participants included in this study.

Received: 25 October 2017/Accepted: 29 November 2017

References

- [1] Xiong WJ, Li H, Liu HM, Yi SH, Li ZJ, Lü R, Liu W, Zou DH, Qiu LG Divergence analysis of hepatitis virus infection between aggressive and indolent B cell non-Hodgkin's lymphoma. Zhonguo Shiyan Xueyexue Zazhi, 2016, 24(6): 1754-1758.
- [2] Zhang Y, Xu N, Dong BJ, Song G, Li QH, An G, Ai XF. Diagnostic significance of BIOMED-2 standardized gene rearrangement system in patients with non-Hodgkin's lymphoma. Zhonguo Shiyan Xueyexue Zazhi, 2017, 25(1): 115-119.
- [3] Wang XQ, Fang BM, Jiang JH, Qu ZG, Liu YH, Ma GL, Yu K. Clinical efficacy and safety of thalidomide combined with CHOP regiment in the treatment of aggressive non-Hodgkin's lymphoma. Zhongguo Linchuang Yaolixue Zazhi, 2015, 31(16): 1588-1590.
- [4] Dong F, Sui AX, Jing HM. Expression of lactate dehydrogenase-5 in non-Hodgkin lymphoma and its clinical significance. Zhongnan Daxue Xuebao (Yixue Ban), 2016, 41(12): 1312-1316.
- [5] Yang XL, Wu YM, Cao YB, Li XH, Xu LX, Liu ZY, Liu B, Yan B, Li SW, Da WM, Wu XX. Clinical efficacy of autologous hematopoietic stem cell transplantation using tumor-ablative conditioning regimen for patients with refractory-relapsed non-Hodgkin's lymphoma. Zhongguo Shiyan Xueyexue Zazhi, 2016, 24(6): 1743-1747.
- [6] Zhang YP, Zhou XH, Zhang L, Ma GL. Rituximab combined with CHOP chemotherapy regimen in the treatment of relapsing non-Hodgkin's lymphoma. Zhongguo Linchuang Yaolixue Zazhi, 2015, 31(12): 1109-1111.
- [7] Tang Y, Wang W, Gao L, Sun Y, Gao YY, Zhang CX, Gong M, Huang FZ, Li ZL, Ma YG Application of cytogenetic test for diagnosis of bone marrow involvement in patients with non-Hodgkin's lymphoma. Zhongguo Shiyan Xueyexue Zazhi, 2016, 24(3): 727-732.
- [8] Jiang L, Zhu ZM, Zhou F, Yuan XL. miR-125b targets Sema4C regulating invasion and migration of non-Hodgkin's lymphoma by STAT3 signaling pathway involved. Zhongguo Mianyixue Zazhi, 2017, 33(7): 1018-1022, 1028.
- [9] Zhang D, Xia ZW. Rome III diagnostic criteria: functional constipation. Zhongguo Yikan, 2008, 43(12): 63-64.
- [10] Osoba D, Zee B, Pater J, Warr D, Latreille J, Kaizer L. Determinants of postchemotherapy nausca and vomiting in patients with cancer. Quality of Life and Symptom Control Committees of the National Cancer Institute of Canada Clinical Trials Group. J Clin Oncol, 1997, 15(1): 116-123.
- [11] Zhang TZ, Xu GW. Oncology. 2nd Edition. Tianjin: Tianjin Science and Technology Press, 1996: 2638.
- [12] Ping LY, Song YQ, Zheng W, Wang XP, Xie Y, Lin NJ, Tu MF, Ying ZT, Liu WP. Efficacy and survival analysis of DICE regimen for 97 patients with relapsed or refractory non-Hodgkin's lymphoma. Zhonghua Xueyexue Zazhi, 2016, 37(9): 790-794.
- [13] Yao ZH, Wu CF, Liu WG, Ren ZQ, Liu Y, Zhan XX, Guo LM. Pharmaceutical care of 1 case of pulmonary infection after radiochemotherapy for non-Hodgkin's lymphoma. Yiyao Daobao, 2016, 35(2): 200-202.

- [14] Guo J, Zhu YP, Gao J, Li Q, Jian CS, Zhou CY, Guo X. Clinical and prognostic analysis of 43 children with mature B-cell non-Hodgkin's lymphoma/acute lymphoblastic leukemia. Zhongguo Shiyan Xueyexue Zazhi, 2016, 24(1): 72-79.
- [15] Lin JF, Zeng ZY, Yang AP, Zheng L, Chen JM. Effect of complicated hemophagocytic syndrome on clinical prognosis of patients with non-Hodgkin's lymphoma and analysis of its affecting factors. Zhongguo Shiyan Xueyexue Zazhi, 2017, 25(4): 1042-1046.
- [16] Chen X, Wang H, Zhang Y, Shen L, Liu QR, Liu HT, Chai T, Xu Q, Fu Y. Therapeutic effects of individualized grouping treatment for senile non-Hodgkin's lymphoma. Zhongguo Laonianxue Zazhi, 2015, 35(11): 3018-3019.
- [17] Hu CJ, Wang YJ. Clinical observations on moxibustion plus acupoint application for the prevention and treatment of gastrointestinal reactions during chemotherapy for breast cancer. Shanghai Zhenjiu Zazhi, 2016, 35(10): 1219-1221.

- [18] Pang GS, Chen ZL. Therapeutic observation of acupuncture plus turtle-shell-partitioned moxibustion for diarrhea-predominant irritable bowel syndrome. J Acupunct Tuina Sci, 2016, 14(1): 22-25.
- [19] Hong JN, Cai YH. Therapeutic observation of hot application with moxa-salt pack for diarrhea due to chemotherapy with irinotecan. Shanghai Zhenjiu Zazhi, 2016, 35(2): 144-145.
- [20] Xu LY, Liu ZH, Li W, Gao YT. Expression and significance of CCL22, IL-10 and FOXP3 in tissues of B-cell non-Hodgkin's lymphoma. Shandong Yiyao, 2015, 35(14): 59-61.
- [21] Li Y, Li MJ, Lian M. Efficacy of rituximab combined with CHOP chemotherapy for 35 patients with aggressive B cell non-Hodgkin's lymphoma. Zhongguo Shenghua Yaowu Zazhi, 2015, 35(12): 168-170.

Translator: Huang Guo-qi (黄国琪)