

Research Progress on Hyperemesis Gravidarum in Traditional Chinese Medicine

Song Li^{1,a}, Zhang Yanxia^{2,b,*}

¹Shaanxi University of Chinese Medicine, Xianyang, Shaanxi, 712046, China

²The Second Affiliated Hospital of Shaanxi University of Chinese Medicine, Xianyang, Shaanxi, 712046, China

^a2311772536@qq.com, ^b1464638423@qq.com

*Corresponding author

Abstract: Vomiting during pregnancy is currently one of the causes of hospitalization in early pregnancy patients, with severe nausea, vomiting, dizziness, and anorexia, and even vomiting after ingestion being the main clinical symptoms. In recent years, Western medicine still adopts routine fluid replacement and nutritional support, as well as treatment methods such as antiemetic and ketone lowering. Although it can temporarily improve the clinical manifestations of patients, the recurrence rate is high and seriously reduces the quality of life of patients. On the basis of traditional Chinese medicine theory, traditional Chinese medicine has proposed specific dialectical treatment plans for hyperemesis gravidarum, with excellent clinical results. This article will explore the treatment of hyperemesis gravidarum based on traditional Chinese medicine syndrome differentiation, summarize the strategies and research progress of traditional Chinese medicine in treating hyperemesis gravidarum, and provide a certain reference basis for future clinical treatment.

Keywords: Hyperemesis gravidarum; Traditional Chinese Medicine; Treatment according to syndrome differentiation

1. Introduction

Hyperemesis gravidarum refers to severe nausea, vomiting, dizziness, anorexia, and even immediate vomiting during early pregnancy, with an incidence rate of 0.3%~3%. It is the common reason for hospitalization in early pregnancy, second only to threatened abortion, and the second reason for hospitalization [1]. It first appeared in the fourth week of pregnancy, and it was most obvious in the ninth week of pregnancy. 60% of the patients recovered naturally after the twelfth week of pregnancy, and about 10% of the patients continued the whole pregnancy, which seriously affected the quality of life of pregnant women and the normal development of the fetus, as shown in Table 1. Clinically, the main symptoms are persistent nausea and vomiting, which makes pregnant women unable to maintain their body nutrition, resulting in severe dehydration, electrolyte imbalance, ketosis and even acidosis [1]. In traditional Chinese medicine, the pathogenesis is generally that the qi is rushing upward, and the stomach is out of harmony. Traditional Chinese medicine mostly adopts the treatment methods of invigorating spleen and benefiting qi, harmonizing the stomach and lowering the evil, and nourishing the liver and kidney [2]. This article reviews the research progress on the differentiation and treatment of hyperemesis gravidarum in traditional Chinese medicine.

Table 1: The difference between vomiting during pregnancy and hyperemesis gravidarum

Vomiting during pregnancy	Hyperemesis gravidarum
Nausea, sometimes accompanied by vomiting	Nausea accompanied by severe vomiting
Nausea disappears within 12 weeks or less	Nausea persists
Will not cause severe dehydration	Will cause severe dehydration
Lack of appetite	Inability to eat

2. Western Medicine's Understanding of Hyperemesis Gravidarum

Hyperemesis gravidarum: The main clinical manifestations are frequent vomiting, dehydration, weight loss of more than 5% compared with pre-pregnancy, and emergence of urine ketone bodies,

which must be paid attention to and actively treated, otherwise it will seriously lead to the death of pregnant women. The pathogenesis of hyperemesis gravidarum may be related to β -HCG, estrogen, progesterone, placental serotonin, thyroxine, prolactin, etc. Among them, β -HCG is considered to be the most relevant hormone for the pathological occurrence of hyperemesis gravidarum. Some studies have found that the time when the early pregnancy reaction appears and disappears is consistent with the time when the blood HCG value of pregnant women rises and falls [3]. The occurrence of hyperemesis gravidarum is also related to the mental emotion and social factors of pregnant women, as well as the lack of vitamin B6 and genetic susceptibility. In treatment, western medicine takes supplementing nutrition, correcting water and electrolyte disorders and acid-base imbalance, stopping vomiting and preventing complications as the treatment principles, and at the same time gives patients corresponding psychological treatment. Although it can temporarily improve patients' clinical manifestations, its recurrence is high, which seriously reduces patients' quality of life and increases their psychological pressure, and even has a tendency to commit suicide.

3. Chinese Medicine's Understanding of Malignant Hyperemesis Gravidarum

The record of hyperemesis gravidarum began in "Jingui Yaolue Women's Pregnancy Syndrome and Treatment": "Pregnancy vomiting does not stop, and Dried ginger and ginseng *Pinellia ternata* is the main one." "On the Pathogens of Diseases and Stagnation of Obstruction" put forward the name of the disease of obstruction for the first time, and pointed out that "this is caused by the deficiency of the woman's yuán, insufficient blood gas's weak kidney qi, and when the wind is too cold to drink, there is phlegm and water under her heart, and there is also pregnancy." On the volume of "The Method of Fetal Birth and Heart", I said, "Those who are obstructed by evil are said to have fetal qi, and nausea hinders their diet. Pregnancy is timid, and if you have phlegm in the middle of the stomach, you will get sick. Your heart is angry, you vomit phlegm, your chest and diaphragm are full, and you can't support it. This is all because your stomach is weak and you have phlegm and qi stagnation." The main pathogenesis of hyperemesis gravidarum in traditional Chinese medicine is summarized as qi rushing upward and stomach losing and descending. Common causes include weakness of spleen and stomach and disharmony between liver and stomach. If the disease progresses gradually, it can develop into severe obstruction of both qi and yin. The main therapeutic principles are: calming the stomach and stopping vomiting, strengthening the spleen and harmonizing the stomach for those with spleen and stomach weakness, and soothing the liver and stomach for those with liver-stomach disharmony [4].

Traditional Chinese medicine believes that vomiting is easy to hurt qi and vomiting is easy to hurt yin. If a pregnant woman vomits for a long time, it will lead to deficiency of both qi and yin. If pregnant women have insufficient stomach yin, they will vomit due to lack of stomach nourishment, and long-term vomiting will lead to insufficient stomach yin. The two are mutually causal, making them dry and nauseous without yin, which will eventually lead to serious yin deficiency and essence and qi dissipation. Deficiency of both qi and yin is a severe type of hyperemesis gravidarum, which can hurt the fetus. In addition, if pregnant women are physically weak, their qi and blood and kidney qi are insufficient, and eating too cold can make their hearts moist and cause vomiting [4]. Fu Qingzhu Gynecology holds that "the liver blood is too dry", "the liver is anxious, and the fire moves against it", "therefore, it is necessary to strengthen the spleen and stimulate the appetite in calming the liver and enriching the blood". According to the traditional Chinese medicine, hyperemesis gravidarum is "seeing the disease of the liver, knowing that the liver transmits the spleen", and the occurrence of this disease is closely related to the liver. In *Jing Yue Quan Shu*, it is said: "All evil obstacles are mostly due to spleen deficiency and qi stagnation, but they are also true in essence. However, if you are pregnant suddenly, you will rush to the upper chamber, so that your qi will not go down, which will lead to vomiting and other symptoms." This illustrates that liver depression invading spleen is the main pathogenesis leading to hyperemesis gravidarum. The disharmony between liver and stomach is the main reason for women's menstrual blood not diarrhea and yin blood gathering. The yin of the liver uses yang, so the excessive liver qi can distribute the liver qi in the chest and hypochondrium and sandwich the stomach through the diaphragm. Therefore, whether the liver qi is depressed or the fire is strong, it can lead to the liver qi invading the stomach, which leads to the symptoms of nausea [4]. The "Women's Complete Prescription" states: "Vomiting during pregnancy, aversion to food, tiredness and lying down, this stomach is qi-deficient and evil-blocking". Symptoms such as nausea and vomiting after pregnancy are closely related to the weakness of the spleen and stomach of pregnant women. After conception, women's menstrual blood stops, and the blood gathers and rushes to raise the fetus. The uterus is solid and the pulse is strong. Pulse-rushing originates from the uterus and originates from Yangming, while pulse-rushing and qi-choking will lead to stomach attack through the abdomen. If

pregnant women are deficient in stomach-qi, they will suffer from nausea and vomiting due to stomach-qi-rushing and qi-choking. To sum up, Chinese medicine believes that the occurrence of this disease is mainly attributed to the liver, spleen and stomach, weakness of spleen and stomach, disharmony between liver and stomach, stagnation of phlegm and yin, deficiency of both qi and yin, which leads to the upward movement of qi, and the disharmony of stomach is reduced to the basic etiology and pathogenesis. Treatment should be based on strengthening the spleen, soothing the liver, harmonizing the stomach, and calming down the adverse events [5].

4. Current status of clinical research on hyperemesis gravidarum in traditional Chinese medicine

In recent years, many doctors have proposed different treatment methods for patients with hyperemesis gravidarum in clinical practice. Li Yuling et al. made Chinese medicine granules (Fructus Amomi, Fructus Ligustri Lucidi, and Herba Taxilli 20g each) and ginger juice into acupoint patches and applied them to Neiguan and Zhongwan points on both sides, and at the same time, they gave nutritional support for fluid replacement, life guidance, emotional care, etc. to treat patients with hyperemesis gravidarum due to spleen and stomach weakness, thus achieving good effects of strengthening spleen and stomach, reducing adverse reactions and stopping vomiting [6]. Ma Caiyin and others used routine western medicine treatment combined with thunder-fire moxibustion of traditional Chinese medicine to warm the meridians at Zhongguan and Tsusanli points to treat hyperemesis gravidarum with spleen-stomach weakness, and the effective rate was as high as 97.5% [7]. Wen Leping applied wheat moxibustion at Neiguan, Zhongguan and Tsusanli points to the liver, spleen, stomach, Shenmen and sympathetic area behind the ear for 6 days. The patient's urine ketone body was obviously improved, and the clinical symptoms such as nausea and vomiting were also obviously alleviated. It was easy to operate and economical, which could improve the quality of life of patients [8]. Liang Guanshuang and others used acupuncture to keep acupuncture at Zhongguan, Neiguan, Pishu, Xiawan, Gongsun, Tsusanli and Weishu points for 25 minutes, and combined with Hercules sparrow to peck at Jianli, Zhongguan, Pishu and Weishu points for 7 days as a course of treatment. The statistical analysis results show that it can effectively relieve the clinical symptoms of patients [9]. Traditional Chinese medicine syndrome differentiation belongs to patients with severe vomiting during pregnancy caused by spleen and stomach weakness. Song Hongyan and others mainly adopt the reinforcing method of reinforcing and reducing balanced massage combined with acupoint application of traditional Chinese medicine (Amomum villosum, Jiang Banxia, Perilla frutescens, and Jiang Zhuru), which has achieved good results [10]. Yang Shao and others treat hyperemesis gravidarum with modified Guizhi decoction combined with acupoint application at Shenque, Neiguan, Zhongguan and Tsusanli, which can effectively improve the clinical symptoms such as nausea and vomiting [11]. In view of the clinical syndrome differentiation of pregnancy with spleen and stomach weakness, Yu Beibei and others, under the condition of routine western medicine treatment and psychological intervention, applied traditional Chinese medicine decoction Anwei Yin (Pogostemon rugosa, Amomum villosum, Magnolia officinalis, Poria, bamboo shavings, Platycodon grandiflorum, Pinellia ternata, Pericarpium Citri Tangerinae and ginger juice) combined with pressing acupuncture at Tsusanli, Shenmen, Neiguan and Yintang points, which can obviously improve the clinical symptoms of patients [12]. Wang Chenchen and others applied Xiangsha Liujunzi to Neiguan, Zhongwan and Zusanli points for the patients with hyperemesis gravidarum obstruction of spleen and stomach weakness, and applied it at the right time according to the meridian stream. It was applied at 4: 00 in the morning or at 9: 00 in the afternoon, twice a day, and three days was a course of treatment. The results showed that the symptoms of the patients were effectively relieved, and the recurrence rate was low, which was economical and practical, and relieved the pain of the patients [13]. Zhou Maoxi was included in the patients with clinical hyperemesis gravidarum due to spleen and stomach weakness, and was given a self-made Pregnancy Antiemetic Decoction (Codonopsis pilosula, Amomum villosum, Schisandra chinensis, Poria, Rhizoma Phragmitis, Radix Aucklandiae, Pericarpium Citri Tangerinae, Folium Eriobotryae, Jiang Banxia and Glycyrrhiza uralensis Fisch) to strengthen the spleen and regulate the stomach, reduce adverse reactions and stop vomiting, and was applied to Zhongguan, Ganshu, Tsusanli, Weishu, Shenque and Neiguan points in coordination with acupoints [14]. According to clinical experience, zhangyan and others give routine fluid replacement, maintaining electrolyte balance and nutritional support to patients with hyperemesis gravidarum due to spleen and stomach weakness, and at the same time, they also use acupuncture therapy, which is easy to operate, has little side effects and obvious clinical effect, and can effectively improve patients' vomiting symptoms [15]. Chen Hui applied anti-aircraft antiemetic plaster to Zhongwan, Neiguan and other points every day, combined with cupping at Zhongwan for 10~15min. The results showed that it could effectively improve the clinical symptoms of patients, and the effective rate was as high as 95% [16]. Li Shuangshuang et al. treated the patients with hyperemesis gravidarum of spleen and stomach weakness syndrome according to TCM syndrome differentiation, and the results showed that the effective rate

was 98%, and the sleep quality and quality of life of the patients were improved to some extent ^[17].

Wang Hui et al. for the patients with clinical syndrome differentiation of liver-stomach disharmony type hyperemesis gravidarum, they were treated with routine fluid infusion plus acupoint application of Shangwan, Zhongwan and other points combined with auricular point seed embedding. As a result, the effective rate was significantly higher than that of the simple fluid infusion treatment group, and the clinical symptoms were better relieved ^[18]. Fan Zeling and others used orange peel and bamboo shavings soup to add flavor, while calcined oysters and lotus root knots were added to vomit with blood. If the chest and hypochondrium are full, Magnolia Officinalis and Agastaches will be added; Coptidis Rhizoma and Folium Perillae are added if you are upset and impatient; Five cases of upset and fever were treated with Schisandra chinensis, Ophiopogon japonicus and Polygonatum odoratum, and then combined with acupoint application of bilateral Neiguan points to treat the patients with hyperemesis gravidarum due to disharmony between liver and stomach. The results showed that the clinical symptoms of the patients were effectively alleviated and the growth and development of the fetus were facilitated ^[19]. Zhou Maoxi included 60 patients with clinical syndrome differentiation, who were randomly divided into the control group and the treatment group. The control group was treated with routine fluid replacement, electrolyte balance maintenance and nutritional support, while the treatment group was treated with Su Huang Zhitu Tang foot bath for half an hour combined with acupoint application at Neiguan, Taichong, Zusanli and Zhongwan. Results The total effective rate of the treatment group was significantly higher than that of the control group, and the clinical recurrence rate was significantly reduced ^[20]. Wen Lijuan et al. used 100mg of vitamin B 6 to inject into Neiguan point once every other day to treat patients with hyperemesis gravidarum due to disharmony between liver and stomach. The clinical effective rate was as high as 91.43%, and the operation was simple, the cost was low, and the drug effect could be exerted faster ^[21]. Song Hongyan et al. treated the patients with hyperemesis gravidarum due to disharmony between liver and stomach with the purgative method of reinforcing-reducing balanced massage combined with acupoint application of traditional Chinese medicine at Neiguan, Zhongwan and Zusanli. The results showed that it had obvious advantages in improving the clinical symptoms of patients ^[10]. Zhang Shuang et al. used Xiaobanxia Tang combined with acupoint application to treat patients with severe vomiting during pregnancy and disharmony between the liver and stomach. The results showed that the symptoms of nausea and vomiting in the patients were significantly relieved, and the levels of urinary ketone bodies in the patients were also effectively reduced ^[22]. Zhang Li application of oral liver-suppressing and stomach-regulating drinks (Scutellaria baicalensis Georgi, Coptidis Rhizoma, bamboo shavings, perilla leaf, ginger, Uncaria rhynchophylla and dried tangerine peel) and acupoint application (Atractylodes macrocephala, Amomum villosum, Codonopsis pilosula, bamboo shavings, dried tangerine peel, Pinellia Preparata, perilla stem and ginger juice) can effectively relieve symptoms such as nausea and vomiting ^[23]. Ni Jiaofang and others applied Chinese medicine (Amomum villosum, Taxillium, Ligustrum lucidum) to Zhongwan, Neiguan, Taichong and Yanglingquan points at 7:00 a. m. in combination with intravenous rehydration therapy, with a total effective rate of 95% and a low recurrence rate within half a month ^[24]. When Lin Lina et al. treated the patients with disharmony between liver and stomach due to hyperemesis gravidarum, they used intravenous rehydration, Chinese herbs (perilla leaf, Jiang Banxia, Radix Paeoniae Alba preparata, Rhizoma Coptidis, Rhizoma Zingiberis Zhuru, Pericarpium Citri Reticulatae, and Fructus Citri Sarcodactylis tablets) to suppress the liver and stomach, and the clinical symptoms of the patients were significantly improved ^[25]. Chen Xiangyi and others applied Heweiantai ointment (Radix Codonopsis, Flos Caryophylli, Pericarpium Citri Tangerinae, Rhizoma Coptidis, and Zhuru) to Shenque point to treat hyperemesis gravidarum due to disharmony between liver and stomach. The results showed that it had better curative effect than simply rehydration therapy, and the time of vomiting disappearing, urine ketone body turning negative, medication time and hospitalization time were shorter than those simply rehydration therapy ^[26]. Shang Guihua and others used Jiawei Sini Powder (Rhizoma Atractylodis for those with thick and greasy fur and dampness; Fried atractylodes and yam are added for patients with spleen deficiency; Pogostemon and Fructus Amomi Rotundus are added for vomiting; Ophiopogon japonicus and Dendrobium officinale are added for patients with dry mouth and red tongue; The combination of acupuncture and moxibustion at Gongsun point, Zusanli point in Neiguan and Yanglingquan point has obvious curative effect, no side effects on the mother and fetus, and short treatment time, which is worthy of clinical application ^[27].

Feng Hua et al. randomly divided 78 cases of hyperemesis gravidarum due to deficiency of both qi and yin into two groups. The control group was given symptomatic treatment by western medicine, while the treatment group was given symptomatic treatment by western medicine combined with rectal drip of Shengmai Decoction and Zengye Decoction. Results: The curative effect of the treatment group was obviously better than that of the simple control group, which could obviously shorten the treatment time ^[28]. Peng Guixiu et al. used moxibustion along ren meridian for 5 minutes, and then gently suspended moxibustion at Zhongwan and Shenque points. After continuous treatment for 1 month, the symptoms of the patients improved and there was no recurrence ^[5]. Wang Dongying and others

summarized Lingnan Roche's experience in treating hyperemesis gravidarum. According to Lingnan climate, region and Lingnan people's physical characteristics, Lingnan Roche treated severe patients with deficiency of both qi and yin by supplementing qi and nourishing yin, stabilizing fetus, and adding and subtracting Shengmai drink to achieve the effects of supplementing qi and promoting fluid production, calming the nerves and stopping vomiting [29]. For the patients with deficiency of both qi and yin due to hyperemesis gravidarum, Yang Weiling and others are taking Chinese medicines (Radix Codonopsis, Radix Scrophulariae, Inula, Fructus Schisandrae, Radix Rehmanniae, Radix Ophiopogonis, Orange Peel, Rhizoma Coptidis, and Folium Perillae) orally, and at the same time injecting vitamins B 1, B 6 and B 12 at Neiguan and Zusanli points [30].

5. Conclusion and prospect

Hyperemesis gravidarum is a common clinical disease. Generally, people with mild symptoms can often heal themselves, but those who are repeatedly difficult to heal or become more serious must be paid attention to. Vomiting can not only cause water and electrolyte disorder, acid-base imbalance, urine ketone body elevation, acidosis and weight loss, but also hinder the normal development of the fetus and the possibility of miscarriage. More seriously, it can make pregnant women life-threatening. Western medicine uses fasting, fluid replacement, correction of water and electrolyte disorders, and reduction of ketosis to support patients with hyperemesis gravidarum, but its curative effect is poor and it is easy to recur, which seriously affects the quality of life of patients and brings great psychological pressure to patients and their families. According to the basic theory of traditional Chinese medicine, the traditional Chinese medicine adopts the method of dialectical implementation, and the internal treatment and external treatment are tailored to the symptoms, which has achieved good clinical results and is acceptable to patients. At the same time, it has its unique effect on improving patients' quality of life and relieving mental stress. Traditional Chinese medical treatment has a long history, is simple and convenient, and is based on the principle of "seeking the root of the disease" from the concept of diagnosis and treatment, so it plays an irreplaceable role in treating hyperemesis gravidarum. It is expected that in the future, the treatment of hyperemesis gravidarum can be combined with the basic theory of traditional Chinese medicine, and appropriate dialectical treatment can be carried out to give patients the whole course of Chinese medicine treatment.

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