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Efficacy of acupoint herbal patching combined with intravenous rehydration for hyperemesis gravidarum: A retrospective cohort study

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Abstract

This retrospective cohort study evaluated the efficacy of acupoint herbal patching combined with intravenous rehydration for hyperemesis gravidarum with Spleen-Stomach Deficiency. Data from 64 hospitalized pregnant women (December 2022–December 2024) were analyzed. Patients were divided into a control group (intravenous rehydration alone, n=32) and a treatment group (intravenous rehydration plus acupoint herbal patching, n=32). Outcomes included Traditional Chinese Medicine symptom scores, Pregnancy-Unique Quantification of Emesis scores, Quality of Life scores, ketonuria resolution, and hospital stay. Both groups showed significant improvement. However, the treatment group demonstrated superior reductions in Traditional Chinese Medicine symptom scores, Pregnancy-Unique Quantification of Emesis scores, and Quality of Life scores compared to controls ($P<0.05$). Additionally, the treatment group experienced faster urinary ketone negativity, shorter hospitalization, and higher total efficacy ($P<0.05$). No severe adverse events occurred. Acupoint herbal patching combined with intravenous rehydration significantly alleviates symptoms, shortens recovery, and improves quality of life in hyperemesis gravidarum patients with Spleen-Stomach Deficiency, suggesting its value as a safe adjunctive therapy. *(Afr J Reprod Health 2026; 30 [10]: 104-113).*

Keywords: Acupoint Herbal Patching; Hyperemesis Gravidarum; Spleen-Stomach Deficiency; Traditional Chinese Medicine; Clinical Efficacy; Retrospective Cohort Stud

Résumé

Cette étude de cohorte rétrospective a évalué l'efficacité de l'application de patchs aux herbes sur les points d'acupuncture combinée à une réhydratation intraveineuse pour l'hyperémèse gravidique avec déficit de la rate et de l'estomac. Les données de 64 femmes enceintes hospitalisées (décembre 2022–décembre 2024) ont été analysées. Les patientes ont été divisées en un groupe témoin (réhydratation intraveineuse seule, n=32) et un groupe de traitement (réhydratation intraveineuse plus patchs aux herbes, n=32). Les critères d'évaluation comprenaient les scores des symptômes de la médecine traditionnelle chinoise, les scores PUQE (Pregnancy-Unique Quantification of Emesis), les scores de qualité de vie, la résolution de la cétonurie et la durée du séjour à l'hôpital. Les deux groupes ont montré une amélioration significative. Cependant, le groupe de traitement a démontré des réductions supérieures des scores de symptômes, des scores PUQE et des scores de qualité de vie par rapport aux témoins ($P<0,05$). De plus, le groupe de traitement a connu une négativation plus rapide de la cétone urinaire, une hospitalisation plus courte et une efficacité totale plus élevée ($P<0,05$). Aucun événement indésirable grave ne s'est produit. L'application de patchs aux herbes combinée à une réhydratation intraveineuse atténue considérablement les symptômes, raccourcit la récupération et améliore la qualité de vie des patientes, suggérant sa valeur en tant que thérapie d'appoint sûre. *(Afr J Reprod Health 2026; 30 [10]: 104-113).*

Mots-clés: Application de Patchs aux Herbes; Hyperémèse Gravidique; Déficit de la Rate et de l'Estomac; Médecine Traditionnelle Chinoise; Efficacité Clinique; Étude de Cohorte Rétrospective.

Introduction

Nausea and vomiting of pregnancy (NVP) is a common physiological experience in early gestation, affecting approximately 50-80% of pregnant women. Symptoms typically emerge around the 4th week of gestation and often resolve by the 12th to 20th week.[1,2] However, a subset of women experience a severe form known as hyperemesis gravidarum (HG), characterized by persistent and excessive nausea and vomiting, leading to dehydration, electrolyte imbalances, ketonuria, and significant weight loss (typically >5% of pre-pregnancy body weight).[3] HG can severely impact

maternal physical and psychological well-being, potentially leading to complications such as Wernicke's encephalopathy, and has been associated with adverse perinatal outcomes including low birth weight, small-for-gestational-age infants, and preterm birth.[3,4] The reported incidence of HG ranges from 0.3% to 3.0% of pregnancies,[5] and with changing demographic factors, such as increasing maternal age, effective management strategies are crucial.

Current Western medical management for HG primarily focuses on supportive care, including intravenous (IV) fluid and electrolyte replacement, antiemetic medications (e.g., vitamin B6, antihistamines, dopamine antagonists, serotonin antagonists), and nutritional support.[6] While these interventions can manage dehydration and electrolyte disturbances, their efficacy in alleviating nausea and vomiting can be limited for some patients, and symptoms may resolve slowly.[7] Furthermore, prolonged IV therapy carries risks like phlebitis and impacts patient comfort and mobility.

In Traditional Chinese Medicine (TCM), HG falls under the diagnostic category of "Renshen Ezu" (severe morning sickness). TCM theory posits that HG arises from a disharmony between the Chong Mai (Penetrating Vessel) and the Stomach Qi, leading to rebellious Stomach Qi ascending.[8] Common TCM pattern differentiations for HG include Spleen-Stomach Deficiency, Liver Qi invading the Stomach, and Phlegm-Dampness obstruction. The Spleen-Stomach Deficiency pattern, characterized by symptoms such as vomiting clear fluid or undigested food, fatigue, poor appetite, pale tongue, and a weak pulse, is frequently observed.[9] The therapeutic principle for this pattern is to strengthen the Spleen, harmonize the Stomach, descend rebellious Qi, and stop vomiting. While oral herbal decoctions are traditionally used, their administration can be challenging in patients with severe emesis.

Acupoint herbal patching, an external TCM therapy, combines the therapeutic effects of herbal medicine with acupoint stimulation. This method involves applying a specially prepared herbal paste to specific acupoints, allowing for transdermal absorption of active constituents and stimulation of meridians to regulate bodily functions.[10] It offers advantages such as ease of application, minimal invasiveness, and potentially fewer systemic side effects compared to oral medications, making it a well-accepted option for HG patients.[11] Our clinical team has utilized acupoint herbal patching for HG for several years with observed safety and efficacy. However, robust comparative data, particularly for specific TCM patterns like Spleen-Stomach Deficiency, are needed. This study aimed to retrospectively evaluate the clinical efficacy and safety of acupoint herbal patching combined with IV rehydration versus IV rehydration alone in hospitalized HG patients diagnosed with the Spleen-Stomach Deficiency pattern.

Methods

Study design and setting

This was a retrospective cohort study conducted at the Department of Gynecology, Wuhan Hospital of Traditional Chinese Medicine, Wuhan, China. This report follows the STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) guidelines.[12]

Patient data were collected from electronic medical records for the period between December 2022 and December 2024. A total of 100 pregnant women hospitalized with hyperemesis gravidarum (HG) and Spleen-Stomach Deficiency pattern were initially screened. After applying inclusion and exclusion criteria, 36 patients were excluded due to premature treatment discontinuation (n=15), nausea/vomiting caused by other conditions (n=10), allergies to herbal patch/IV components (n=6), or multiple pregnancies (n=5). The remaining 64 eligible patients were enrolled and allocated to either the treatment group (n=32), receiving IV rehydration combined with acupoint herbal patching, or the control group (n=32), receiving IV rehydration alone. All patients completed the 5-day treatment course and follow-up, with no dropouts reported during the study period. Outcome measures were analyzed for all 64 participants. A study flow diagram was shown in Figure 1.

Study population

Patients were pregnant women hospitalized with a diagnosis of HG and concurrently diagnosed with the TCM pattern of Spleen-Stomach Deficiency.

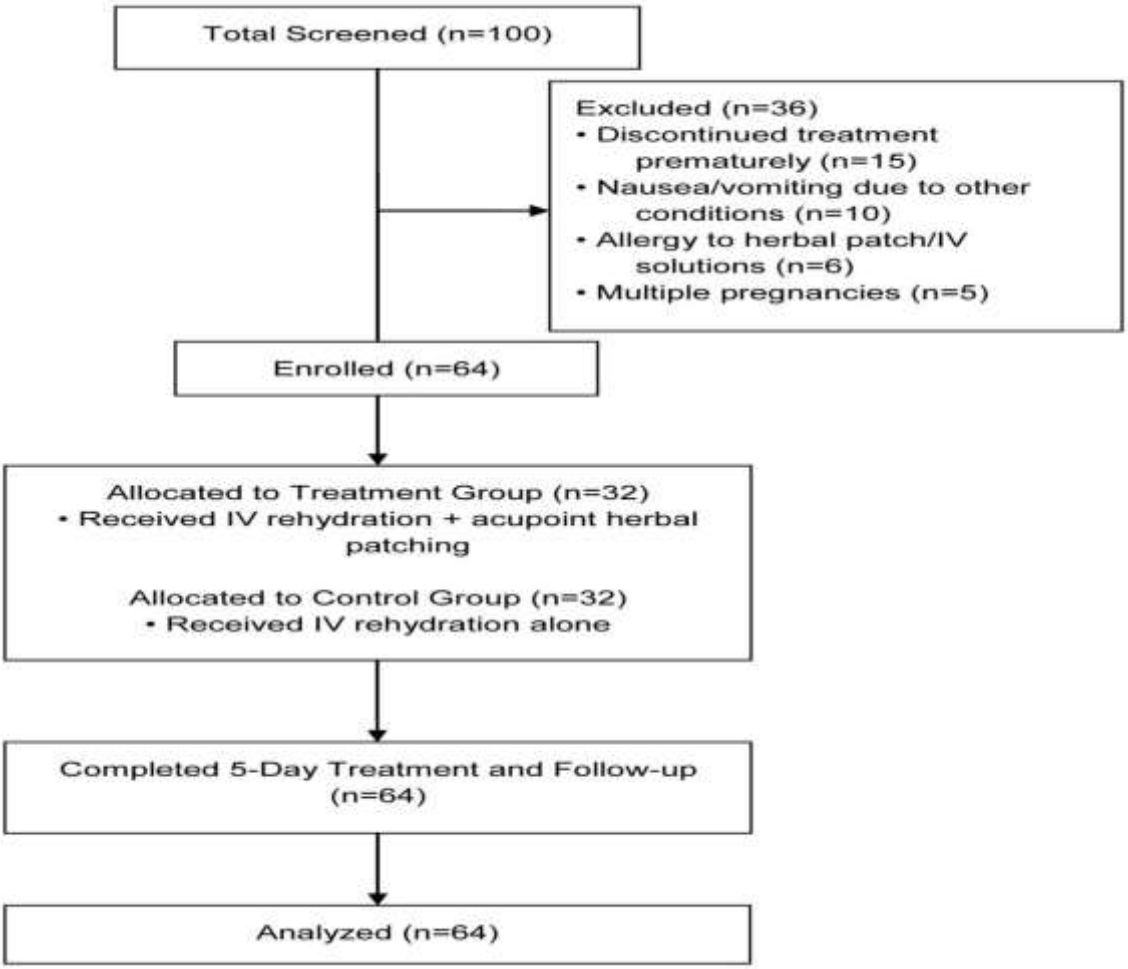

Figure 1: The study flow diagram.

Inclusion criteria were: (1) Diagnosis of HG based on the criteria outlined in the 9th Edition of "Obstetrics and Gynecology":[13] persistent nausea and vomiting, dehydration, ketonuria (≥3+ on urine dipstick), and often weight loss >5% of pre-pregnancy weight. (2) TCM diagnosis of Spleen-Stomach Deficiency pattern according to "TCM Gynecology",[9] characterized by nausea and vomiting (often clear fluid or undigested food), inability to eat or vomiting immediately after eating, fatigue, poor appetite, pale tongue, and a weak, slippery pulse. This diagnosis was documented in the medical records by qualified TCM gynecologists. (3) Singleton pregnancy confirmed by ultrasound. (4) Gestational age typically between 6 and 14 weeks. (5) Availability of complete medical records for the defined treatment period and outcomes. Exclusion criteria were: (1) Patients who discontinued treatment prematurely and were discharged against medical advice. (2) Nausea and vomiting caused by other conditions (e.g., gastrointestinal, endocrine, or neurological disorders). (3) Known allergy or intolerance to any components of the herbal patch or IV solutions. (4) Multiple pregnancies (e.g., twins, triplets). (5) Abnormal embryonic development or gestational trophoblastic disease. (6) Concurrent severe systemic diseases that could confound the results.

A total of 64 eligible patients were included and divided into two groups based on the treatment regimen they received during their hospitalization period: the treatment group (n=32) received IV rehydration plus acupoint herbal patching, and the control group (n=32) received IV rehydration alone. The allocation to treatment was based on the attending physician's discretion and the

availability/patient acceptance of acupoint patching at the time of admission, which varied during the study period. This allocation method did not introduce any known demographic or clinical bias during the admission process, as confirmed by baseline characteristics.

Interventions

Control group (Intravenous rehydration)

Patients in the control group received standard supportive IV rehydration therapy. The daily fluid volume ranged from 1500 mL to 3000 mL, adjusted based on the patient's clinical condition, degree of dehydration, electrolyte levels, and urine output. The basic IV solutions included: 5% Dextrose in 0.9% Sodium Chloride Injection (500 mL), 5% Dextrose Injection (500 mL), 10% Dextrose Injection (500 mL), and Ringer's Lactate or Compound Sodium Chloride Injection (500 mL). Supplemental vitamins were administered intravenously daily: Vitamin C (2g/d), Vitamin B6 (0.1-0.2g/d), and Vitamin B1 (0.1g/d). Potassium chloride (1-3g/d) was added to IV fluids as needed to correct hypokalemia, guided by serum electrolyte monitoring. No other routine antiemetic medications were administered unless symptoms were exceptionally severe and unresponsive, and any such use was documented.

Treatment group (Acupoint herbal patching + intravenous rehydration)

Patients in the treatment group received the same standard IV rehydration therapy as the control group, with the addition of acupoint herbal patching. The herbal formula for the patch consisted of: ***Rou Gui*** (Cortex Cinnamomi) 3g, ***Chen Pi*** (Pericarpium Citri Reticulatae) 10g, ***Su Geng*** (Caulis Perillae) 10g, ***Zhu Ru*** (Caulis Bambusae in Taeniam) 10g, and ***Sha Ren*** (Fructus Amomi) 6g. This formulation is based on an empirical prescription by Senior TCM Physician Xu Shengyang for treating NVP with Spleen-Stomach deficiency. Selected acupoints were: CV12 (Zhongwan), ST25 (Tianshu, bilateral), ST36 (Zusanli, bilateral), and PC6 (Neiguan, bilateral). After skin disinfection at the acupoint sites, the herbal patches were applied. Patches were applied once daily and retained for 6-8 hours. If localized redness, itching, or discomfort occurred, the application time was reduced, or the treatment was discontinued for that specific site/patient.

Treatment duration and monitoring

Both groups received their respective treatments for a course of 5 days. During hospitalization, all patients underwent daily monitoring of urine ketones. Serum electrolytes, liver function, renal function, human chorionic gonadotropin (hCG), progesterone, and estradiol levels were monitored regularly (e.g., every 2-3 days or as clinically indicated). IV fluid composition and volume were adjusted based on these results. Fetal well-being was monitored via periodic ultrasound examinations.

Outcome measures

All outcome measures were assessed at baseline (before initiation of treatment) and on day 5 of treatment.

Primary outcome measures

Pregnancy-unique quantification of emesis (PUQE) score: Assessed the severity of NVP. The PUQE score evaluates nausea duration, vomiting episodes, and retching episodes over the preceding 24 hours, with a total score ranging from 3 (no symptoms) to 15 (most severe).[14] These questionnaires were administered via nurse interviews.

Nausea and *vomiting of pregnancy quality of life (NVPQOL) questionnaire:* Assessed the impact of NVP on quality of life. The NVPQOL consists of 30 items across four domains (physical symptoms and aggravating factors, fatigue, emotions, and limitations). Each item is rated on a 7-point Likert scale, with total scores ranging from 30 to 210. Higher scores indicate poorer quality of life.[15] These questionnaires were also administered via nurse interviews.

TCM Spleen-stomach deficiency symptom Score: Evaluated the severity of TCM-specific symptoms. This score was adapted from the "Gastrointestinal Diseases TCM Symptom Rating Scale",[16] focusing bon four key symptoms of Spleen-Stomach Deficiency: nausea and vomiting,

epigastric fullness/distension, vomiting of clear fluid, and fatigue/lassitude. Each symptom was graded as none (0 points), mild (3 points), moderate (5 points), or severe (7 points), with a total score ranging from 0 to 28. Higher scores indicate more severe Spleen-Stomach Deficiency (Table 1).

Secondary outcome measures

Time to urinary ketone negativity: Defined as the number of days from treatment initiation until urine ketones became negative (trace or 0) on dipstick testing and remained negative.

Duration of hospitalization: Total number of days spent in the hospital for the current HG episode.

Clinical efficacy rate: Assessed according to the "Diagnostic and Efficacy Criteria for TCM Diseases and Syndromes"[17] for Renshen Ezu: Cure (complete resolution of symptoms, negative ketones, normal labs); Improvement (significant reduction in symptoms/ketones); No Improvement (no change or worsening). The overall clinical efficacy rate was calculated as (Cured + Improved) / Total number of patients × 100%.

Safety assessment

Adverse events, particularly skin reactions (e.g., rash, itching, blistering) at the patch application sites, were monitored and recorded. Post-treatment laboratory tests and gynecological ultrasound findings were reviewed to assess any treatment-related adverse effects.

Statistical analysis

Data were analyzed using SPSS version 25.0 (IBM Corp., Armonk, NY, USA). Continuous data were first tested for normality using the Shapiro-Wilk test. Normally distributed data were expressed as mean ± standard deviation (SD) and compared using independent samples t-tests for inter-group comparisons and paired t-tests for intra-group comparisons (before vs. after treatment). Non-normally distributed data were expressed as median (interquartile range, IQR) and compared using the Mann-Whitney U test for inter-group comparisons and the Wilcoxon signed-rank test for intra-group comparisons. Categorical data were presented as counts (n) and percentages (%) and compared using the Chi-square (χ^2) test or Fisher's exact test, as appropriate. A two-sided P-value < 0.05 was considered statistically significant.

Ethical approval

The study protocol was approved by the Ethics Committee of Wuhan Hospital of Traditional Chinese Medicine. Due to the retrospective nature of the study and the use of de-identified data extracted from medical records, the requirement for individual written informed consent was waived by the Ethics Committee. Patient confidentiality was maintained throughout the study.

Results

Baseline characteristics of patients

A total of 64 patients meeting the inclusion criteria were included in the study, with 32 patients in the treatment group and 32 in the control group. There were no significant differences in baseline demographic and clinical characteristics between the two groups (P>0.05). The mean age was 30.22±4.01 years in the treatment group and 30.38±4.56 years in the control group. Gestational age at admission was 8.46±1.67 weeks and 8.07±2.07 weeks, respectively. Gravidity was 2.47±1.37 and 2.34±1.52, respectively.

Comparison of primary outcome measures

PUQE and NVPQOL Scores:

At baseline, there were no significant differences in mean PUQE scores or NVPQOL scores between the treatment and control groups (P=0.255 and P=0.193, respectively). After 5 days of treatment, both groups showed significant reductions in PUQE and NVPQOL scores compared to their respective baseline values (all P<0.05). However, the treatment group demonstrated significantly lower PUQE scores (5.69±1.23 vs. 6.69±1.18, t=3.325, P=0.001) and NVPQOL scores (105.19±10.63 vs. 113.00±10.88, t=2.906, P=0.005) compared to the control group post-treatment (Table 2).

Table 1: TCM spleen-stomach deficiency symptom scoring criteria

Symptom	None (0 points)	Mild (3 points)	Moderate (5 points)	Severe (7 points)
Nausea and Vomiting	Occasional nausea, no emesis, ≤2 times/day	Frequent nausea, vomiting 3-4 times/day, sometimes clear fluid or small amounts of food residue	Marked nausea, often with vomiting of food residue, >4 times/day	Persistent, severe nausea and vomiting, unable to retain food/fluid
Epigastric Fullness/ Distension	Occasional epigastric fullness, mostly after meals, lasting <1h	Obvious epigastric fullness, often postprandial, lasting 1-3h	Severe epigastric fullness, lasting >3h, relieved only by medication	Constant severe epigastric fullness, significant discomfort
Vomiting of Clear Fluid (Salivation)	Occasional vomiting/spitting of clear fluid, ≤4 times/day	Frequent vomiting/spitting of clear fluid, 4-10 times/day	Continuous vomiting/spitting of clear fluid, >10 times/day	Profuse and continuous vomiting/spitting of clear fluid
Fatigue/Lassitude	Listlessness, disinclination to speak, able to maintain work	Exhaustion, lethargy, reduced work capacity	Extreme fatigue, desire to lie down, aversion to speaking, significantly impaired work capacity	Profound exhaustion, inability to perform daily activities

Adapted from Yang et al.[16] total score range: 0-28 points.

Table 2: Comparison of PUQE and NVPQOL scores before and after treatment (mean± SD)

Group	Outcome Measure	Baseline	After 5 Days Treatment	t-value (Inter-group, Post)	P-value (Inter-group, Post)
Treatment Group (n=32)	PUQE Score	12.50 ± 1.65	5.69 ± 1.23#	3.325	0.001
	NVPQOL Score	174.38 ± 15.90	105.19 ± 10.63#		
Control Group (n=32)	PUQE Score	12.03 ± 1.62	6.69 ± 1.18#	2.906	0.005
	NVPQOL Score	169.53 ± 13.43	113.00 ± 10.88#		

#P<0.05 compared to baseline within the same group (paired t-test). Inter-group t-values and P-values refer to the comparison of post-treatment scores. For PUQE post-treatment comparison: t=3.325, P=0.001. For NVPQOL post-treatment comparison: t=2.906, P=0.00

Table 3: Comparison of TCM symptom scores before and after treatment (mean ± SD)

Symptom	Group	Baseline	After 5 Days Treatment	t-value (Inter-group, Post)	P-value (Inter-group, Post)
Nausea and Vomiting	Treatment (n=32)	5.94 ± 1.01	2.59 ± 1.83#	4.019	<0.001
	Control (n=32)	6.06 ± 1.01	4.16 ± 1.22#		
Epigastric Fullness	Treatment (n=32)	6.19 ± 1.00	2.31 ± 1.71#	2.300	0.025
	Control (n=32)	6.13 ± 1.01	3.25 ± 1.55#		
Vomiting Clear Fluid	Treatment (n=32)	6.63 ± 0.79	2.31 ± 1.71#	2.137	0.037
	Control (n=32)	6.50 ± 0.88	3.22 ± 1.68#		
Fatigue/ Lassitude	Treatment (n=32)	6.63 ± 0.79	3.16 ± 1.65#	2.064	0.043
	Control (n=32)	6.44 ± 0.91	3.91 ± 1.23#		
Total Score	Treatment (n=32)	25.38 ± 3.02	10.38 ± 6.10#	3.037	0.003
	Control (n=32)	25.19 ± 3.16	14.53 ± 4.77#		

#P<0.05 compared to baseline within the same group. Inter-group t-values and P-values refer to post-treatment comparisons

Table 4: Secondary outcomes and clinical efficacy

Outcome Measure	Treatment Group (n=32)	Control Group (n=32)	Statistic (t / χ^2)	P-value
Secondary Clinical Outcomes (mean ± SD)				
Time to Urinary Ketone Negativity (days)	3.28 ± 1.67	4.16 ± 1.65	t = 2.109	0.039
Duration of Hospitalization (days)	7.91 ± 3.22	9.69 ± 3.81	t = 2.020	0.048
Clinical Efficacy Rates [n (%)]				
Cured	25 (78.12)	14 (43.75)	χ^2 = 7.943	0.003
Improved	6 (18.75)	12 (37.50)	-	-
No Improvement	1 (3.13)	6 (18.75)	-	-
Overall Efficacy (Cured + Improved)	31 (96.88)	26 (81.25)	Fisher's = -	0.037

TCM Spleen-Stomach Deficiency Symptom Scores

Baseline total TCM symptom scores and individual symptom scores (nausea and vomiting, epigastric fullness, vomiting clear fluid, fatigue) were similar between the two groups (all P>0.05). Post-treatment, both groups experienced significant reductions in all TCM symptom scores from baseline (all P<0.05). The treatment group showed significantly greater improvement in individual scores for nausea and vomiting (P<0.001), epigastric fullness (P=0.025), vomiting clear fluid (P=0.037), and fatigue (P=0.043) compared to the control group. Consequently, the total TCM symptom score was significantly lower in the treatment group than in the control group after treatment (10.38±6.10 vs. 14.53±4.77, t=3.037, P=0.003) (Table 3).

Comparison of secondary outcome measures and efficacy

The treatment group had a significantly shorter mean time to urinary ketone negativity compared to the control group (3.28±1.67 days vs. 4.16±1.65 days, t=2.109, P=0.039). The average duration of hospitalization was also significantly shorter for patients in the treatment group (7.91±3.22 days vs. 9.69±3.81 days, t=2.020, P=0.048). Regarding clinical efficacy, the overall rate was significantly higher in the treatment group (96.88%) compared to the control group (81.25%) (Fisher's exact test, P=0.037). Furthermore, the cure rate was significantly higher in the treatment group (78.12%) than in the control group (43.75%) (χ^2=7.943, P=0.003) (Table 4).

Safety assessment

No severe adverse events related to either IV rehydration or acupoint herbal patching were observed in either group. In the treatment group, three patients reported mild, transient skin itching or redness at the patch application sites, which resolved after reducing the application duration or symptomatic care without requiring discontinuation of the patching therapy. Post-treatment laboratory evaluations (complete blood count, urinalysis, liver function, renal function) and gynecological ultrasounds showed no clinically significant abnormalities attributable to the treatments in either group.

Discussion

This retrospective cohort study demonstrates that acupoint herbal patching, when used as an adjunct to standard intravenous rehydration, offers superior clinical benefits for hospitalized patients with hyperemesis gravidarum (HG) characterized by the TCM pattern of Spleen-Stomach Deficiency, compared to IV rehydration alone. The combined therapy group experienced more significant improvements in nausea and vomiting severity (PUQE scores), quality of life (NVPQOL scores), and TCM-specific symptom scores. Additionally, they had a shorter time to urinary ketone negativity, a reduced duration of hospitalization, and higher overall clinical efficacy and cure rates.

The findings align with the principles of TCM, where HG with Spleen-Stomach Deficiency is attributed to a weakened digestive system unable to properly process food and fluids, leading to the upward rebellion of Stomach Qi.[10] The selected acupoints in this study are traditionally used to address such imbalances. CV12 (Zhongwan) is the Front-Mu point of the Stomach, crucial for regulating Stomach Qi. ST25 (Tianshu) is the Front-Mu point of the Large Intestine and can regulate gastrointestinal motility. ST36 (Zusanli) is a primary point for tonifying Spleen and Stomach Qi and promoting overall vitality. PC6 (Neiguan) is renowned for its antiemetic effects, regulating Qi in the chest and descending rebellious Stomach Qi.[18,19]

The herbal formulation used in the patches included Rou Gui to warm the middle Jiao and disperse cold, Chen Pi to regulate Qi and strengthen the Spleen, Su Geng to regulate Qi and relieve nausea, Zhu Ru to clear heat and stop vomiting, and Sha Ren to warm the Spleen, stop vomiting, and calm the fetus.

Modern pharmacological studies suggest some of these herbs possess anti-inflammatory, gastroprokinetic, or antiemetic properties,[20,21] which may contribute to the observed effects alongside acupoint stimulation.

Our results are consistent with previous research indicating the benefits of TCM therapies for HG. For example, a meta-analysis by Lu et al. (2021) suggested acupuncture was effective in treating HG,[22] and studies on acupressure at PC6 have also shown positive results.[23] While direct comparisons are limited due to variations in interventions and TCM pattern differentiation, our study specifically addresses the Spleen-Stomach Deficiency pattern with a combined herbal-acupoint approach. The observed faster resolution of ketonuria and shorter hospital stays in the treatment group have significant clinical and economic implications, potentially reducing healthcare costs and improving patient turnover. The improvement in PUQE and NVPQOL scores indicates not only a reduction in the physical symptoms of nausea and vomiting but also a meaningful enhancement in the patients' overall well-being. This is particularly important given the profound negative impact HG can have on a pregnant woman's psychological state.[4,24] The safety profile of the acupoint herbal patching was favorable, with only minor, manageable local skin reactions reported, underscoring its suitability for pregnant patients.

Implications for policy and practice

The findings of this study have practical implications for maternal care and hospital policy, particularly in low-resource settings. Acupoint herbal patching is a non-invasive, low-cost intervention that requires minimal specialized equipment. Its integration into clinical practice for managing HG could reduce the reliance on prolonged intravenous therapies, potentially decreasing hospital admission durations and associated costs. Hospital administrators and guideline developers could consider incorporating TCM external therapies, like acupoint patching, as adjunctive options within standard HG management protocols, thereby offering a more holistic and economically viable approach to patient care.

This study has limitations. First, the retrospective design is susceptible to selection bias, as the allocation to treatment groups was not randomized. Second, this was a single-center study with a relatively small sample size, limiting generalizability. Third, the lack of a placebo patch group means that placebo effects cannot be ruled out. Future research should focus on prospective, multi-center, randomized, placebo-controlled trials with larger sample sizes to validate these preliminary findings.

Conclusion

Acupoint herbal patching, when combined with standard intravenous rehydration, significantly improves clinical symptoms, reduces time to ketone negativity, shortens hospital stays, and enhances the quality of life for hospitalized patients with hyperemesis gravidarum and a TCM pattern of Spleen-Stomach Deficiency. This integrative approach appears safe and is well-accepted by patients, highlighting its potential as a valuable therapeutic strategy in the management of HG

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Authors contributions

Dan Chou, Xinni Wang, and Dan Feng contributed equally to this work, hence they are co-authors

Conflict of interest statement

The authors declare no conflicts of interest.

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