

ORIGINAL RESEARCH

Efficacy Analysis of Wandai Decoction Combined with Traditional Chinese Medicine Fumigation and Washing in Patients with Chronic Vaginitis After Sintilimab Treatment for Small Cell Lung Cancer

Yanjia Wu, MD; Lin Tang, MD

ABSTRACT

Objective • To investigate the effect of Wandai decoction combined with traditional Chinese medicine fumigation and washing in patients with chronic vaginitis after sintilimab treatment for small cell lung cancer.

Methods • We recruited 80 patients who developed chronic vaginitis after sintilimab treatment for small cell lung cancer from Hainan General Hospital from January 2020 to June 2022; using a random number table, 40 were assigned to a control group and 40 were assigned to an observation group. The control group was treated with Wandai decoction, and the observation group was treated with Wandai decoction combined with traditional Chinese medicine fumigation and washing. The 2 groups were compared for improvement of the symptoms of vulvar pruritus subsidence time, leukorrhea recovery time, and traditional Chinese medicine symptom score; levels of the vaginal microecological environment factors immunoglobulin G, secretory immunoglobulin A, and pH; levels of the serum inflammatory factors C-reactive protein, tumor necrosis factor, and interleukin-6; and clinical efficacy.

Results • After treatment, the observation group had significantly higher vulvar pruritus subsidence time,

leukorrhea recovery time, traditional Chinese medicine symptom score, and pH value; significantly lower levels of C-reactive protein, tumor necrosis factor, and interleukin-6; and significantly higher levels of immunoglobulin G, secretory immunoglobulin A, and total effective rate compared with the control group (all $P < .001$).

Conclusions • Wandai decoction combined with traditional Chinese medicine fumigation and washing was effective in treating chronic vaginitis after sintilimab treatment for small cell lung cancer. The treatment ameliorated symptoms of leukorrhea abnormalities, vulvar pruritus, and local inflammation, and promoted the recovery of the vaginal microbial environment. Despite the limitations of our study (small sample size and lack of comparison between different types of chronic vaginitis, which hinders the confirmation of extensive efficacy), we consider Wandai decoction combined with traditional Chinese medicine fumigation and washing worthy of promotion and application in clinical practice. (*Altern Ther Health Med.* 2023;29(6):268-273).

Yanjia Wu, MD; Lin Tang, MD; Department of Traditional Chinese Medicine, Hainan General Hospital, Hainan Affiliated Hospital of Hainan Medical University, Haikou, China.

Corresponding author: Lin Tang, MD

E-mail: njplhn@163.com

INTRODUCTION

Sintilimab is an immune drug that inhibits programmed cell death protein 1, induces immunosuppression, and activates T cells, thus generating antitumor immune responses.² Sintilimab exerts significant anticancer effects when used to treat small cell lung cancer, but it has toxic and

side effects, has a relatively high incidence rate of adverse reactions (eg, skin reactions such as rashes and ulcers), can reduce the number of red blood cells, white blood cells, and platelets, and can increase the risk of chronic vaginitis.³

Chronic vaginitis refers to chronic inflammation that occurs if acute vaginitis is not rapidly treated, and it mainly presents as vaginal discharge abnormalities and vaginal pruritus.¹ Chronic vaginitis is characterized by a long course and ease of recurrence. Long-term use of Western medicine may cause toxicity and side effects and aggravate damage to the body, so the therapeutic effect of conventional Western medicine to treat chronic vaginitis is limited⁴.

Wandai decoction is a traditional Chinese medicine (TCM) that tonifies the spleen, soothes the liver, resolves dampness, stops leukorrhea, and is efficient in relieving

gynecological inflammation caused by spleen deficiency.⁴ TCM fumigation and washing involves the fumigation of the body with hot vapor from boiled medicinal herbs; this process expels the cold and warming meridians, activates the blood and resolves blood stasis, invigorates the spleen, settles the stomach, strengthens the kidneys, resolves dampness, helps reduce the toxic and side effects of oral drugs, and significantly improve physical condition.⁵ At present, there are few reports on the treatment of sintilimab-induced chronic vaginitis with Wandai decoction combined with TCM fumigation and washing. This study compared the efficacy of Wandai decoction alone with Wandai decoction combined with TCM fumigation and washing for treating sintilimab-induced chronic vaginitis. We aimed to assess the application of this combination therapy to provide clinical guidance for patients with chronic vaginitis after sintilimab treatment for small cell lung cancer.

PATIENTS AND METHODS

Patients

We selected 80 patients from January 2020 to June 2022 from Hainan General Hospital who developed chronic vaginitis after sintilimab treatment for small cell lung cancer; the patients were assigned to a control group (n=40) or an observation group (n=40) using a random number table. The control group was given Wandai decoction, and the observation group was given Wandai decoction combined with TCM fumigation and washing. In the control group, the patients ranged in age from 28 to 65 years (mean [SD], 46.5 [5.2]), had a body mass index of 18.02 to 28.12 Kg/m² (mean [SD], 23.07 [1.97]), and the course of disease lasted 2 to 8 months (mean [SD], 5.01 [1.02]). There were 11 cases of bacterial vaginitis, 15 cases of mycotic vaginitis, and 14 cases of trichomonal vaginitis in the control group. In the observation group, the patients ranged in age from 26 to 65 years (mean [SD], 45.6 [5.1]), had a body mass index of 18.05 to 28.06 (mean [SD], 23.06 [1.91]), and the course of disease lasted 2 to 9 months (mean [SD], 5.49 [1.17]). There were 16 cases of bacterial vaginitis, 13 cases of mycotic vaginitis, and 11 cases of trichomonal vaginitis in the observation group. No statistically significant differences were identified in this general data (age, body mass index, length of disease course, and type of vaginitis) between the 2 groups ($P > .05$). The patients voluntarily signed an informed consent form, and this study was reviewed and approved by the Hainan General Hospital Ethics Committee.

Inclusion and exclusion criteria

Inclusion criteria were as follows: (1) patients who met the diagnostic criteria for chronic vaginitis,⁶ including symptoms such as vaginal discharge abnormalities and vulvar pruritus, abnormal changes in vaginal pH, pathogen in vaginal discharge test and culture indicating vaginitis, and a course of disease ≥ 2 months; (2) those aged ≥ 18 years; (3) those with complete clinical information; (4) those with normal cognition and consciousness who could cooperate with examinations and treatment; (5) those who met the diagnostic criteria for small cell lung cancer,⁷ as indicated by x-ray, computed tomography,

magnetic resonance imaging, and histopathological examinations, and who had indications for sintilimab treatment; and (6) those with vaginitis caused by spleen deficiency, mainly presenting with increased leukorrhea and vulvar pruritus and accompanied by soreness and weakness of the waist and knees, a bitter mouth and dry pharynx, pain during sexual intercourse, a red tongue with a white and greasy coating, and a wiry and thready pulse. Exclusion criteria were as follows: (1) patients who received antibiotic or anti-infection treatment in the past 2 weeks; (2) those with an allergy to drugs used in this study; (3) those with an expected survival time < 1 month; (4) those with other organ disorders (eg, heart failure or renal failure); (5) those with other malignancies; (6) those with autoimmune diseases or other chronic inflammatory diseases (eg, chronic pharyngitis or chronic enteritis); (7) those with psychiatric disorders; (8) those who participated in other trials; or (9) those who withdrew from this study.

Wandai decoction and TCM fumigation and washing

Wandai decoction is a traditional Chinese herbal formula that consists of a combination of herbs believed to have therapeutic effects on the body, because of their antibacterial, anti-inflammatory, and immunomodulatory properties. The composition of Wandai decoction can vary depending on the specific health condition it is used to treat.

TCM fumigation and washing involves the use of boiled herbal decoctions and infusions for inhalation or bathing to treat health conditions. The chosen herbs are often specific to the ailment being treated.

Control group. The control group was treated with Wandai decoction, which was composed of raw *Rhizoma Atractylodis macrocephalae* (24 g), *Pericarpium Citri Reticulatae* (20 g), *Rhizoma Dioscoreae* (15 g), *Radix Paeoniae Alba* (15 g), *Semen Plantaginis* (15 g), *Rhizoma Atractylodis* (15 g), *Radix Ginseng* (9 g), *Radix Bupleuri* (9 g), *fried Herba Schizonepetae* (7 g), and *Radix Glycyrrhizae* (5 g). For patients with dampness accumulation-induced heat, *Cortex Phellodendri* (15 g) and *Fructus Gardeniae* (9 g) were added, and for patients with chronic soreness and pain in the waist, *Fructus Ligustri Lucidi* (15 g), *Herba Ecliptae* (15 g), *Semen Euryales* (10 g), and *Semen Cuscutae* (10 g) were added. The medicinal herbs were boiled with 450 mL water until the volume reduced to 400 mL; this final volume was then divided into 2 equal parts and taken orally with warm water in the morning and evening at 1 dose/day for 14 days/course for a total of 2 courses.

Observation group. The observation group was treated with Wandai decoction combined with TCM fumigation and washing. The Wandai decoction was the same as that given to the control group. The medicinal herbs used for TCM fumigation and washing were *Radix Sophorae Flavescentis* (20 g), *Fructus Cnidii* (20 g), *Caulis Lonicerae* (20 g), *Flos Chrysanthemi Indici* (20 g), *Radix Stemonae* (15 g), and *Cortex Phellodendri* (15 g), which were boiled in an appropriate amount of water. After the herb residues were removed, the herbal liquid (approximately 2000 mL) was cooled to approximately 42°C or as tolerated by the patient and was used in a sitz bath to fumigate and wash the

vulvar region after training by medical staff. The sitz bath was performed for 15 minutes in the morning and evening for 14 days/course for a total of 2 courses.

Observation indicators

Improvement of symptoms. After treatment, the vulvar pruritus subsidence time and leukorrhea recovery time of patients in the 2 groups were recorded. All patient symptoms were evaluated in accordance with the criteria of diagnosis and therapeutic effects of disease syndromes in TCM. The primary symptoms (increased leukorrhea and vulvar pruritus) were scored 0 to 6 points, and the secondary symptoms (soreness and weakness of the waist and knees, bitter mouth and dry pharynx, and pain during sexual intercourse) were scored 0 to 9 points, for a total of 0 to 15 points. A higher score was negatively associated with symptom improvement.

Vaginal microecological environment. Before and after treatment (Up to 3 days before treatment and up to 3 days after treatment), 5 mL saline was injected into the patient's vagina with a syringe. After 5 minutes, the vaginal discharge was collected and centrifuged at 1509g/min for 15 minutes. Then, enzyme-linked immunosorbent assay kits were used to determine the levels of immunoglobulin G (IgG) (ml092681, Shanghai Enzyme-linked Biotechnology Co., Ltd.) and secretory immunoglobulin A (SIgA) (ml10580, Shanghai Enzyme-linked Biotechnology Co., Ltd.), and the pH value was determined using a pH meter (MIK-PH8.0, Hangzhou Meacon Automation Technology Co., Ltd.).

Before and after treatment (within 3 days after 2 courses of treatment), 3 mL fasting venous blood was drawn from each patient in the morning. After centrifugation at 15 cm × 3000 rpm for 15 minutes, the upper layer of serum was collected. Then the levels of C-reactive protein (CRP), tumor necrosis factor (TNF), and interleukin-6 (IL-6) were detected using their corresponding enzyme-linked immunosorbent assay kits (ml092609, ml077385, and ml064296, Shanghai Enzyme-linked Biotechnology Co., Ltd.).

The patients were followed up for 3 months (after treatment). Clinical efficacy of the 2 treatments was comprehensively assessed in combination with the patients' symptoms following 2 courses of treatment and was classified into 4 groups: healed (complete disappearance of symptoms such as leukorrhea abnormalities and vulvar pruritus, total recovery of the vaginal microecological environment, and no sign of disease recurrence), significantly effective (significant improvement of symptoms such as leukorrhea abnormalities and vulvar pruritus, significant recovery of the vaginal microecological environment, and no sign of disease recurrence), effective (improvement of symptoms such as leukorrhea abnormalities and vulvar pruritus, improvement of the vaginal microecological environment, and no sign of disease recurrence), and ineffective (no significant improvement of symptoms such as leukorrhea abnormalities and vulvar pruritus, poor recovery of the vaginal microecological environment, or some signs of disease recurrence). Total effective rate = 100% – ineffective rate.

Statistical analysis

SPSS 25.0 software (IBM Corp.) was used for statistical analysis. Measurement data conforming to a normal distribution were expressed as mean (SD), and the independent samples *t* test was used for comparison between groups. Enumeration data were expressed as n (%) and were analyzed by χ^2 test. $P < .05$ was considered statistically significant.

RESULTS

Comparison of the improvement of symptoms between the 2 groups

After treatment, the vulvar pruritus subsidence time was 6.22 (0.54) days for the observation group and 7.57 (0.78) days for the control group. After treatment, the leukorrhea recovery time was 3.23 (0.94) days for the observation group and 4.49 (1.01) days for the control group. The TCM symptom scores of the observation group improved from 10.23 (2.11) points before treatment to 3.71 (1.01) points after treatment, while the TCM symptom scores of the control group improved from 10.18 (2.05) points before treatment to 5.83 (1.15) points after treatment. Before treatment, there was no statistically significant difference in the TCM symptom scores between the 2 groups ($P = .02$). After treatment, the vulvar pruritus subsidence time, leukorrhea recovery time, and TCM symptom scores were lower in the observation group than in the control group (all $P < .001$) (Table 1).

Comparison of the vaginal microecological environment between the 2 groups

Before treatment, the levels of IgG ($P = .81$) and SIgA ($P = .94$) and the pH values ($P = .97$) were not statistically significantly different between the 2 groups. The IgG level after treatment was 33.02 (3.23) $\mu\text{g/mL}$ for the observation group and 18.98 (2.85) $\mu\text{g/mL}$ for the control group; the SIgA level after treatment was 172.15 (21.14) $\mu\text{g/mL}$ for the observation group and 82.94 (15.85) $\mu\text{g/mL}$ for the control group; and the pH value after treatment was 4.68 (0.78) for the observation group and 5.31 (0.82) for the control group. After treatment, the levels of IgG ($P < .001$) and SIgA ($P < .001$) were higher and the pH value ($P = .001$) was lower in the observation group than in the control group, and the differences were statistically significant (Table 2).

Comparison of the serum inflammatory factor levels between the 2 groups

Before treatment, the levels of CRP ($P = .79$), TNF ($P = .86$), and IL-6 ($P = .56$) were not statistically significant between the 2 groups. The CRP level after treatment was 3.9 (0.28) pg/mL for the observation group and 4.1 (0.31) pg/mL for the control group; the TNF level after treatment was 61.28 (8.94) pg/mL for the observation group and 69.85 (9.28) pg/mL for the control group; and the IL-6 level after treatment was 62.94 (5.11) pg/mL for the observation group and 72.85 (5.94) pg/mL for the control group. After treatment, the levels

Table 1. Comparison of the Improvement of Symptoms Between the 2 Groups^a

Group	Case, n	Vulvar pruritus subsidence time, d	Leukorrhea recovery time, d	TCM symptom score (points)	
				Before treatment	After treatment
Observation group	40	6.22 (0.54)	3.23 (0.94)	10.23 (2.11)	3.71 (1.01)
Control group	40	7.57 (0.78)	4.49 (1.01)	10.18 (2.05)	5.83 (1.15)
<i>t</i>	NA	9.000	5.776	0.108	8.760
<i>P</i> value	NA	<.001	<.001	.92	<.001

^aData are presented as mean (SD).

Abbreviations: NA, not applicable; TCM, traditional Chinese medicine.

Table 2. Comparison of the Vaginal Microecological Environment Between the 2 Groups^a

Group	Case, n	IgG, µg/mL		SIgA, µg/mL		pH	
		Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment
Observation group	40	12.33 (1.25)	33.02 (3.23)	64.15 (11.02)	172.15 (21.14)	6.18 (1.05)	4.68 (0.78)
Control group	40	12.40 (1.37)	18.98 (2.85)	63.97 (10.84)	82.94 (15.85)	6.19 (1.08)	5.31 (0.82)
<i>t</i>	NA	0.239	20.614	0.074	21.354	0.042	3.521
<i>P</i> value	NA	.81	<.001	.94	<.001	.97	.001

^aData are presented as mean (SD).

Abbreviations: IgG, immunoglobulin G; NA, not applicable; SIgA, soluble immunoglobulin A.

Table 3. Comparison of the Serum Inflammatory Factor Levels Between the 2 Groups^a

Group	Case, n	CRP, pg/mL		TNF, pg/mL		IL-6, pg/mL	
		Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment
Observation group	40	7.45 (0.65)	3.92 (0.28)	120.28 (11.16)	61.28 (8.94)	110.85 (6.94)	62.94 (5.11)
Control group	40	7.49 (0.71)	4.16 (0.31)	119.84 (10.97)	69.85 (9.28)	109.98 (6.49)	72.85 (5.94)
<i>t</i>	NA	0.263	3.634	0.178	4.206	0.579	7.999
<i>P</i> value	NA	.79	.001	.86	<.001	.56	.001

^aData are presented as mean (SD).

Abbreviations: CRP, C-reactive protein; IL, interleukin; NA, not applicable; TNF, tumor necrosis factor.

Table 4. Comparison of the Clinical Efficacy Between the 2 Groups^a

Group	Case	Healed	Significantly effective	Effective	Ineffective	Total effective rate
Observation group	40	13 (32.5)	16 (40.0)	10 (25.0)	1 (2.5)	39 (97.5)
Control group	40	1 (2.5)	8 (20.0)	25 (62.5)	6 (15.0)	34 (85.0)
χ^2	NA	NA	NA	NA	NA	9.8
<i>P</i> value	NA	NA	NA	NA	NA	.002

^aData are presented as n (%).

Abbreviation: NA, not applicable.

of CRP ($P = .001$), TNF ($P < .001$), and IL-6 ($P = .001$) were lower in the observation group than in the control group, and the differences were statistically significant (Table 3).

Comparison of the clinical efficacy between the 2 groups

The treatment given to the observation group was more effective than the treatment given to the control group. Specifically, among the patients in the observation group, 13 (32.5%) were healed, 16 (40.0%) had significantly effective treatment, 10 (25.0%) had effective treatment, and 1 (2.5%)

had ineffective treatment. Among the patients in the control group, only 1 (2.5%) was healed, 8 (20.0%) had significantly effective treatment, 25 (62.5%) had effective treatment, and 6 (15.0%) had ineffective treatment. The total effective rate for the observation group was 97.5%, while the total effective rate for the control group was 85.0%. The total effective rate (combining the healed, significantly effective, and effective groups) for the observation group was significantly higher than that for the control group, and the difference was statistically significant ($P = .002$) (Table 4).

DISCUSSION

Small cell lung cancer is a lung malignancy arising from the bronchial mucosa or glands.^{8,9} Clinically, surgery for small cell lung cancer is not particularly effective, and small cell lung cancer is mainly treated by radiotherapy combined with chemotherapy. As medical technology has developed, immune-targeted and genetically targeted drugs have been shown to be effective in treating small cell lung cancer.¹⁰ Sintilimab, a novel immune-drug, has certain efficacy in the treatment of small cell lung cancer; it can clear and kill cancer cells by activating the human immune system and tumor immune responses to achieve significant antitumor effects.¹¹ Nonetheless, sintilimab may cause degrees of adverse reactions during treatment, which are influenced by its mode of delivery and dose and by individual patient differences. Patients who develop chronic vaginitis after sintilimab treatment for small cell lung cancer should receive timely diagnosis and treatment of the vaginitis to reduce its impact on patients with lung cancer, improve quality of life and clinical efficacy, and facilitate the recovery of the physical health of patients.

In TCM, chronic vaginitis is mostly classified as a leukorrheal disease, which mainly results from dysfunction of the liver, spleen, and kidney, and from invasion of pathogenic wind, cold, damp, and heat.¹² Specifically, pudendal pain and leukorrheal disease are induced by depletion of essence and blood; kidney-yin deficiency; blood-yin deficiency; yin deficiency and effulgent fire; liver depression and qi stagnation; abnormal transportation and transformation of water and dampness causing dampness-heat to travel downward; and pathogenic wind, cold, damp, and heat that directly invades the pudendal regions. Therefore, it is considered, in TCM, that chronic vaginitis should be treated by resolving dampness, stopping leukorrhea, and tonifying the spleen, liver, and kidneys. Hence, we investigated the effect of Wandai decoction combined with TCM fumigation and washing in patients with chronic vaginitis after sintilimab treatment for small cell lung cancer.

Our results show that, after treatment, vulvar pruritus subsidence time, leukorrhea recovery time, TCM symptom scores, and pH values were lower and the levels of IgG and SIgA were higher in the observation group than in the control group, indicating that the combination therapy was effective in ameliorating the clinical symptoms of chronic vaginitis, which may be attributed to the following reasons. First, in the Wandai decoction, raw *Rhizoma Atractylodis macrocephalae* is the most important drug that dries dampness, invigorates the spleen, causes diuresis, and alleviates edema. *Pericarpium Citri Reticulatae*, *Rhizoma Dioscoreae*, and *Radix Paeoniae Alba* are minor drugs that regulate qi, invigorate the spleen, regulate the middle, dry dampness, nourish the blood, and regulate the meridians. *Semen Plantaginis* and *Rhizoma Atractylodis* are other minor drugs that clear heat, relieve stranguria, dry dampness, invigorate the spleen, dispel wind, and dissipate the cold. *Radix Ginseng* and *Radix Bupleuri* are minor drugs that invigorate the spleen, benefit the lung, tonify primordial qi

and yang, soothe the liver, and relieve depression. *Fried Herba Schizonepetae* is the key drug that dispels wind, relieves the exterior, detoxifies, and alleviates edema. *Radix Glycyrrhizae* is the adjuvant drug that coordinates the action of all the drugs.¹³ Syndrome differentiation in TCM shows that *Cortex Phellodendri* and *Fructus Gardeniae* are given to patients with dampness accumulation-induced heat to clear heat, purge fire, remove hectic heat, and drain and dry dampness. *Fructus Ligustri Lucidi*, *Herba Ecliptae*, *Semen Euryales*, and *Semen Cuscutae* are given to patients with chronic soreness and pain of the waist to nourish the liver and kidneys, tonify the spleen, and stop diarrhea. In general, Wandai decoction resolves dampness, stops leukorrhea, clears heat, raises yang levels, tonifies the spleen, and replenishes qi and is effective in relieving symptoms such as vulvar pruritus and leukorrhea abnormalities. Second, for TCM fumigation and washing, *Radix Sophorae Flavescentis* and *Fructus Cnidii* can clear heat, dry dampness, destroy parasites, and relieve itching. *Caulis Lonicerae* and *Flos Chrysanthemi Indici* can clear heat, detoxify, disperse wind, and dredge collaterals. *Radix Stemonae* and *Cortex Phellodendri* can destroy parasites, moisten lungs, lower qi, purge fire, remove hectic heat, detoxify, and treat sores; they are of great importance for ameliorating vaginal microbial indicators and an adverse vaginal environment and are conducive to the control and amelioration of vulvar pruritus and leukorrhea abnormalities. Third, during TCM fumigation and washing, drugs can act locally through the skin and mucous membranes under the action of heat penetration while fumigating the patient's pudenda with hot vapor to dredge meridians, clear heat, and dry dampness. At the same time, TCM fumigation and washing avoids the toxic and side effects caused by oral drugs, so it contributes to improving the overall clinical efficacy of Wandai decoction.¹⁴

In our study, the observation group had better improvement of symptoms than the control group. The clinical data indicated that, after treatment, the levels of CRP, TNF, and IL-6 were lower and the total effective rate was higher in the observation group than in the control group, indicating that the combination therapy was efficient in eliminating inflammation and improving efficacy. This result may be because, as assessed using modern pharmacological techniques, *Fructus Cnidii* is rich in cindimine and xanthotoxin and has antifungal, antiparasitic, antitrichomonal, and anti-inflammatory effects, which can ameliorate the vaginal microbial environment and eliminate inflammation; *Fructus Cnidii* can directly act on the vagina through TCM fumigation and washing to exert its efficacy.¹⁵ In addition, the physical heat from TCM fumigation and washing can dilate blood vessels and promote blood circulation, thus enhancing the absorption of active components of drugs, improving metabolism, contributing to the elimination of lesions, facilitating recovery, and avoiding damage to normal organs caused by oral administration of drugs. Therefore, the therapeutic effect of combination therapy in the observation group was superior to that of single therapy in the control group.

There were some limitations to our study. First, the number of patients included was limited to 40 per group. Second, the different types and causes of vaginitis may have different impacts on clinical therapeutic effects, but we did not compare Wandai decoction combined with TCM fumigation and washing in patients with different types of chronic vaginitis, so the efficacy of this treatment in a wider variety of patients has not yet been confirmed.

CONCLUSION

Wandai decoction combined with TCM fumigation and washing was more effective than Wandai decoction alone in treating chronic vaginitis after sintilimab treatment for small cell lung cancer. This combination therapy ameliorated symptoms such as leukorrhea abnormalities, vulvar pruritus, and local inflammation and promoted the recovery of the vaginal microbial environment and is worthy of promotion and application in clinical practice.

CONFLICT OF INTEREST

The authors have no potential conflicts of interest to report that are relevant to this article.

AUTHOR CONTRIBUTIONS

YW and LT designed the study and performed the experiments, YW collected the data, LT analyzed the data, and YW and LT prepared the manuscript. All authors read and approved the final manuscript.

FUNDING

This study did not receive any funding in any form.

REFERENCES

1. Arechavala A, Negroni R, Santiso G, Depardo R, Bonvehi P. Chronic recurrent vulvovaginitis is not only due to *Candida*. *Rev Iberoam Micol*. 2021;38(3):132-137. doi:10.1016/j.riam.2021.03.002
2. Fang Y, Sun H, Chen Y, Jiang N, Ji L, Shi J. A rapid response of lung squamous cell carcinoma following treatment with sintilimab combined with recombinant humane endostatin injection and nab-paclitaxel in an elderly patient: A case report. *Medicine (Baltimore)*. 2021;100(31):e26801. doi:10.1097/MD.00000000000026801
3. Yang J, Wang Y, Tong XM. Sintilimab-induced autoimmune diabetes: A case report and review of the literature. *World J Clin Cases*. 2022;10(4):1263-1277. doi:10.12998/wjcc.v10.i4.1263
4. Guo R-Z, Zhou W-Q, Luo Z-G. [Effect of modified huanglian wendan decoction in treating senile patients with mild cognitive impairment of turbid-phlegm blocking orifice syndrome][J]. *Zhongguo Zhong Xi Yi Jie He Za Zhi Zhongguo Zhongxiyi Jiehe Zazhi = Chinese Journal of Integrated Traditional and Western Medicine*, 2010, 30(1): 33-36.
5. Ou L, Meng Y, Chen Z, et al. Evidence of Chinese herbal fumigation for knee osteoarthritis: A protocol for systematic review and meta-analysis. *Medicine (Baltimore)*. 2021;100(6):e24532. doi:10.1097/MD.00000000000024532
6. Kapurubandara S, Lowenstein L, Salvay H, Herijgers A, King J, Baekelandt J. Consensus on safe implementation of vaginal natural orifice transluminal endoscopic surgery (vNOTES). *Eur J Obstet Gynecol Reprod Biol*. 2021;263:216-222. doi:10.1016/j.ejogrb.2021.06.019
7. Rolfo C, Mack P, Scagliotti GV, et al. Liquid biopsy for advanced NSCLC: a consensus statement from the International Association for the Study of Lung Cancer. *J Thorac Oncol*. 2021;16(10):1647-1662. doi:10.1016/j.jtho.2021.06.017
8. Shao Q, Liu T, Wang W, et al. The Chinese herbal prescription JZ-1 induces autophagy to protect against herpes simplex Virus-2 in human vaginal epithelial cells by inhibiting the PI3K/Akt/mTOR pathway. *J Ethnopharmacol*. 2020;254:112611. doi:10.1016/j.jep.2020.112611
9. Torres-Durán M, Curiel-García MT, Ruano-Ravina A, et al. Small-cell lung cancer in never-smokers. *ESMO Open*. 2021;6(2):100059. doi:10.1016/j.esmoop.2021.100059
10. Hayashi R, Inomata M. Small cell lung cancer; recent advances of its biology and therapeutic perspective. *Respir Investig*. 2022;60(2):197-204. doi:10.1016/j.resinv.2021.10.008
11. Liang X, Wei Z. Effect of Sintilimab combined with Chemotherapy on Tumor Markers and Immune Function of advanced non-small cell lung cancer. *Pak J Med Sci*. 2021;37(4):1063-1068. doi:10.12669/pjms.37.4.3820
12. Zhao H, Zhao L, Wu F, Shen L. Clinical research on traditional Chinese medicine treatment for bacterial vaginosis. *Phytother Res*. 2021;35(9):4943-4956. doi:10.1002/ptr.7123
13. Li H, Yao M-J, Zhao W-M, Guan J, Cai LL, Cui L. [A randomized, controlled, double-blind trial of Huannao Yicong capsule in senile patients with mild cognitive impairment]. *J Chin Integr Med*. 2008;6(1):25-31. doi:10.3736/jcim20080106
14. He L, Yang Z, Xu J, Wang Q. Evaluation of the effectiveness of a combination of Chinese herbal fumigation sitz-bath and red ointment in managing postoperative wound healing and pain control in anal fistula patients. *Contrast Media Mol Imaging*. 2022;2022:1905279. doi:10.1155/2022/1905279
15. Fan H, Gao Z, Ji K, et al. The in vitro and in vivo anti-inflammatory effect of osthole, the major natural coumarin from *Cnidium monnieri* (L.) Cuss, via the blocking of the activation of the NF- κ B and MAPK/p38 pathways. *Phytomedicine*. 2019;58:152864. doi:10.1016/j.phymed.2019.152864