

Clinical Study on External Use of Chinese Medicine in Treating Children with Herpetic Stomatitis

Peng Chen¹, Wei Chen², Xiaomin Jia¹, Bo Li^{1*}

¹The Second Hospital of Jilin University, Changchun, China

²Changchun Second Secondary Professional School, Changchun, China

Email: c_p@jlu.edu.cn, *405644914@qq.com

How to cite this paper: Chen, P., Chen, W., Jia, X.M. and Li, B. (2023) Clinical Study on External Use of Chinese Medicine in Treating Children with Herpetic Stomatitis. *Open Journal of Pediatrics*, 13, 284-289. <https://doi.org/10.4236/ojped.2023.132034>

Received: February 27, 2023

Accepted: March 27, 2023

Published: March 30, 2023

Copyright © 2023 by author(s) and Scientific Research Publishing Inc. This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

Abstract

Background: Pediatric herpetic stomatitis is a common pediatric disease, the course of the disease is about 1 - 2 weeks, and it usually occurs in 1 - 3 years old children, due to infection of herpes simplex virus I and onset. **Objective:** To observe the curative effect of Chinese medicine prescription (Yueshi, Zhongbai, Qingdai, Phelloderma phelloderma and glycyrrhiza) on children with herpetic stomatitis. **Methods:** 90 patients were divided into 2 groups by random number table method. 45 patients in the observation group were treated with traditional Chinese medicine, and 45 patients in the control group were treated with iodine glycerin. The total effective rate after treatment was compared between the two groups. **Results:** The total effective rate of the treatment group was 95.55%; the total effective rate of the control group was 71.11%; the total effective rate of the two groups after treatment was compared; the treatment group was significantly better than the control group; the difference was significant ($P < 0.05$). **Conclusion:** The external use of Chinese medicine in the treatment of pediatric herpetic stomatitis has achieved good results, improving the condition of children, and significantly improving the clinical efficacy.

Keywords

Herpetic Stomatitis, Traditional Chinese Medicine, Curative Effect

1. Introduction

Children herpes stomatitis is a common disease in pediatrics, the course of the

*Corresponding author.

disease is about 1 - 2 weeks, and it always happens in 1 - 3 years old young children, because of infection of herpes simplex virus I and the onset of disease. Fever often occurs in children, and the body temperature can reach 38°C - 40°C in severe cases. The body temperature usually returns to normal after 3 - 5 days, followed by severe pain. Children always refuse to eat, and they have much saliva secretion. Children always cry and so on. At this time the gums in the mouth of the patient are red, they are swollen and congested. Single or cluster-like small herpes with a diameter of about 2 mm were found in the buccal mucosa, lip mucosa, tongue body and the skin around the mouth, even in the soft palate, tongue and pharynx. It can be up to 3 mm in severe cases. It will be with redness around the herpes. It will develop into an irregular edge ulcer or erosive surface after a short time break-up. It was accompanied by yellow-white cellulose secretion covering the film. In most children, it is accompanied by the gradual fusion of multiple ulcers into large irregular ulcers [1]. Although it is a self-limited disease, delayed treatment can lead to complications such as herpesviral encephalitis, bacterial infections, dehydration, electrolyte disturbances and acidosis in severe cases. It will do harm to children's health [2] [3]. The symptoms of children are with herpetic stomatitis, such as fever, severe pain in the mouth. They refuse to eat, increased saliva secretion and crying. It has been concerned for a long time. It is an urgent need to explore the drugs with quick effect and high safety for children with herpetic stomatitis. In order to inhibit virus replication, aciclovir and ara-amp are often used in clinic, but they have little effect on improving clinical symptoms [4] [5]. Traditional Chinese medicine has unique advantages and characteristics in the use of external medicine. Wu Shiji, a master of foreign governance in the Qing Dynasty, pointed out in his *Yue Wen* (Parallel Wen): "The doctrines of external governance are the doctrines of internal governance, and drugs of external governance are drugs of internal governance. What is different is *Fa Yue* (*Yue Wen*)."⁶ [6] The importance of external use of traditional Chinese medicine was explained to later generations. The external use of traditional Chinese medicine is to apply the relevant preparation of traditional Chinese medicine to a certain part or lesion on the body surface, and absorb it through the skin to act on the human body, so as to achieve the corresponding therapeutic purpose. Many clinical studies have been done on the external treatment of TCM at home and abroad. In recent years, appropriate methods for external use have been developed constantly, which have solved the problem that many pharmaceutical preparations cannot be used externally. In view of this disease, the traditional Chinese medicine applied in the herpes or ulcer lesions penetrates into the body of the children through the skin, alleviates pain in a short time; the effect is obvious; the operation process is simple, safe and effective, and avoids the gastrointestinal reaction; the children and their families are easy to accept. In the clinical work from 2020 to 2022, the author applied traditional Chinese medicine in the treatment of pediatric herpetic stomatitis, and achieved certain clinical effects. The report is as follows.

2. General Information

1) Patient Data Ninety children with herpetic stomatitis in outpatient department from February 2020 to April 2022 were selected and divided into treatment group and control group by random number table method. In the treatment group, there were 45 patients, including 18 males and 27 females, with an average age of (2.75 ± 0.32) years and an average course of disease of (2.15 ± 0.83) d; Control group 45 cases, male 21 cases, female 24 cases, average age of (2.91 ± 0.66) years, average course of disease (2.24 ± 0.79) d. There was no significant difference between the two groups in age, course of disease and condition after statistical treatment, with statistical significance ($P > 0.05$).

2) Diagnostic criteria [7] [8]: systemic prodromal symptoms, such as fever, fatigue, irritability, salivation, refusing to eat, crying, etc.; Subsequently appear gingival swelling, oral mucosa blisters, erosion or ulcers and other symptoms, some children have herpes around the lip or oral odor; No local use of corticosteroids or antibiotics in the oral cavity after the onset of the disease.

Diagnostic criteria of traditional Chinese medicine: refer to the seventh edition of "Pediatrics of Traditional Chinese Medicine" for diagnosis, the main symptoms are ulceration in the gum, tongue, cheeks and palate, with different ulceration points, salivation and pain; The secondary symptoms are dry mouth, short yellow urine, red tip of the tongue, thin yellow tongue coating and slippery pulse.

3) Inclusion criteria: a) Children with herpetic stomatitis who met the above diagnosis; b) children aged 1 - 6 years old; c) children's families have good compliance, and can sign the informed consent.

4) Exclusion criteria: a) Allergic constitution and allergic to the test drug; b) Children with systemic recurrent ulcers; c) children with poor compliance and contraindications for treatment; d) children with severe liver, heart and renal dysfunction.

3. Treatments

1) In the observation group, traditional Chinese medicine was used to gently wipe the affected area of oral mucosa, and the main components were: "1 part crescent stone, 1 part middle white, 1 part Qingdai, 2 parts Phelloderma phelloderma and 3 parts licorice" were ground into powder and coated on the affected area, 4 - 6 times/day.

2) Control group: iodine glycerin was used, 4 - 6 times/day. Children in both groups were instructed to pay attention to food hygiene and disinfection of eating utensils during treatment, those with fever took ibuprofen suspension drops orally, and were asked to return to the doctor on the 5th day of treatment.

3) Therapeutic criteria: The therapeutic efficacy criteria were formulated according to the Clinical Research Guidelines for the Treatment of herpetic Stomatitis with New Chinese Medicines [4], divided into three categories: cured, improved, not cured, cured: after 3 days of treatment, the body temperature re-

turned to normal, symptoms disappeared, a week after the ulcer healed, lymph nodes returned to normal; Improved: after 3 days of treatment, body temperature returned to normal, symptoms disappeared, ulcer improved, basically returned to normal, lymph node decreased; No cure: After 3 days of treatment, the body temperature did not recover, and the clinical symptoms did not change significantly.

4. Treatment Results

1) Evaluation of curative effect: In the external use group, 23 cases were cured, 10 cases were improved and 2 cases were not cured. The total effective rate was 95.55%. In the control group, 14 cases were cured after treatment, 18 cases were improved, 13 cases were not cured, and the total effective rate was 71.11%. The total effective rate of the two groups after treatment was compared, the treatment group was significantly better than the control group, the difference was significant ($P < 0.05$), as shown in the table below (Table 1).

2) The disappearance rate of ulcer pain after 24 h was compared between the two groups as follows: the disappearance rate of the external use group was 66.66%; the hourly rate of pain in the control group was 35.55% (Table 2).

5. Discussion

This disease belongs to the category of “oral sore” and “chyme of mouth” in traditional Chinese medicine. At present, there are no specific treatment measures, mainly symptomatic treatment, to relieve pain, promote healing, prevent recurrence as the therapeutic principle. At present, there are a variety of clinical treatment methods for this disease, scholars [9]. They used iodine glycerin with lidocaine to treat pediatric herpetic stomatitis, and applied hydrogen peroxide

Table 1. Comparison of clinical efficacy between the two groups.

Group	Number of cases (n)	Cure	Getting better	Not healed	Total effective rate (%)
Treatment group	45	23	10	2	95.55
Control group	45	14	18	13	71.11

Note: There was a significant difference between the two groups ($P < 0.05$).

Table 2. Ulcer pain disappearance rate 24 h after treatment in both groups.

Groups	Number of cases (n)	Disappearance of symptoms	Symptoms do not disappear	Pain disappearance rate (%)
Treatment group	45	30	15	66.66
Control group	45	16	29	35.55

Note: There was a significant difference between the two groups ($P < 0.05$).

and iodine glycerin in the oral ulcer of children, killing pathogenic bacteria and viruses to a certain extent. However, when applied on the ulcer surface, the pain of young children is unbearable, the compatibility is low, and it is not easy for parents to accept, and at the same time, the physiological and psychological care of children are greatly damaged. The author used the prescription of lunar stone, Zhongbai, Qingdai, Phellodendri and glycyrrhiza for external use of traditional Chinese medicine, which was the experience prescription of Mr. Zhu Zhilong, a famous doctor in Changchun. The application of convalescing new liquid [10] [11] combined with other drugs for the treatment of the disease, through gargling can accelerate the healing of the ulcer, but the children are difficult to accept its odour and have poor compliance. Syndrome differentiation is a unique way of TCM treatment of children with herpes stomatitis, through specimen consideration, to achieve the purpose of shortening the course of disease in children, and its advantages are small side effects, high compliance, significant effect, etc. [12]. Among them, the external treatment of traditional Chinese medicine is the characteristic of traditional Chinese medicine, which has many clinical applications. Its advantages are: Focus to maintain a high concentration of drugs and low concentration of drugs in the blood circulation, to avoid the first pass effect of the liver, also avoid damage to the gastrointestinal tract, the efficacy of long duration, reduce the number of administration, maintain a constant effective blood concentration, improve the efficacy, but also because of its convenient operation and small adverse reactions and other characteristics have become the focus of research at home and abroad [13]. In recent years, both domestic and foreign countries have attached great importance to the application and development of external treatment of traditional Chinese medicine. Many high-tech scientific and technological means have been used to research and develop traditional Chinese medicine and its external treatment. Traditional Chinese medicine has ushered in greater development space. The research on the external use of traditional Chinese medicine has become a major trend in the development of traditional Chinese medicine. The key lies in how to use scientific and technological means in combination with traditional Chinese medicine to develop suitable dosage forms that are conducive to preservation and convenient administration, improve the transdermal effect and dissolution rate of traditional Chinese medicine, so as to better play its efficacy [14]. The second is the research on the principle of transdermal technology to expand the scope of disease research and application fields and further improve the clinical efficacy. Attention should also be paid to cooperating with precise and quantitative drug delivery devices to avoid the loss and uneven distribution of drugs in the mouth. To sum up, we should constantly improve the external treatment of traditional Chinese medicine so that it can better serve our health.

Authors' Contribution

Chen Peng, Wei Chen, Xiaomin Jia conducted the literature search, data extrac-

tion and manuscript drafting. Bo Li conceived the study and supervised the entire process of the study. All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

Funding

Jilin Provincial Administration of Traditional Chinese Medicine Fund (2021084).

References

- [1] Qi, H. (2017) Clinical Efficacy of Stomatitis Spray Combined with Ribavirin Effervescent Granules in the Treatment of Herpetic Stomatitis. *Chinese Journal of Stomatology*, **7**, 40.
- [2] Zhang, Z.V. (2004) Stomatology. 6th Edition, People's Medical Publishing House, Beijing, 69-70.
- [3] Hu, Y.M., Jiang, Z.F., Shen, K.L., *et al.* (2015) Practical Pediatrics. 8th Edition, People's Medical Publishing House, Beijing, 831-834. (In Chinese)
- [4] Shen, X.M. and Wang, W.P. (2010) Pediatrics. 7th Edition, People's Medical Publishing House, Beijing. (In Chinese)
- [5] Ji, N., Zhao, X., Zeng, X., *et al.* (2018) Research Progress of Nucleoside Antiherpesvirus Drugs. *International Journal of Stomatology*, **45**, 351-357.
- [6] Wu, S.X. (1995) Lidian Dian Wen. China Traditional Chinese Medicine Press, Beijing, 8.
- [7] Xie, B.D., Zhang, L.T., Wang, Z.L. and Wang, J. (2015) Recent Research Status of External Treatment of Traditional Chinese Medicine. *Central and Central Chinese Medicine Chinese Journal of Medicine*, **33**, 54-56.
- [8] Wang, S.C. (2012) Pediatrics of Traditional Chinese Medicine. China Traditional Chinese Medicine Press.
- [9] Wang, W.P. (2018) Pediatrics. People's Medical Publishing House, Beijing.
- [10] Yan, C.L. and Yan, C.L. (2019) Clinical Effect Analysis of Iodine Glycerin Combined with Lidocaine on Children with Herpes Stomatitis. *Journal of General Stomatology*, **6**, 32-34.
- [11] Du, G.L. (2019) Kuyanqing Granules Combined with Lidocaine Gummy in the Treatment of Children with Herpetic Stomatitis. *Journal of Clinical Medicine Engineering*, **27**, 599-600.
- [12] Bai, C.X., Wang, Y., Wang, Y., Wang, Y., *et al.* (20) Treatment of Herpetic Stomatitis in Children by Adenosine Monophosphate Combined with Kangfuxin Solution. *Chinese Journal of Modern Medicine Application*, **14**, 182-184.
- [13] Liu, R. (2021) Observation on the Effect of a New Type of Oral Local Iodine Glycerol in the Treatment of Children with Herpetic Stomatitis. The First Hospital of Qiqihar, Heilongjiang Province, 2021-03-10.
- [14] Wei, Z.Z., Fang, X.Y., Bai, M. and Miao, M.S. (2019) Analysis of External Treatment Mechanism of Traditional Chinese Medicine Based on Drug Administration Pathway. *Journal of Hunan University of Traditional Chinese Medicine*, **39**, 1162-1165. (In Chinese)