Nursing Experience in Treating a Patient with Toxic Epidermal Necrolysis Using Traditional Chinese Medicine External Application: A Case Report

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Abstract

This study analyzed the medical record of skin care management in a patient with toxic epidermal necrolysis (TEN). Through syndrome differentiation-based nursing care, the patient received external application of Huanglian Xiaozhong Ointment, a traditional Chinese medicine preparation, achieving therapeutic effects of heat-clearing, dampness-drying, swelling-reduction, and pain alleviation. Following 15 days of therapeutic nursing intervention, the patient's skin demonstrated gradual healing, with no incidence of unplanned extubation, resulting in pain alleviation, enhanced patient satisfaction, and improved quality of life.

Full Text

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Abstract

This article analyzes the medical record of skin care for one patient with toxic epidermal necrolysis (TEN). Through syndrome differentiation and nursing care, the patient was treated with Huanglian Xiaozhong Ointment applied externally, achieving therapeutic effects of clearing heat, drying dampness, reducing swelling, and relieving pain. After 15 days of treatment and nursing care,

the patient's skin began to heal gradually, with no unplanned extubation occurring, thereby alleviating suffering, improving patient satisfaction, and enhancing quality of life.

Keywords: Huanglian Xiaozhong Ointment; toxic epidermal necrolysis (TEN); traditional Chinese medicine external application

Introduction

Toxic epidermal necrolysis (TEN) is an acute, severe skin disease commonly caused by drugs, clinically characterized by blisters, epidermal detachment, and multi-site mucositis [1]. It represents the most severe form of drug eruption with a high mortality rate, with previous literature reporting that TEN patients have a mortality rate exceeding 30% [2]. TEN is marked by sudden onset, with skin lesions typically beginning on the face, neck, or chest and back. In the early stages, lesions may resemble erythema multiforme, measles-like, or scarlet fever-like rashes, rapidly progressing to diffuse purplish-red or dark red patches that spread throughout the body. On the basis of these erythematous patches, flaccid bullae or large blisters of varying sizes appear. Nikolsky's sign is positive, often forming extensive erosive surfaces with massive exudate, resembling scald injuries. The skin lesions are markedly painful and tender to touch. The eyes, oral cavity, respiratory tract, and digestive tract mucosa may all be involved, accompanied by severe internal organ damage [3]. Systemic symptoms such as high fever, chills, nausea, diarrhea, delirium, and coma are common. Without timely rescue, patients may die from infection, toxemia, renal failure, pneumonia, or hemorrhage [4]. In the treatment of this disease, timely, rational, and standardized nursing care is particularly crucial.

Through observation of this case, we believe that external application of Huanglian Xiaozhong Ointment demonstrates remarkable efficacy in treating toxic epidermal necrolysis, can alleviate patient anxiety, and—through the method of gauze bandaging for external fixation of central venous catheters (CVC)—prevents unplanned extubation. We now report the application effects as follows.

1. Clinical Data

The patient was a 72-year-old female admitted on November 19, 2023, with the chief complaint of "lung cancer discovered for over one year, accompanied by fever for one day." On admission, the patient was conscious and in fair spirits, with fever (temperature 39°C), scattered erythematous rashes on the limbs and trunk, pruritus, generalized fatigue, dry mouth, poor appetite, disturbed sleep requiring medication for assistance, loose stools 5-6 times daily, normal urination, dark red tongue with thin yellow coating, and a thready rapid pulse. The patient had previously shown disease progression on chest CT in September 2023 and had been treated with the oral targeted drug sunvozertinib to

date. Physical examination revealed temperature 39°C, pulse 112 beats/min, respiration 20 breaths/min, and blood pressure 127/72 mmHg.

Western medicine diagnosis: Left lung malignancy
Traditional Chinese medicine diagnosis: Lung cancer; Syndrome type: Phlegm-heat obstructing the lung

2.1.1 Assessment of Impaired Skin Integrity

Assessment of damaged area: Estimate the extent of skin detachment using percentage of body surface area, which is important for determining disease severity. For instance, total skin detachment exceeding 30% of body surface area constitutes a severe condition.

Observation of detachment sites: Carefully examine which areas show skin detachment, commonly involving mucosal sites such as the lips, oral cavity, conjunctiva, and genitalia, as well as skin throughout the trunk and extremities. For example, skin detachment on the hands may affect the patient's daily functions such as grasping.

Observation of detachment depth: Determine whether the detachment involves superficial epidermal loss or deeper detachment involving the dermis. Superficial detachment presents as flaccid bullae on an erythematous base with positive Nikolsky's sign (pressing the blister roof causes fluid to spread into surrounding epidermis; pulling detached stratum corneum leads to epidermal detachment), whereas deeper detachment requires longer recovery time and is more prone to scarring.

Observation of skin color changes: Note the presence of erythema or purpura around detached skin. Erythema indicates ongoing inflammation, while purpura may signify hemorrhagic tendency.

Toxic epidermal necrolysis is primarily divided into three stages:

Prodromal stage: Patients develop non-specific symptoms during this period, including fever, fatigue, and sore throat resembling upper respiratory tract infection. Pruritus or burning sensation may also occur as relatively mild cutaneous sensory abnormalities, though the skin appearance may show no obvious changes at this time. This stage is easily misdiagnosed as common illness.

Acute stage: This is the most severe period. The skin develops erythema that rapidly expands, followed by formation of flaccid bullae and epidermal detachment on the erythematous base. With gentle pressure, the epidermis sloughs off, resembling scalded skin—this is the typical manifestation known medically as positive Nikolsky's sign. The detachment may involve most of the body, including mucosal areas of the mouth, eyes, and genitalia, leading to oral mucosal erosion and difficulty eating; ocular involvement may cause conjunctivitis and corneal ulceration, severely affecting vision; genital mucosal erosion results in painful urination and defecation. Additionally, patients may

develop complications such as water-electrolyte imbalance and infection due to loss of skin barrier function, creating an extremely critical condition.

Recovery stage: During this period, the patient's skin begins to heal gradually. Without severe infection or other complications, the detached skin slowly regenerates new epidermis, during which pruritus may occur. Mucosal erosions also gradually repair, and functions such as eating, vision, and excretion gradually return to normal. However, after skin healing, pigmentation or scarring may remain, particularly in areas with deep and extensive detachment. The patient in this case was in the acute stage.

2.1.2 Assessment of Unplanned Extubation Risk

Based on three aspects—Glasgow Coma Scale (GCS) score, Richmond Agitation-Sedation Scale (RASS) score, and muscle strength score—an unplanned extubation assessment scale was developed. The highest score on this assessment scale is 10 points, and the lowest is 3 points. When the total assessment score is $ $6 points, the patient is classified as high-risk for unplanned extubation, requiring assessment and documentation every shift, dynamic reassessment, and completion of the "Nursing Record for Prevention of Unplanned Extubation." The unplanned extubation risk score for this patient was 9 points.

2.1.3 Anxiety Assessment

The Generalized Anxiety Disorder-2 (GAD-2) screening scale was used for assessment, with total scores ranging from 0 to 6 points, where higher scores indicate greater anxiety symptom severity. Low anxiety risk is defined as <3 points, and high anxiety risk as $ $3 points. This patient's GAD-2 score was 6 points, indicating high anxiety risk.

2.2 Nursing Diagnoses

- Risk for impaired skin integrity related to adverse skin reactions after immunotherapy
- Risk for unplanned extubation related to impaired skin integrity
- Anxiety related to lack of understanding of disease progression

2.3 Nursing Plan

Through lifestyle guidance, traditional Chinese medicine dietary instruction, emotional care, and application of characteristic traditional Chinese medicine techniques including external application of Huanglian Xiaozhong Ointment, we aimed to reduce the progression of toxic epidermal necrolysis, delay its staging, prevent unplanned extubation, and alleviate patient anxiety.

2.4.1 Conventional Nursing Care

Lifestyle care: Maintain a clean indoor environment with fresh air and appropriate temperature and humidity; ensure smooth, clean bedding and soft, comfortable clothing without rubbing the skin; keep the skin clean and dry, particularly in skin folds, to prevent irritation from sweat and secretions, but perform actions gently to avoid further epidermal detachment from external force. Regularly trim fingernails and prohibit scratching; maintain oral cleanliness to prevent oral infection.

Dietary care: Ensure adequate nutritional support by providing high-calorie, high-protein, high-vitamin, and easily digestible liquid or semi-liquid foods such as milk, egg custard, and vegetable puree. This is necessary because skin repair requires substantial nutrients, and oral mucosal erosion may affect eating; liquid or semi-liquid foods are relatively easy to swallow, and eating should be performed slowly to prevent choking.

Emotional care: Address patient anxiety through health education using various forms including text, images, and videos; employ emotional diversion, confusion resolution, and reasoning guidance for emotional support; explain disease-related knowledge to encourage confidence in overcoming the illness; family companionship can reduce patient anxiety; provide five-element music therapy—Jue mode enters the liver (e.g., "The Blue Danube" and "Jiangnan is Good"); Gong mode enters the spleen (e.g., "Spring Moonlight on the Flowers by the River" and "Moonlight Sonata"); Yu mode enters the kidney (e.g., violin concerto "Butterfly Lovers" and "Moon Reflected in Second Spring").

Gauze bandaging external fixation method for catheters: The CVC puncture site was covered with sterile dressing, wrapped externally with gauze, and secured with elastic bandage. The gauze was changed daily, and the puncture site and surrounding skin condition were observed.

2.4.2 Characteristic Traditional Chinese Medicine Nursing Technique

External application of Huanglian Xiaozhong Ointment: Traditional Chinese medicine external application involves applying medicated ointment to the affected area, allowing medicinal power to be absorbed through the skin and interstitial spaces to achieve therapeutic effects. Huanglian Xiaozhong Ointment comprises ingredients including Coptis, Phellodendron, Turmeric, Rehmannia root, and Angelica sinensis. In the formula, Coptis and Phellodendron clear heat, dry dampness, and resolve toxins; Turmeric breaks blood and moves Qi; Rehmannia root cools blood, nourishes yin, and moistens dryness; Angelica sinensis invigorates and nourishes blood. The combined action achieves the effects of clearing heat, drying dampness, reducing swelling, and relieving pain [5].

The specific operation method is as follows: First assess the patient's overall condition, inquire about allergy history, and examine local skin condition; then

assist the patient to a comfortable position, expose the affected area while maintaining warmth; apply Huanglian Xiaozhong Ointment evenly to the affected area, covering the detachment area with a thickness of approximately 5 mm, extending slightly beyond the edges. Maintain communication with the patient during treatment to promote relaxation and enhance therapeutic effect. Traditional Chinese medicine treatment was administered once daily for 7 days as one treatment course.

3. Results and Discussion

After 15 days of intervention with the characteristic traditional Chinese medicine technique of Huanglian Xiaozhong Ointment external application combined with conventional nursing measures, the patient's toxic epidermal necrolysis stage changed from acute to recovery phase. During hospitalization, no unplanned extubation occurred through the external gauze bandaging fixation method, and the patient's anxiety GAD-2 score decreased from 6 points to 2 points.

Toxic epidermal necrolysis (TEN) is a severe cutaneous-mucosal reaction, with 80% of cases caused by drugs, characterized by bullae and generalized epidermal detachment that may be accompanied by multi-system involvement [6]. TEN is easily confused with other skin diseases. For example, differentiation from erythema multiforme can be difficult. While erythema multiforme also presents with erythema and bullae, TEN shows more severe epidermal detachment that is typically more extensive. Accurate diagnosis requires detailed history taking (such as drug allergy history), clinical observation (such as whether Nikolsky's sign is positive), and histopathological examination. Early accurate diagnosis is crucial for improving prognosis because once the acute stage begins, extensive skin detachment and mucosal damage trigger multiple severe complications. For instance, infection can spread rapidly, and electrolyte imbalance may lead to serious consequences such as arrhythmia.

Huanglian Xiaozhong Ointment originates from "Liu Juanzi's Ghost-Bequeathed Prescriptions" from the Northern and Southern Dynasties period and has a long history of clinical application. Its composition includes Coptis, Phellodendron, Turmeric, Rehmannia root, and Angelica sinensis. In the formula, Coptis and Phellodendron clear heat, dry dampness, and resolve toxins; Turmeric breaks blood and moves Qi; Rehmannia root cools blood, nourishes yin, and moistens dryness; Angelica sinensis invigorates and nourishes blood. The combined action achieves the effects of clearing heat, drying dampness, reducing swelling, and relieving pain [5]. Clinically, it is commonly used for damp sores, scalds, and various swollen and painful sores [7].

Nursing care for patients with toxic epidermal necrolysis requires early detection, early intervention, and early treatment. Daily assessment of skin condition and leveraging the advantages of traditional Chinese medicine can solve problems for patients and achieve optimal therapeutic effects. This case demonstrated

significant improvement in skin problems for the TEN patient. In summary, external application of Huanglian Xiaozhong Ointment is an effective traditional Chinese medicine external treatment that can alleviate suffering in patients with toxic epidermal necrolysis. However, this case represents only a single effective instance, and systematic comparative studies are still lacking. Prospective large-sample clinical studies are needed for further verification.

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Note: Figure translations are in progress. See original paper for figures.