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## Experience of Integrated Traditional Chinese and Western Medicine Pain Nursing Care for a Gangrene Patient Under the Guidance of the Medical-Nursing Integration Model

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### Abstract

**Objective:** To investigate the application of a medical-nursing collaborative care model in integrated traditional Chinese and Western medicine pain management for diabetic foot complicated with infection.

**Methods:** A single patient with diabetic foot complicated with infection was selected from our department, and an integrated medical-nursing care model was implemented for combined Chinese-Western medicine pain management.

**Conclusion:** The integrated medical-nursing care model provides comprehensive, holistic, and continuous care, effectively relieving pain and suffering, improving quality of life, shortening disease duration, and demonstrating value for clinical promotion and application.

### Full Text

#### Integrated Medical-Nursing Model in the Management of Pain for a Gangrene Patient: Experience with Integrated Traditional Chinese and Western Medicine Nursing Care

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## Abstract

**Objective:** To explore the application of an integrated medical-nursing collaborative model in pain management for diabetic foot patients with infection using combined traditional Chinese and Western medicine approaches. **Methods:** A single case of diabetic foot complicated by infection was selected from our department. An integrated medical-nursing care model was implemented to deliver combined traditional Chinese and Western medicine pain management. **Conclusion:** The integrated medical-nursing model provides comprehensive, holistic, and continuous care that effectively alleviates pain, reduces suffering, improves quality of life, and shortens disease duration, making it worthy of clinical promotion and application.

**Keywords:** Diabetic foot; Gangrene; Integrated medical-nursing care; Combined traditional Chinese and Western medicine; Pain

## Introduction

The *Lingshu · Yongju* text states: “When [the lesion] originates in the toes, it is called ‘tuoyong’ [gangrene]. Its appearance is red-black and incurable; if not red-black, it is not fatal. If treatment does not improve the condition, death will follow.” This represents the earliest description of gangrene symptoms and outlines its prognosis and external treatment principles. During the Jin dynasty, Huangfu Mi changed “tuoyong” to “tuoju” (gangrene) in his *Jingjiu Jiayi Jing* (AB Classic of Acupuncture and Moxibustion). Once gangrene patients develop lower limb infection, ulcer formation, or deep tissue necrosis, the condition becomes extremely difficult to heal, and patients face the risk of amputation, severely impacting their quality of life and prognosis [1].

As a common surgical condition in traditional Chinese medicine (TCM), gangrene affects a broad population, frequently occurring in individuals with long-standing diabetes, prolonged exposure to cold-damp environments, or those with diets rich in fatty and sweet foods. The disease typically manifests at the terminal ends of the limbs and follows a prolonged course. Initial symptoms commonly include coolness and numbness at the extremities, which may progress to intermittent claudication and rest pain. In advanced stages, terminal ischemic necrosis and sloughing of toes occur, potentially leading to severe limb necrosis, amputation, and death. This condition corresponds to thromboangiitis obliterans, arteriosclerosis obliterans, and diabetic foot in Western medicine [2], characterized by a long disease course, severe pain, high risk of disability, and significant impact on quality of life.

The integrated medical-nursing model refers to a collaborative approach where physicians and nurses jointly manage patients and develop specific nursing interventions [3]. Research has demonstrated that integrated medical-nursing ward rounds enhance communication between medical and nursing staff, enabling both parties to jointly understand patient condition progression and evaluate treatment and nursing effectiveness [4]. This article summarizes our department’s

s experience with integrated medical-nursing model-guided pain management using combined TCM and Western medicine approaches for a case of gangrene (diabetic foot with infection).

## Clinical Case Data

The patient was a 70-year-old female with a 21-year history of elevated blood glucose. She presented with left foot ulceration and pain for over one year, worsening for one day, and was admitted on August 31, 2022, with a diagnosis of gangrene (diabetic foot gangrene with infection) and arteriosclerosis obliterans. Her medical history included depression for 15 years, diabetes for 21 years, and lacunar cerebral infarction for over four months. Specialized examination revealed a left heel ulcer measuring 9.5 cm in diameter with relatively fresh granulation tissue, small amounts of yellow-white purulent discharge, and painful wound. The distal lower legs and dorsal feet were cool to touch, with mild pitting edema of both lower legs. The foot skin was dry, with hair loss, thin and shiny skin, thickened and deformed toenails. Bilateral superficial femoral artery pulsation was markedly diminished, popliteal artery pulsation was weakened, and dorsalis pedis and posterior tibial arteries were non-palpable.

The patient's complex chronic conditions and multiple hospitalizations had resulted in declining economic status, psychological distress, and reduced quality of life. Using the integrated medical-nursing care model, we established collaborative communication and joint decision-making to provide continuous medical services [5]. An integrated physician-nurse-patient team was formed, consisting of the attending physician and two responsible nurses. The physician provided guidance to nurses from the perspective of TCM syndrome differentiation and professional research, while medical and nursing staff jointly collected patient data and collaboratively developed treatment and nursing plans. The team implemented an 8-hour on-duty, 24-hour responsibility system [6].

### 2.1 Integrated Medical-Nursing Ward Rounds

Bedside integrated ward rounds followed a three-step process: (1) The responsible nurse provided a comprehensive report on the patient's treatment and nursing care. (2) The night shift and oncoming nurses exchanged information regarding the patient's diet, bowel and bladder function, nursing treatments, and condition changes during their shifts. (3) The attending physician and responsible nurse summarized the patient's current condition progression and jointly formulated subsequent diagnostic and nursing plans.

### 2.2 Integrated Nursing Interventions

#### (1) Traditional Chinese Medicine Nursing Techniques

Gangrene represents a typical peripheral vascular disease in TCM surgery, with primary symptoms of local coolness, numbness, and pain in the limbs. Clinical

nursing focuses on alleviating pain and discomfort while increasing pain threshold. Therefore, ultrasonic drug delivery therapy was employed as a nursing intervention.

Ultrasonic drug delivery is a novel local drug administration technique that differs from conventional systemic intravenous delivery. This technology utilizes electroporation, ultrasonic cavitation, and iontophoresis to directly deliver selected medications to local target sites. During the delivery process, generated microcurrents and sonic waves dilate local blood vessels, accelerate blood circulation, and regulate local metabolism, thereby reducing inflammation, relieving swelling and pain, and releasing adhesions. Simultaneously, this approach stimulates local sensory nerves to elevate pain threshold. By achieving targeted local drug delivery, it reduces potential issues of low local drug concentration from intravenous administration and minimizes possible hepatotoxicity and nephrotoxicity from systemic drug distribution.

## (2) Traditional Chinese Medicine Emotional Care

TCM emotions refer to the five emotions and seven feelings, which follow generation and restriction cycles according to Five Elements theory. Emotional activities are transformed from the essence of the five viscera, and emotional abnormalities can lead to disturbances in essence, qi, blood, and spirit. TCM Five Elements music systematizes natural sounds by organically linking the five musical notes (Jue, Zhi, Gong, Shang, Yu) with the five viscera and seven emotions, thereby balancing yin-yang and regulating patient emotions to influence health. Five Elements music therapy has substantial theoretical support; when properly integrated with clinical practice and correctly applied, it achieves effective relief through simultaneous physical and emotional treatment. Our patient, chronically tormented by pain, was melancholic and depressed, which TCM classifies as belonging to the “Earth” element and treatable through “Wood” restriction. Gong-mode music was typically selected, with representative pieces including *Spring River Flower Moon Night* and *Ambush from Ten Sides*. For anxiety and depression caused by liver fire disturbing the heart, Shang-mode music was employed, with representative pieces including *General's Command* and *White Snow in Early Spring* [8].

### \*\* (3) Health Guidance

Following integrated medical-nursing model-guided combined TCM and Western medicine pain care, the patient's disease course was shortened, gangrenous pain was alleviated, distal lower leg and dorsal foot skin temperature improved, and mild pitting edema resolved. Patients were instructed to attend regular follow-up examinations, maintain a home environment with soft lighting, appropriate temperature and humidity, and avoid noise. They were advised to avoid wind-cold, maintain proper daily routines, protect affected toes, prevent trauma and compression, wear loose, comfortable, non-constrictive footwear, actively treat tinea pedis to prevent infection, take medication regularly, monitor and control blood pressure and glucose, perform lower limb functional exercises

to promote qi-blood circulation and restore limb function, and balance work with rest while avoiding prolonged maintenance of the same posture (such as prolonged standing).

Diabetic foot ulcers complicated by infection present complex conditions that cause significant suffering. Successful implementation of refined clinical nursing pathways requires cooperation among physicians, nurses, and patients [9]. The integrated medical-nursing model is patient-centered and strengthens collaborative effects between physicians and nurses. Physician and nurse participation in this model facilitates follow-up and improvement of treatment protocols, promotes therapeutic efficacy, and enables selection of more effective nursing interventions beyond basic care [10]. This case demonstrates that applying the integrated medical-nursing model with collaborative physician-nurse cooperation, guided by physician TCM syndrome differentiation and specialized direction, enabled development of combined TCM and Western medicine nursing measures to relieve pain. Throughout the treatment and nursing period, medical and nursing staff jointly understood the patient's pain status, treatment progress, and nursing conditions, allowing timely adjustment of treatment and nursing plans. This comprehensive, holistic, and continuous care effectively reduced pain, improved quality of life, and maximized rehabilitation, making it worthy of clinical promotion and application.

**References** [1] TCM Clinical Nursing Textbook [2] Zhihui, Liu Jinjing, Guo Jing, Wang Xiaodi, Tong Fenfei, Zheng Wen, E Haiyan, Tang Ling. Observation on the effect of integrated traditional Chinese and Western medicine nursing intervention in high-risk diabetic foot patients[J]. Chinese Journal of Integrative Nursing, 2022, 8(8): 2-7. [3] Jiang Hongmei. Analysis of the influence of integrated medical-nursing rehabilitation nursing intervention on the quality of life of elderly diabetic nephropathy patients undergoing peritoneal dialysis[J]. Primary Medical Forum, 2021, 25(3): 387-388. [4] Feng Jiawen, Lu Haizhen. Observation on the implementation effect of integrated medical-nursing ward round mode in clinical nursing services[J]. World Latest Medicine Information (Electronic Journal), 2021, 21(10): 340-341. [5] Yang Qingqing. Application of integrated medical-nursing ward rounds in COPD patients in medical alliance wards[J]. Contemporary Nurse (Late Issue), 2021, 28(3): 179-180. [6] Wang Huanhuan, Zhang Yanfeng. Analysis of the influence of integrated physician-nurse-patient program on nursing quality of glioma patients[J]. Primary Medical Forum, 2022, 26(21): 50-52. DOI:10.19435/j.1672-1721.2022.21.017. [8] Lu Yanhua, Shi Tian. Application of medium-frequency pulse electrical stimulation combined with ultrasonic drug delivery in blind insertion of spiral nasointestinal tubes in neurocritical patients[J]. Chinese Journal of Integrative Nursing, 2022, 8(9): 75-79. [9] Han Jing, Wang Yanlan, Zhang Xuechang, et al. Application of integrated physician-nurse-patient nursing pathway in minimally invasive surgery for hypertensive intracerebral hemorrhage[J]. Fujian Medical Journal, 2022, 44(3): 172-174. [10] Ji Yanni, Chen Long, Liu Yujie, et al. Influence of integrated medical-nursing management on fatigue and quality of life in advanced nasopharyngeal carcinoma patients after PD-1 later-line therapy[J].

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