

Research Progress on Integrated Continuous Management of Chronic Non-healing Wounds

Mei Wang¹, Fang Li¹, Chunli Yang², Yaohan Ai³, Fang Wang^{4*}

¹The 55th Retired Cadre Sanatorium, Beijing Garrison Command, Haidian District, Beijing 100036, China

²Zaozhuang Central Hospital of Shandong Guoxin Yiyang Group, Xuecheng District, Zaozhuang, Shandong 277000, China

³The 2nd Retired Cadre Sanatorium, Beijing Garrison Command, Haidian District, Beijing 100039, China

⁴China-Japan Friendship Hospital, Chaoyang District, Beijing 100029, China

**Author to whom correspondence should be addressed.*

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Abstract: Chronic non-healing wounds are common and intractable clinical conditions with long healing cycles and high treatment difficulty, which impose heavy physical and psychological burdens on patients and increase pressure on the medical system. Integrated continuous management is a new medical management model that integrates prevention, assessment, intervention, rehabilitation and follow-up of chronic non-healing wounds. It emphasizes multidisciplinary collaboration, connection between diagnosis, treatment and nursing, and linkage between in-hospital and out-of-hospital care, providing systematic and comprehensive guarantee for wound healing. This paper reviews the connotation, significance, clinical practice points, current research status, existing problems and future development directions of integrated continuous management of chronic non-healing wounds, sorts out the field of chronic non-healing wound management, provides reference for clinical relevant management, and promotes the improvement and perfection of chronic non-healing wound management modes.

Keywords: Chronic non-healing wounds; Integrated management; Continuous management; Wound care; Multidisciplinary collaboration

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1. Introduction

With the intensification of population aging and the rising prevalence of chronic diseases, the incidence of chronic non-healing wounds remains high. The traditional fragmented management model can no longer meet the requirements of clinical diagnosis, treatment and nursing^[1]. The integrated continuous management model breaks through disciplinary barriers and the division of diagnosis and treatment links, integrates multidisciplinary resources, whole-process intervention and in-hospital and out-of-hospital linkage, providing new ideas and methods for the treatment and nursing of chronic non-healing wounds. In recent years, scholars at home and abroad have carried out many studies on the connotation, implementation approaches and clinical application of this management model and made progress. Based on relevant research results,

this paper reviews the research progress of integrated continuous management of chronic non-healing wounds to provide reference for clinical practice and follow-up research.

2. Connotation and significance of integrated continuous management of chronic non-healing wounds

2.1. Core connotation

Integrated continuous management of chronic non-healing wounds focuses on the whole process, multi-dimension and collaboration, overcomes the fragmentation in traditional diagnosis and treatment, and organically connects all links of wound management to form a complete management chain from prevention to rehabilitation and from in-hospital to out-of-hospital ^[2]. The core connotation includes two aspects: integration means multidisciplinary collaboration, combination of diagnosis, treatment and nursing, combination of local and systemic conditions, integrating resources of medical treatment, nursing, rehabilitation, nutrition, psychology and other aspects to provide all-round and personalized comprehensive intervention for patients; continuity means continuous and sustainable management throughout the whole process of wound occurrence, development, healing and rehabilitation, ensuring seamless connection between in-hospital diagnosis and treatment and out-of-hospital follow-up, acute intervention and long-term rehabilitation, and preventing management gaps ^[3].

2.2. Management significance

For patients, this management model can integrate various medical resources to provide standardized and systematic diagnosis, treatment and nursing services, promote wound healing, reduce complications and wound recurrence rate, relieve pain, improve limb function and quality of life, reduce the frequency of hospital visits, and alleviate patients' economic and psychological pressure ^[4].

Integrated continuous management can improve the allocation of medical resources, avoid repeated examinations and excessive treatment, thereby improving the efficiency of medical services, reducing medical costs and alleviating the shortage of medical resources. In addition, standardizing medical quality control management processes and unifying diagnosis and treatment service standards can improve medical service quality and reduce the probability of doctor-patient disputes ^[5].

For disciplinary development, integrated continuous management promotes mutual penetration of multiple disciplines, coordinates the development of wound repair, nursing, rehabilitation and other disciplines, promotes the innovation of management concepts and technical methods, endows new ideas for the research of chronic non-healing wounds, helps to enrich the theoretical framework and operating guidelines of wound management, and supports the development of the wound repair field ^[6].

3. Key points of clinical practice of integrated continuous management of chronic non-healing wounds

3.1. Practice of multidisciplinary collaboration model

Multidisciplinary collaboration is an important support for integrated continuous management. In clinical practice, a sound multidisciplinary collaboration system should be established to clarify the responsibilities and division of labor of each discipline, so as to achieve resource sharing and collaborative work ^[7]. Generally, the multidisciplinary team consists of personnel from wound repair department, nursing department, rehabilitation department, nutrition department, psychology department, endocrinology

department, vascular surgery and other related departments, forming a personalized multidisciplinary collaboration group according to the patient's condition. In clinical practice, the multidisciplinary team conducts comprehensive evaluation of the patient's condition through regular consultations and case discussions, formulates a management plan in line with the patient's actual situation, and determines the intervention priorities and time nodes of each discipline. The wound repair department is responsible for local wound treatment and diagnosis; the nursing department provides wound care and health guidance; the rehabilitation department carries out functional rehabilitation training; the nutrition department provides nutritional support; the psychology department conducts psychological intervention; the endocrinology department controls the patient's underlying diseases. Through multidisciplinary cooperation, all-round and comprehensive care for patients is achieved, solving problems that cannot be solved by a single discipline, and improving management outcomes^[8].

3.2. Practice of local wound management

Local wound management is the focus of intervention for chronic non-healing wounds, with the core of creating a good local environment for wound healing and promoting wound tissue repair. In clinical practice, standardized local treatment measures should be implemented according to the specific conditions of the wound, including debridement, infection control and dressing selection^[9]. Debridement is the basis of local wound treatment, removing necrotic tissue, foreign bodies and secretions on the wound, reducing the risk of infection and promoting granulation tissue growth. The debridement method should be selected according to the wound condition, emphasizing appropriate debridement to avoid excessive damage to healthy tissue. Infection control is an important guarantee for wound healing. It is necessary to strengthen the observation of wound secretions, detect signs of infection in time, take appropriate anti-infection measures, pay attention to wound cleaning and care, maintain a dry or moist wound state, select appropriate dressings according to wound exudation, and promote wound healing.

3.3. Practice of systemic condition regulation

The healing of chronic non-healing wounds is greatly affected by the patient's systemic condition, so systemic condition regulation is an important part of integrated continuous management^[10]. In clinical practice, attention should be paid to the patient's nutritional status, underlying diseases, psychological state and other aspects, and corresponding regulation measures should be taken. Nutritional support is an important guarantee to promote wound healing. A personalized nutrition plan should be formulated according to the patient's nutritional status to ensure that patients obtain sufficient protein, vitamins, minerals and other nutrients, improve the patient's nutritional status, enhance the body's resistance, and promote wound tissue repair. Controlling underlying diseases is the key. For patients with diabetes, hypertension, vascular diseases and other underlying diseases, the monitoring and control of underlying diseases should be strengthened to stabilize the patient's condition and reduce the impact of underlying diseases on wound healing. Psychological intervention is part of systemic condition regulation. Patients with chronic non-healing wounds often have negative emotions such as anxiety and depression due to long course of disease, obvious pain and easy recurrence. Negative emotions affect the body's immune function and thus wound healing. Therefore, it is necessary to conduct psychological assessment on patients, detect negative emotions in time, and use psychological counseling, emotional comfort, health education and other methods to relieve patients' negative emotions and enhance their compliance with treatment and nursing.

3.4. Practice of transitional care

Transitional care is an important link to ensure the continuity of management, which can realize the seamless connection between in-hospital treatment and out-of-hospital management and provide long-term nursing assistance for patients^[11]. In clinical practice, a complete transitional care system should be established to clarify the content, form and process of transitional care, ensuring the standardization and effectiveness of transitional care. The content of transitional care mainly includes wound care guidance, health education, condition observation and complication prevention and treatment. Guide patients and their families to master wound care methods such as dressing change, wound cleaning and self-monitoring to improve patients' self-care ability; popularize knowledge about wound rehabilitation and recurrence prevention to patients and their families through health education to enhance their health awareness; regularly check the patient's wound healing and systemic condition and deal with abnormalities in time; strengthen guidance on complication prevention to avoid complications. Transitional care can be carried out in the forms of telephone follow-up, online follow-up, home visits, community nursing and so on. Appropriate follow-up methods should be selected according to the patient's actual situation to ensure the timeliness and effectiveness of follow-up.

4. Current research status of integrated continuous management of chronic non-healing wounds

4.1. Foreign research status

Foreign research on integrated continuous management of chronic non-healing wounds started relatively early and has formed a relatively complete integrated continuous management system and practice model. Foreign research pays more attention to the standardization and refinement of multidisciplinary collaboration, establishes specialized wound management centers, integrates resources of various disciplines, and provides one-stop diagnosis, treatment and nursing services for patients. In addition, attention is paid to the diversification and intelligence of transitional care. Information technology is used to build an online management platform to implement remote monitoring and guidance for patients, improving the efficiency and quality of transitional care. Foreign research focuses on the innovation and improvement of management methods, constantly improving management processes and intervention measures based on evidence-based medical evidence, emphasizing personalized management and prevention-oriented concepts, and cultivating patients' self-management ability, forming a complete management chain of prevention, evaluation, intervention, rehabilitation and follow-up with good management effects. At present, the focus of foreign research is mainly on the improvement of multidisciplinary collaboration models, the application of intelligent management technology, and the innovation of transitional care models, so as to make management more scientific and effective^[12].

4.2. Domestic research status

In recent years, domestic attention to integrated continuous management of chronic non-healing wounds has continued to increase, and relevant research has become more and more abundant with fruitful results. Domestic research mainly starts from the establishment and implementation of multidisciplinary collaboration models, the improvement of transitional care systems, and the exploration of integrated traditional Chinese and Western medicine management models, shaping a management model with Chinese characteristics according to China's medical conditions and patient characteristics. Many hospitals in China have set up

wound repair centers and established multidisciplinary-led wound repair teams to conduct multidisciplinary consultations and case discussions for patients, providing comprehensive treatment and nursing services. In terms of transitional care, an in-hospital and out-of-hospital linked transitional care system has gradually been formed, and diversified transitional care methods such as telephone follow-up, online follow-up and community nursing have been tried, improving the continuity of management. The integrated traditional Chinese and Western medicine management model has also become a research hotspot in China, combining traditional Chinese medicine theory with modern medical technology to improve intervention measures and increase the wound healing rate. In addition, domestic research also pays attention to health education and the cultivation of patients' self-management ability, popularizing knowledge about wound management to patients in various ways to improve patients' self-care ability and treatment compliance. However, on the whole, compared with mature foreign management models, domestic research lacks the establishment of multidisciplinary cooperation mechanisms and the implementation of continuous nursing, with problems such as inconsistent management standards and large regional development differences, which still need further research and improvement ^[13].

5. Future development directions of integrated continuous management of chronic non-healing wounds

Improve the multidisciplinary collaboration mechanism, establish standardized multidisciplinary collaboration systems, clarify the responsibilities and division of labor of each discipline, strengthen communication and collaboration among disciplines, establish professional multidisciplinary collaboration teams, equip dedicated team coordinators, and improve collaboration efficiency and quality. In addition, promote the standardization of the multidisciplinary cooperation model, formulate unified collaboration processes and evaluation standards, and carry out multidisciplinary cooperation in a standardized manner ^[14].

Promote the intelligence and diversification of transitional care. Use information technology and Internet technology to build an online transitional care platform to complete remote monitoring, online guidance and health notification for patients, so as to optimize the quality and efficiency of transitional care. Strengthen the construction of community health service systems, improve the professional literacy of community nurses, promote transitional care to go deep into communities, achieve seamless connection between in-hospital and out-of-hospital management, and strengthen health education for patients and their families to enhance their awareness and participation in transitional care.

Establish unified management standards and norms. Based on evidence-based medical evidence, formulate standard processes, intervention methods and evaluation indicators for integrated continuous management of chronic non-healing wounds, achieve standardized and normalized management, improve management quality and homogeneity, and facilitate quality control and effect evaluation ^[15].

Strengthen the research and practice of personalized management. Establish personalized management models according to patients' actual conditions and formulate precise management plans to improve the targeting and effectiveness of management. At the same time, pay attention to the innovation and improvement of the integrated traditional Chinese and Western medicine management model, and use the advantages of traditional medicine and modern medicine to provide better comprehensive intervention services for patients.

6. Conclusion

Integrated continuous management of chronic non-healing wounds is a scientific and systematic management model covering the whole process of wound prevention, assessment, intervention, rehabilitation and follow-up. It emphasizes multidisciplinary collaboration, connection between diagnosis, treatment and nursing, and linkage between in-hospital and out-of-hospital care, which can promote wound healing, improve patients' quality of life, save medical resources, and is of great significance to the development of the wound repair field. At present, this management model has achieved certain development in clinical practice, but there are still deficiencies such as imperfect multidisciplinary collaboration mechanisms, inadequate implementation of transitional care, and low standardization of management. In the future, we should continuously improve the management model through improving the multidisciplinary collaboration mechanism, promoting the intelligence of transitional care, establishing unified management standards, and strengthening personalized management, improve management quality and effectiveness, and provide better, more efficient and continuous services for patients with chronic non-healing wounds.

Disclosure statement

The authors declare no conflict of interest.

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