

Case Study

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Nursing Care for a Patient in the Course of Diabetic Foot with the Use of Innovative URGO Dressings that Stimulate Wound Healing

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Admission

In the 21st century, diabetic foot syndrome (ZSC) affects patients with advanced diabetes. Referring to the scope of the WHO World Health Organization, "diabetic foot syndrome" is the result of infection, small and large blood vessels in the features of neuropathic nerve fibers resulting from increased blood glucose levels, as well as ischemia of varying levels. Untreated diabetic foot can be completed even to amputation ends in different ways of healing managed by patients whose chances of improvement in health can also be used using therapy [1-5].

Neuropathic diabetic foot assess the presence of warm, pink skin. The neuropathic foot has a disturbed feeling of touch, vibration and temperature with a palpable pulse on the tibial arteries as well as the dorsal foot. The use of finger gangrene, calluses, neuropathic edema and painless ulcers may occur [6-9].

The degree of progression of changes in the course of ZSC can be assessed on the basis of Wagner's classification:

- Grade 0 - high-risk diabetic foot without ulceration.




- Grade I - superficial ulceration.
- Stage II - deep ulceration, penetrating into muscles and joints.
- Stage III - advanced lesions involving bone structures end with (abscesses)

To apply bacterial colonization of the wound, it is important to use antiseptics. This effect can be achieved with the participation of specialized medical dressings consisting of silver nitrate, iodopovidone, silver salt and sulfadiazine. A very important goal of local treatment of ulcerated lower legs is to stimulate granulation processes and to cleanse lesions from necrotic tissues [10-14].

Aim of the study: The aim of the work is to show the ability to use the most modern and innovative methods of wound healing through proper treatment of wounds, and the selection of specialist URGO dressings by a nurse for a patient with a diabetic foot.

Case study: A 70-year-old patient admitted to the surgical ward because of diabetic foot syndrome (ZSC), type II diabetes, allodynia occurs. The patient was treated using specialist URGO dressings.

Problem care	The purpose of the planned activities nursing	Planned interventions nursing	Justification of the planned intervention nursing	Rating implemented activities nursing
Risk of wound infection due to full skin thickness	Development of dead tissue -Preventing wound infection by controlling infection - Keeping the wound environment moist - Awakening of the epidermis around the edges of the wound	Introduction to granulation - Implementation of TIME therapy	The nurse follows the standards of aseptic and antiseptic behavior. In the treatment of local wounds, the TIME principle is important, based on a holistic approach by wound cleansing with lavage ide (Octenilin), bacteriological control and the selection of appropriate dressings for moist wound healing. A comprehensive cleansing effect was demonstrated by the UrgoClean Ag dressing. Using a gelling TLC matrix, the optimally moist wound environment has been preserved. This dressing requires the use of a secondary UrgoTul Absorb dressing [1,3,7]	Wound infection did not occur. Antibiophilic silver dressing reduced the number of bacteria in the wound. Optimal conditions were created in the wound bed. UrgoClean Ag UrgoTul Ag/Silver

Problem care	The purpose of the planned activities nursing	Planned interventions nursing	Justification of the planned intervention nursing	Rating implemented activities nursing
1st degree of diabetic foot ulcer according to Wagner classification, affecting the quality of life of the patient	Leading to the granulation process	Cleansing wounds with lavage ide (0.9% NaCl) and removing dead tissues until healthy. Then use the contact dressing indicated for the treatment of wounds with a small exudate UrgoTul Ag / Silver. Dressing application in size 10x12cm directly on the wound so that it is 1-2 cm larger than the edges of the wound. The UrgoTul Ag / Silver dressing requires a secondary dressing UrgoTul Absorb that protects the skin around the wound. Apply the bandage after applying the dressing. -Stimulation of the granulation process involves cleansing the wound so that it can cover the connective tissue. -The process of wound healing of the diabetic foot affects: adequate hydration, metabolically balanced blood glucose, normal diabetic diet	Wound area decreased. The wound bedding was 70% granulated. The use of specialist UrgoTul dressings has positively influenced the wound healing process [12, 11].	Wound area decreased. The wound bedding was 70% granulated. The use of specialist UrgoTul dressings has positively influenced the wound healing process.  
Problem care	The purpose of the planned activities nursing	Planned interventions nursing	Justification of the planned intervention nursing	Rating implemented activities nursing
The risk of infection with aerobic or anaerobic bacteria as a result of sensory nerve damage.	Reducing the risk of infection.	Reduction of incorrect pressure by unloading footwear -Regular observation of the patient's feet -Use TLC-Ag dressings	As a result of abnormal pressure of the foot on the ground, the risk of corneal infection increases and the subcutaneous layer is damaged. The skin is weakened; it often breaks, giving the beginning of an ulcer. Constant overpressure on the foot, contributes to the relaxation of joint joints, the occurrence of bone debris. The use of unloading footwear counteracts pathology. -In the use of TLC-Ag dressings, it removes 99.9% of bacteria (Staphylococcus aureus and Pseudomonas aeruginosa), combating the risk of bacterial infections [2, 3].	The risk of infection has decreased. The use of unloading footwear has reduced the risk of subsequent calluses. The skin surrounding the ulcer without signs of infection. 

Problem care	The purpose of the planned activities nursing	Planned interventions nursing	Justification of the planned intervention nursing	Rating implemented activities nursing
Pain in the patient 6 points in the VAS scale	Reduction of pain in a patient with a strong for optimal.	The use of VAC therapy -The use of new generation dressings -Elimination of pain - Diagnosing the patient with the disease entity	The use of VAC therapy in the 90mmHg range allows faster healing of the wound on the forefoot by absorbing significant secretions with bacteria. In addition, it provides adequate moisture to the wound for better healing. Treatment with negative pressure affects the process of granulation production, improving blood circulation. - In the NPWT negative pressure therapy, the UrgoTul Ag / Silver dressing was used as a contact layer. Their use shortens the time of treatment, preventing the ingrowth of the sponge into the tissues during NPWT [8, 9].	Pain in the patient decreased from 6pts to 3 points. Pain complaints have been minimized. UrgoClean Ag UrgoTul Ag/Silver

Problem care	The purpose of the planned activities nursing	Planned interventions nursing	Justification of the planned intervention nursing	Rating implemented activities nursing
Edema of the patient's limbs due to venous insufficiency due to chronic heart failure	Reduction of pain by creating a gradual compression by compressing.	Implementation of compression therapy using UrgoTul Ag dressing with UrgoTul Absorb to create a moist wound healing environment. - Maintaining constant tension by donning bandages	The wound on the lower leg was provided with compression therapy in order to exert pressure on the deep veins, directing the flow of blood towards the heart. The use of UrgoTul Ag / Silver dressings with a secondary UrgoTul Absorb dressing to absorb exudate from the wound with a change every 3 days. Accessive compression using tissue bandages improves venous problems [2, 4, 14].	Patient's lower extremity edema decreased by directing fluids to lymphatic and blood vessels. UrgoTul UrgoTul Absorb UrgoTul Absorb Border

Discussion

The concept of wound healing TIME was used, which consists in creating wound bed moisture. Modern dressings are designed on the basis of alginates, hydrogels, hydro fibers, hydrocolloids, polyurethane foams, dextranomers, and lawaseptics enabling the flushing of pathogens from the wound and destruction of the biofilm. 0.9% NaCl, multi-electrolyte fluid (PWE), Ringer's fluid and octenidine are used to wash wounds. The patient's wound healing process included the following factors: proper nutrition, immune status and mental condition of the patient [4, 6, 10, 12].

The TIME strategy in accordance with the guidelines of the Polish Society of Wound Treatment defines ((T) tissue, (I) infection, (M) moisture management, (E) edge of wound). The procedure involves developing the tissue by cleaning it, controlling infection, applying a moist wound environment that is important in the treatment process, paying attention to the edges of the wound and stimulating the epidermis [11, 14].

In this case, study, the wound was first cleaned with Law septic (octenilin), and then the UrgoTul Ag dressing was applied directly to the wound. Due to the significant wound exudate, UrgoTul Ag required the use of a secondary UrgoTul Absorb dressing [10, 13]

According to the research of Zieliński et al., "The dressing made in TLC technology has a positive effect on the stimulation of fibroblast mito [1, 3, 4].

Diabetic foot ulcers lead to limb amputation. According to studies, 85% of limb amputations precede diabetic foot ulcers. Ulcers are particularly vulnerable to infections that spread quickly. Foot ulcers are associated with peripheral neuropathies (lack of sensation) and ischemia (insufficient blood supply) [8, 9].

Multidisciplinary care in successful treatment includes choosing a specialized dressing, wound care, reducing pressure on soft tissues, and treatment based on culture results. In relation to the described case study, the increased benefit of specialist care concerned three elements: NPWT, relief with special footwear and selection of specialist UrgoTul dressings [3, 8].

After using NPWT on a neuropathic diabetic foot, lipid colloid (UrgoTul) was used. They showed accelerated wound healing and improved the patient's quality of life. UrgoTul dressing thanks to the phenomenon of adhesion enabled painless application and change of dressing. Due to the risk of bacterial infection, a line of lipid colloid enriched with active silver ions (Ag +) was used. Active silver ions

in the UrgoTul Ag / Silver dressing interact with bacterial DNA, thereby removing 99.9% of bacteria in 1 day [8, 11, 13].

Conclusions

The nurse, according to her knowledge and skills about wound healing, makes the right nursing diagnosis by assessing the place and area of wound formation, secretion coming out in terms of its color; smell and I use the VAS scale to assess pain occurring in a patient. The nurse assesses the deficit in self-care and the patient's knowledge about her illness. The use of specialist URGO dressings in the patient leads to effective wound healing. Thanks to the patient's local treatment: Urgo-Clean Ag (change every 48 hours), UrgoTul Ag / Silver and the use of UrgoTul Absorb dressing, significant wound hydration was achieved with visible improvement in skin condition. The VAC® system, due to the continuous suction of secretions from the neuropathic diabetic foot, prevented the patient from developing pathogens. The unique properties of TLC-Ag dressings have shown high anti-bacterial efficiency, thus accelerating wound healing.

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