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NURSING CARE FOR IMPAIRED SKIN INTEGRITY IN POSTOPERATIVE PATIENTS WITH DIABETES MELLITUS ULCER DEBRIDEMENT MODERN WOUND TREATMENT PROCEDURES DRESSINGS IN BAKTI TIMAH KARIMUN HOSPITAL

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Abstract

Background: Diabetes mellitus ulcers are open wounds on the surface of the skin due to macroangiopathy complications resulting in vascular insufficiency and neuropathy and can develop into infections caused by aerobic and anaerobic bacteria (Hastuti in Supriyadi, 2017). Objective: to describe nursing care for impaired skin integrity in post-operative patients with debridement of diabetes mellitus ulcers using modern wound care dressings at RSBT Karimun. Method: This research design is descriptive in the form of a case study. The subjects used in this study were two patients after surgical debridement of diabetes mellitus ulcers. This research was conducted in March 2022. The results of providing modern wound care dressings carried out once a day for three days can overcome skin/tissue integrity disorders experienced by patients following diabetes mellitus ulcer debridement surgery. The effect is proven, namely that in patient 1 the problem was resolved partly because There are still open wounds so further action must be taken by the nurse or family themselves because in patient 1 the wound healing process has entered the proliferation or fibroplasia phase. Meanwhile, Patient 2's problem has not been resolved because there is still an open wound with the same area and depth as at the beginning because patient 2 is still in the inflammatory phase in the wound healing process. Conclusion: Providing modern wound care procedures, dressing is one of the wound treatments that can improve skin/tissue integrity disorders in patients following diabetes mellitus ulcer debridement surgery.

Keywords: Diabetes mellitus ulcers, skin integrity disorders, wound care.

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Asuhan Keperawatan Gangguan Integritas Kulit Pada Pasien Post Operasi Debridemen Ulkus Diabetes Melitus Dengan Tindakan Perawatan Luka *Modern Dressing* Di Rumah Sakit Bakti Timah Karimun

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Abstrak

Latar belakang: Ulkus diabetes melitus merupakan luka terbuka pada permukaan kulit karena adanya komplikasi makroangiopati sehingga terjadi vaskuler insusifiensi dan neuropati dan dapat berkembang menjadi infeksi disebabkan oleh bakteri aerob maupun anaerob (Hastuti dalam Supriyadi, 2017). **Tujuan** : untuk gambaran Asuhan Keperawatan Gangguan Integritas Kulit pada Pasien Post Operasi Debridemen Ulkus Diabetes Melitus dengan Tindakan Perawatan Luka Modern Dressing di RSBT Karimun. **Metode** : desain penelitian ini adalah desktiptif dalam bentuk studi kasus. Subyek yang digunakan dalam penelitian ini adalah dua orang pasien post operasi debridemen ulkus diabetes melitus. Penelitian ini dilakukan pada Maret 2022. **Hasil** pemberian tindakan perawatan luka moderen dresing yang dilakukan sebanyak satu kali dalam sehari selama tiga hari hari dapat mengatasi gangguan integritas kulit/ jaringan yang dialami oleh pasien post operasi debridemen ulkus diabetes melitus terbukti pengaruhnya yaitu pada pasien 1 masalah teratasi sebagian karena masih terdapat luka terbuka sehingga tindakan harus secara lanjut dilakukan oleh perawat ataupun keluarga sendiri disebabkan pada pasien 1 dalam proses penyembuhan luka sudah masuk ke dalam fase proliferasi atau fibroplasia. Sedangakan Pasien 2 masalah belum teratasi karena masih terdapat luka terbuka dengan luas dan kedalaman yang sama seperti awal disebabkan pasien 2 dalam proses penyembuhan luka masih masuk ke dalam fase inflamasi. **Kesimpulan**: pemberian tindakan perawatan luka moderen dresing merupakan salah satu perawatan luka yang dapat memperbaiki gangguan integritas kulit/jaringan pada pasien post operasi debridemen ulkus diabetes mellitus.

Kata Kunci: Ulkus diabetes melitus, Gangguan integritas kulit, Perawatan luka.

Introduction

Background

Diabetes mellitus is a chronic metabolic disorder characterized by increased blood glucose (hyperglycemia), caused by an imbalance between insulin supply and demand. Insulin in the body is needed to facilitate the entry of glucose into cells so that it can be used for metabolism and cell growth. Reduced or absent insulin causes glucose to be retained in the blood and causes an increase in blood sugar, while cells become deprived of glucose which is needed for cell survival and function (Tarwoto et al 2012). Diabetes mellitus is known as a silent killer because the sufferer often does not realize it and when it is discovered complications have occurred (Ministry of Health of the Republic of Indonesia, 2014).

According to the International Diabetes Federation (IDF), in 2015 the number of people suffering from diabetes mellitus in the world was 415 million. In 2040 this will increase to 2152 million. There were 10 million cases of diabetes in Indonesia in 2015. The World Health Organization (WHO) estimates that by 2030 there will be 21.3 million people with diabetes mellitus in Indonesia. This condition makes Indonesia rank fourth after the United States, China and India.

Based on 2018 Basic Health Research (Riskesdes) data, the prevalence of diabetes mellitus sufferers in Indonesia among residents ≥15 years old is 8.5%. Analysis of the proportion of diabetes mellitus based on characteristics shows that diabetes mellitus is mostly found in the 45-54 year age group (29.3%) and the 55-64 year age group (28.4%). Based on gender, most people with diabetes mellitus are women, namely 60.7%. Most diabetes mellitus sufferers live in urban areas (52.6%).]

The prevalence of Diabetes Mellitus in 2013 increased in Banten Province with a prevalence of 1.6% diagnosed with diabetes mellitus and 1.3% having been diagnosed with diabetes mellitus or experiencing symptoms of Diabetes Mellitus (Ministry of Health, 2013). One of the cities in Banten Province, namely, South Tangerang City, has the highest incidence of diabetes mellitus, ranking first compared to cases of other diseases. In this case, there were 2,544 diabetes mellitus outpatients on Karimun Island, and this case became the first priority in reducing the incidence of diabetes mellitus on Karimun Island in 2014 (Dinkes, 2014).

The prevalence of diabetes mellitus ulcer patients in 2021 at RSBT Karimun is 146 people with a percentage of 0.41% (RSBT medical records 2021).

Diabetes mellitus ulcer treatment basically consists of 3 main components, namely debridement, reducing the pressure load on the foot, and treating infection. One form of ulcer prevention that can be done is foot care. Foot care is a daily activity for diabetes mellitus patients which consists of checking the condition of the feet every day, maintaining foot hygiene, cutting nails, choosing good footwear, preventing injury to the feet. Good foot care can prevent and reduce diabetic complications by up to 50% (American Diabetic Association, 2012).

Diabetes mellitus ulcers are open wounds on the surface of the skin due to macroangiopathy complications resulting in vascular insufficiency and neuropathy. Further conditions include wounds in sufferers that are often not felt, and can develop into

infections caused by aerobic and anaerobic bacteria (Hastuti in Supriyadi, 2017) .

Often called diabetic foot, ulcers on the feet of diabetics are caused by three factors which are often called the triad, namely ischemia, neuropathy and infection. Uncontrolled diabetes mellitus will cause thickening of the intima (hyperplasia of the arterial basement membrane) of large blood vessels and capillaries, so that peripheral tissue blood flow to the feet is disrupted and necrosis results in diabetes mellitus ulcers, giving rise to problems with the integrity of skin tissue (Kartika, 2017).

One of the nursing problems in diabetes mellitus sufferers that requires special treatment from health workers is impaired skin integrity. The role of health workers, especially nurses, is very much needed to overcome this nursing problem because tissue death that is left alone will cause diabetes mellitus ulcers or commonly called gangrene wounds (Kustianingsih, 2016).

According to Wijaya & Putri (2013), management of diabetes mellitus ulcers or gangrene wounds includes treatment and wound care. Wound care consists of washing the wound, debridement, antibiotic therapy, nutrition and maintenance of the type of dressing. Nursing actions that can be taken to overcome skin integrity disorders in providing nursing care to patients who experience damage to the skin (dermis and epidermis) or tissue (mucous membrane and covering tissue) are by means of the main intervention, namely skin integrity care and wound care (Team Working Group SIKI DPP PPNI, 2018).

Modern dressing is an effective method for healing wounds. Modern wound dressing is a closed wound care method that focuses on maintaining moisture to improve the wound healing process (Dhvyaa et al, 2015). Wound care using the moist principle is known as the modern method of dressing and uses more modern dressing tools. The principle of moisture balance is not yet familiar to nurses in Indonesia. Wound care using modern dressing techniques has developed especially in Indonesia large hospitals in big cities such as Bandung, Yogyakarta, Surabaya and Jakarta, while for district level hospitals, wound care using modern techniques is still not very well developed and does not even exist at all. Wound care using the moisture balance principle is known as a modern dressing method which uses more modern dressing materials and topical therapy which each has its own characteristics and advantages according to the condition of the patient's wound (Sotani in Salawaney, 2016).

Based on research results from the Scientific Journal of Medicine (2019), there is one focus of intervention that can be used for skin integrity disorders, namely modern wound dressings. This modern dressing is a modern dressing that is currently developing rapidly in wound care. Where in some literature it is explained that this method is more effective than conventional methods. Wound care using modern dressing methods is the right action to take in caring for wounds so that patients heal within the specified time, minimizing the risk of infection and preventing complications. If the action is carried out in accordance with existing standard operational procedures, the wound healing process and action will

be of high quality.

According to research results by Damsir (2018), wound care using modern dressings is more effective than wound care using conventional dressings in the diabetic wound healing process. Likewise, research conducted by Nurhaida (2017) shows the effectiveness of modern dressing therapy in the healing process of diabetic foot wounds. Conventional dressings are less able to maintain wound moisture because 0.9% NaCl will evaporate and make the gauze dry.

Based on the description above, the author is interested in making a research proposal with the title Nursing Care for Skin Integrity Disorders in Post-operative Patients with Diabetes Mellitus Ulcer Debridement Operations with Modern Wound Treatment Dressings at RSBT Karimun.

Research Methodology

This research was conducted in March 2022 using the case study method, the respondent collection technique used was purposive sampling. The subjects used in this study were two post-operative patients with diabetes mellitus ulcer debridement. Data collection in this study was taken using the interview method, observation, documentation (results) and a combination of the three. The research instrument used was a nursing care format which included assessment sheets, nursing diagnoses, nursing interventions, nursing implementation, nursing evaluation, and wound care tools as well as observation sheets.

Results

The results of the study obtained were that in the patient Mrs. seepage in the bandage area with a depth of 7 cm from the instep to the sole of the foot. Patient data was also obtained at the time of assessment BP: 160/90 mmHg N: 86 x/min S: 36.4 oC RR: 20 x/min.

Meanwhile, patient Mr. Patient data was also obtained at the time of assessment BP: 110/70 mmHg N: 104 x/min S: 36.5 oC RR: 20 x/min.

Based on the assessment data obtained above, the author formulated a medical diagnosis for Mrs. H and Mr. S, so the author established a medical diagnosis, namely Skin/Tissue Integrity Disorder. The author took the nursing diagnosis of Coli/Network Integrity Disorder.

This refers to the Indonesian Nursing Diagnosis Standards book (2016), that Skin/Tissue Integrity Disorders are damage to the skin (dermis and/or epidermis) or tissue (mucous membrane, cornea, fascia, muscle, tendon, bone, cartilage, joint capsule and /or ligaments).

Table 1 Nursing Diagnosis

Data	Masalah Keperawatan
Pasien **Data subjektif :** Pasien mengatakan terdapat luka terbuka pasca post operasi di telapak kaki dan punggung kaki sebelah kiri serta rembes pada area balutan. **Data objektif :** − terdapat luka post operasi debridement di punggung kaki sebelah kanan sepanjang 7 cm dan lebar 1,5 cm dengan kedalaman 2 cm hingga sela sela jari,, serta tidak ada edema − Tanda-tanda vital TD :160/90 mmhgNadi : 86x /menit Suhu : 36, 4ºC Rr : 20x/menit	Gangguan Integritas Kulit/ jaringan
Pasien 2 **Data subjektif :** Pasien mengatakan terdapat luka terbuka pada luka post operasi bagian punggung kaki kanan dan sela-sela jari serta rembes pada area balutan. **Data objektif :** − terdapat luka post operasi debridement di punggung kaki sebelah kanan sepanjang 7 cm dan lebar 1,5 cm dengan kedalaman 2 cm hingga sela sela jari,, serta tidak ada edema − T nda-tanda vital − TD :110/70 mmhg − Nadi : 104x/menit − Suhu :36,5ºC − Rr : 20x/menit	Gangguan Integritas Kulit/ jaringan

The planning or intervention was designed by the author based on the Indonesian Nursing Intervention Standards (SIKI) where the actions to be carried out consist of observation, therapeutic, educational and collaborative actions. The target time for achieving the result criteria for all diagnoses is determined within the same time frame, namely 3 x 24 hours. The nursing interventions used in this case study are: Monitor vital signs, monitor wound characteristics (e.g. drainage, color, size, odor) and monitor for signs of infection, carry out wound care using modern dressing techniques using osmonate, collaborate in administering antibiotics, monitor when blood sugar.

This scientific paper focuses on therapeutic interventions for the treatment of skin integrity in the diagnosis of skin integrity disorders in cases. The plans or interventions prepared by the author for all diagnoses are in accordance with theory and there are no gaps between cases and theory.

In this study, the author has provided modern wound dressing procedures to patient 1 and patient 2 using alginate material of the osmonate calcium alginate brand. In this study, both patients were cooperative in carrying out wound care. Based on the results of the implementation of the case study above, the response of patient 1 and patient 2 after being given wound care procedures using modern wound dressing techniques, both patients were greatly helped and looked clean from a lot of exudate.

In this case study, the author carried out an evaluation for 3 days to assess the success of the treatment given by the author to Patient 1 (Mrs. H) and Patient 2 (Mr. S) with disorders.

Skin/Tissue Integrity. There is a similarity between the theory and the results obtained by the author, where in Patient 1 the problem was partially

resolved because there were still open wounds so further action must be carried out by the nurse or family themselves because patient 1 does not smoke so this can reduce the risk of complications and can optimize healing conditions. wound. Meanwhile, Patient 2's problem has not been resolved and there are still open wounds with the same area and depth as at the beginning because Patient 2 smokes so he cannot optimize the wound healing conditions.

According to Perdanakusuma (2017) wound healing is a process of repairing skin tissue or other organs after an injury occurs. There are three phases of wound healing, namely the inflammatory phase, the proliferation or fibroplasia phase, and the remodeling or maturation phase. The results of the author's case study research show that patient 1 in the wound healing process has entered the proliferation or fibroplasia phase where the wound healing process has been going on for three weeks. This phase is also called the granulation phase because there is the formation of granulation tissue so that the wound appears fresh red and shiny. Meanwhile, in patient 2, the wound healing process was still entering the inflammatory phase, which occurred immediately after surgery until the fifth day. The following is a 3-day evaluation table during the treatment period for each patient.

Table 2 Patient Evaluation 1

Hari 1 Jumat, 5 Juli 2023	Hari 2 Sabtu, 6 Juli 2023	Hari 3 Senin, 8 Juli 2023
S : pasien mengatakan terdapat luka dan rembes di balutan luka, O : - KU : composmentis - Terpasang Infus Nacl 20 tpm - Terdapat banyak warna kecoklatan di balutan luar luka - TTV : TD :160/90 mmhg Nadi : 86x/menit Suhu :36,4^{o}C Rr : 20x/menit GDs : 186 A : gangguan integritas kulit dan jaringan belum teratasi P : intervensi di lanjutkan - Observasi TTV dan keadaan pasien - Memonitor karakteristik luka (mis. Drainase, warna, ukuran, bau) dan Memonitor tanda tanda infeksi - Perawatan luka moderen dressing - Kolaborasi terapi antibiotik	S : pasien mengatakan terdapat luka dan rembes di balutan luka, O : - KU : composmentis - Terpasang Infus Nacl 20 tpm - Terdapat sedikit warna kecoklatan di balutan luar luka, luas dan kedalaman luka mengecil - TTV : TD :164/88 mmhg Nadi : 92x/menit Suhu :36,2^{o}C Rr : 20x/menit GDs : 125 A : gangguan integritas kulit dan jaringan belum teratasi P : intervensi di lanjutkan - Observasi TTV dan keadaan pasien - Memonitor karakteristik luka (mis. Drainase, warna, ukuran, bau) dan Memonitor tanda tanda infeksi - Perawatan luka moderen dressing	S : pasien mengatakan terdapat luka dan rembes di balutan luka, O : - KU : composmentis - Terpasang Infus Nacl 20 tpm - Terdapat sedikit warna kecoklatan di balutan luka lapisan dalam, luas dan kedalaman luka berkurang dan mengecil - TTV : TD :130/83 mmhg Nadi : 91x/menit Suhu :36,4^{o}C Rr : 21x/menit GDs : 122 A : gangguan integritas kulit dan jaringan belum teratasi (hampir teratasi) P : intervensi di hentikan - Penelitian selesai selama 3 hari

Table 3 Evaluation of Patient 2

Hari 1 Jumat, 5 Juli 2023	Hari 2 Sabtu, 6 Juli 2023	Hari 3 Senin, 8 Juli 2023
S : pasien mengatakan terdapat luka dan rembes di balutan luka, O : - KU : composmentis - Terpasang Infus Nacl 20 tpm - Terdapat banyak warna kecoklatandi balutan luar luka - TTV : TD :110/70 mmhg Nadi : 104x/menit Suhu :36,5^{o}C Rr : 20x/menit GDs : 210 A : gangguan integritas kulit dan jaringan belum teratasi P : intervensi di lanjutkan - Observasi TTV dan keadaan pasien - Memonitor karakteristik luka (mis. Drainase, warna, ukuran, bau) dan Memonitor tanda tanda infeksi - Perawatan luka moderen dressing - Kolaborasi terapi antibiotik	S : pasien mengatakan terdapat luka dan rembes di balutan luka, O : - KU : composmentis - Terpasang Infus Nacl 20 tpm - Terdapat banyak warna kecoklatan di balutan luar luka - TTV : TD :130/80 mmhg Nadi : 80x/menit Suhu :36,7^{o}C Rr : 20x/menit GDs : 420 A : gangguan integritas kulit dan jaringan belum teratasi P : intervensi di lanjutkan - Observasi TTV dan keadaan pasien - Memonitor karakteristik luka (mis. Drainase, warna, ukuran, bau) dan Memonitor tanda tanda infeksi - Perawatan luka moderen dressing - Kolaborasi terapi antibiotik	S : pasien mengatakan terdapat luka dan rembes di balutan luka, O : - KU : composmentis - Terpasang Infus Nacl 20 tpm - Terdapat sedikit warna kecoklatan di balutan luar luka - TTV : TD :126/82 mmhg Nadi : 83x/menit Suhu :36,6^{o}C Rr : 20x/menit GDs : 214 A : gangguan integritas kulit dan jaringan belum teratasi P : intervensi di hentikan - Penelitian selesai selama 3 hari - Pasien pulang

Implications in Nursing

This study provides an overview of impaired skin integrity in patients post surgical debridement of diabetes mellitus ulcers using modern wound dressing procedures. The results of the research in carrying out a case study at RSBT Karimun in the A-Rahmad operating room contained several implications that could be used to improve nursing, namely assessing wounds with observation sheets when carrying out modern wound dressing because it can improve skin/tissue integrity disorders. In carrying out modern wound care, this dressing must be supported by the patient and family so that skin integrity disorders can improve and the procedure goes well and correctly. When conducting case studies on the two patients, the author did not experience any obstacles because it was in accordance with existing theory so that nursing actions were carried out well.

Conclusion

a. an assessing the main complaint, there were similarities between patient 1 and patient 2, namely that the patient complained of impaired skin/tissue integrity. Patient 2 is male. Meanwhile, patient 1 is female.
b. The nursing diagnosis that emerged based on data in patient 1 and patient 2 was skin/tissue integrity disorders
c. The nursing interventions carried out on both patients were in accordance with the Indonesian Nursing Intervention Standards, namely modern wound care procedures, dressing with alginate material branded as osmonate calcium alginate with the function of absorbing large amounts of exudate and the plans made by the author were adjusted to the patient's needs.
d. Implementation of nursing for skin/tissue integrity disorders in post-operative patients. Debridement of diabetes mellitus ulcers with modern wound care procedures. Dressing is carried out with a comprehensive assessment starting from monitoring TTV, monitoring wound characteristics (eg drainage, color, size, odor) and monitoring signs. infections, modern wound care dressings, and collaborative antibiotic therapy, as well as monitoring blood sugar at any time.
e. Nursing evaluation after administering modern wound care procedures, dressing which is carried out once a day for three days, can overcome skin/tissue integrity disorders experienced by post-operative patients with diabetes mellitus ulcer debridement. The effect is proven, namely that in patient 1 the problem was partially resolved because there was still the wound is open so further action must be taken by the nurse or family themselves
f. This was because in patient 1, the wound healing process had entered the proliferation or fibroplasia phase. Meanwhile, Patient 2's problem has not been resolved because there is still an open wound with the same area and depth as at the beginning because patient 2 is still entering the inflammatory phase in the wound healing process.

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