CASE REPORT

Impaired Skin Integrity in Patient With Systemic Lupus Erythematosus (SLE) in the Hospital: A Case Report

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ABSTRACT

Systemic lupus erythematosus (SLE) can affect all ages, especially in women. SLE can attack various organ systems in the human body. This report aims to describe of problems and organ involvement in influencing the healing process in SLE patients. The case was a 41-year-old female and had been diagnosed with SLE four years ago. She hospitalized with problems of mucocutaneous, renal and liver organs. In this case, nursing problems were found including impaired skin integrity. The patient came to the hospital with complaints of itching and burning. Inflammation occurred in the area around the back and spreads to all body parts. Based on the case report, it is known that the main nursing problems that arise in patients with SLE are impaired skin integrity and the management of SLE can be determined based on the involvement of organs in influencing the disease process.

Keywords: Autoimmunity, Skin Integrity, Nursing Problems, Systemic Lupus Erythematosus

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INTRODUCTION

Systemic Lupus Erythematosus (SLE) is based on autoantibodies and immune complexes that bind to tissues and cause multisystem inflammation. The exact cause of SLE is still unknown. The incidence of SLE in the last five years shows a reasonably considerable variation worldwide. In the United States, SLE contributes to mortality (2.6%) of the total population. The high mortality rate in SLE is due to complications from comorbidities such as cardiovascular disease, kidney disease and even due to the infectious process (1). In Indonesia, the number of patients with SLE is unknown. Based on a survey, the incidence of SLE is known to be 0.5% of the total population (2).

The clinical symptoms of SLE are very broad, including damage of the skin and mucous membranes, joints, blood, heart, lungs, kidneys, central nervous system (CNS) and the immune system. In a report conducted (3), it was found that, in 1000 SLE patients in Europe who were followed for 10 years, the most common clinical manifestations were arthritis 48.1%, malar rash 31.1%, nephropathy 27.9%, photosensitivity 22.9%, neurologic involvement 19.4% and fever 16.6% while the uncommon medical manifestations were myositis 4.3%, discoid rash 7.8%, hemolytic anemia 4.8%, and acute subcutaneous lesions 6.7%.

Each individual who experiences SLE has their own characteristics that will affect different nursing problems and interventions for each patient. In this case report, the researcher aims to describe find out the manifestations and nursing problems that arise among SLE patient. Furthermore, management of SLE is determined by the involvement of organ systems. Based on the case studies that have been carried out, the differences in age and involvement of organ systems led to differences in the treatment and healing process in the cases. So that a holistic approach of assessment is needed in patients with SLE which aims to discover the manifestations that arise, analyze nursing problems and to identify the nursing care with differences in the involvement of organ systems in individuals with SLE disease. Case discussed in this report have a diagnosis of SLE, with comorbidities and require comprehensive nursing management. Thus, this report aims to describe the problems and organ involvement in influencing the healing process in SLE patients.

CASE

The case report was conducted 27 October – 09 November 2021 in the Public General Hospital, the top referral in the province of West Java. Researchers also provided informed consent to patients and their

families. Furthermore, the researchers conducted a comprehensive assessment and review to obtain data and problems experienced by patients.

Based on a case report conducted in the inpatient ward of the general public hospital, case was diagnosed with SLE. The patient was 41 years old and had been diagnosed with SLE since last year. In the previous two months before hospital admission, there was a major flare; it could be said that the patient had the most severe symptoms, with involvement of mucocutaneous, renal, and liver organs. The patient was diagnosed with SLE four years ago, where two months before admission to the hospital, this was the main symptom that the patient felt; previously, the patient did not experience severe symptoms. Symptoms that the patient felt when first diagnosed with SLE were bruising on the skin that did not heal and redness of the facial skin. The patient also has had a history of hypertension since two years ago.

The patient came to the hospital with complaints of itching and burning on the entire surface of the skin. Inflammation occurred in the area around the back and spreads to all body parts such as the scalp, chest, abdomen, right arm, and left arm, with a wound area of ± 2-4 cm. The depth of the wound was through the epidermis layer of the skin, with almost 50 percent of the body.

On the scalp, there were white and quite thick scales, crusts in the ear area, and hair loss. The face looks red all over. On the back and chest, sanguinolent crusts appeared that looked wet, accompanied by a reddish skin surface. In the areas of skin that experienced redness, the patient felt sore and itchy. The patient had an allergy to heparin and ceftriaxone. On the third day of hospitalization, the patient received heparin and ceftriaxone, and these therapies aggravated the inflammation of the patient's skin.

A physical examination was carried out on November 3, 2021. The results of the patient's physical examination were compos mentis consciousness, regular heart rhythm 78x/minute, breathing = 20x/minute, blood pressure = 150/80mmHg. The nutritional status of the patient experienced a weight loss of 16.3% I in two months, weight: 50 kg, length: 150 cm, body mass index (BMI): 22. The patient's nutritional intake was inadequate; the patient experienced a decrease in appetite. The laboratory examination obtained from case 1 is presented in Table 1.1.

Medical therapy given to this patient was Methylprednisolone 1 x 48 mg, Folic Acid 1 x 1 mg, CaCO3 3 x 500 mg, Mometasone Furoate 0.1% 2 x 1 (topical), Gentamicin Cream 4 x 1 (topical), Omeprazole 1 x 40 g, Curcuma 3 x 1, Meropenem 3 x 1 gr, Ramipril 1 x 5 mg, and Mupirocin cream 3 x 1 (Topical)

Table I Laboratory Results

Lab	Results	Reference values	Unit
Date : November 4, 2021			
Hematology parameters			
Hemoglobin	8.1*	12.3-15.3	g/dL
Hematocrit	24.6*	36.0-45.0	%
Erythrocytes	2.84*	4.5-5.1	Million/uL
Leukocytes	7.64	4.4-11.3	10^3/ uL
Platelets	152	150-450	Thousand/ uL
Erythrocyte index			
MCV	86.5	80-96	/L
MCH	28.5	27.5-33.2	pg
MCHC	32.5*	33.4-35.5	%
Count Leukocyte Type			
Basophils	0	0 – 1	%
Eosinophils	6*	0 – 4	%
Neutrophils Stem	0*	3 – 8	%
Neutrophils Segments	77*	45 – 73	%
Lymphocytes	13*	18 – 44	%
Monocytes	4*	3 – 8	%
Total Neutrophils	5.88	2.10 – 8.89	10^3/uL
Total Lymphocytes	0.99*	1.26 – 3.35	10^3/uL
Total Monocytes	0.31	0.29 – 0.95	10^3/uL
Total Eosinophils	0.46	0.01- 0.40	10^3/uL
Total Basophils	0.00	0.01 – 0.09	10^3/uL
PCT	0.18	0.18 – 0.39	%
RDW-CV	16.1*	11.5 – 14.5	%
PDW	14.3*	9.0 – 13-0	fL
MPV	12.1*	7.2 – 11.1	fL
Neutrophil Lymphocyte Ratio	5.94		
RDW-SD	50.9*	36.4 – 46.3	fL
Triglycerides	239*	<150(Normal) 150-199 (High limit) 200-493 (High) 500) very high	mg/dL
SGOT (AST))	271*	15-37	u/l
SGPT (ALT)	221*	14-59	u/l
Bilirubin Total	0.215	0.100 – 1.00	mg/dL
Bilirubin Direct	0.176	0.100 – 0.300	mg/dL
BilirubinIndire k	0.039*	0.200 – 0.800	mg/dL
Fibrinogen	286.4	238 – 498	mg/dL
Ferrithrin	775.2	10 – 291	ng /mL
ANA Profile	Positive*	Negative	

Based on case, the main nursing problem is impaired skin integrity related to the inflammatory process. Interventions carried out to deal with the problem of damage to skin integrity in patients with SLE are the use of 0.9% Nacl compresses, and collaboration with the topical drug Momentasone furoate 0.1%, Gentamicin cream, and Mupirocin Cream. Giving 0.9% NaCl compresses has an effect on patients, especially in providing a sense of comfort for itchy and sore skin conditions.

After the intervention was given 7 x 24 hours, the patient's skin integrity was partially resolved. The condition of the wound was dry, the scales and crusts peeled off, and the itching on the skin was felt to be greatly reduced. The condition of the skin after the intervention was given looked moist, there was redness, and there were parts of the skin with hypopigmentation, there were no signs of infection on the skin.

After the patient's wound underwent a healing process, the researcher assessed the patient's knowledge of treatments that support wound recovery and prevention of recurrence. The results of the learning ability of the patient showed that the patient did not know the supportive care for the wound recovery process and prevention of recurrence.

Based on the results of this report, researchers conducted interventions in the form of education to patients regarding skincare and prevention of recurrence of SLE manifestations on the skin. The education provided was to encourage patients to use soap hypoallergic, to use masks and sunscreens when doing activities outside the home, and to avoid foods and drugs that cause allergic reactions.

DISCUSSION

Systemic lupus erythematosus (SLE) is a chronic autoimmune inflammatory disease with unknown etiology and very diverse clinical manifestations, course of disease and prognosis. SLE diagnosis stated whether there are four of the 11 criteria of the American Rheumatism Association (ARA), namely 1). malar rash; 2). discoid rash; 3). photosensitive; 4) oral ulcers; 5). non-erosive arthritis;6). serositis (pleuritis/carditis); 7). renal impairment (proteinuria >500 mg/day or cell cylinder/ cellular cast); 8). neurological disorders (seizures, psychosis); 9). hematologic disorders (hemolytic anemia, leukopenia, thrombocytopenia, or leukopenia); 10). immunological abnormalities (lupus erythematosus cell test results contain anti-DNA antibodies, anti-lupus cell antibodies or false positive serological test results for syphilis, anti-phospholipid antibodies); 11). positive antinuclear antibody (ANA).
In this case, the patient had SLE with mucocutaneous, renal and liver involvement. The manifestation that appeared in this patient was inflammation of the skin surface which included the head, face, neck, chest, and back. The main complaint of this patient was pain, itching and burning of the wound. In addition, the patient had kidney and liver disorders which could be seen from the results of laboratory tests. The main diagnosis in SLE patients with mucocutaneous involvement is damage to skin integrity characterized by redness of the skin, the presence of sanguinolenta crusts, scaling and hypopigmentation. The intervention needed in this cases is wound care management. The purpose of the wound care is to help the wound healing process, prevent the wound from infection and relieve inflammation of the skin as the etiology of the wound in SLE.

Wound care interventions in this case were performing NaCl 0.9% compression, as well as collaboration in the provision of topical drugs. Topical drugs are given in the form of antibiotics (gentamicin), Mometasone furoate as anti-inflammatory drugs. In addition, nursing interventions that need to be considered are the cleanliness of the patient's skin and environment in order to avoid the incidence of infection. The skincare intervention had good results, indicated by an improvement in the patient's skin condition. After the intervention for 14 days, the patient showed improvement, the wound on the skin dried and the crust could be released by itself without causing new wounds. The results showed that the use of olive oil as a topical was effective in preventing pressure sores. Another report conducted with the aims to compare the effect of henna and olive oil on grade one pressure ulcers in ICU patients (4) found that there was a significant difference between the two groups of henna and olive in the mean pressure ulcer score as measured by the pressure ulcer scale for healing devices.

Because health and skin damage are individual and multifactorial factors, prevention requires individualized education focused on patient preferences and goals. Successful treatment requires optimal wound preparation, pressure relief, and, if necessary, referral to a surgeon. Mattress and seat systems, pressure relief, skin microclimate and nutrition must be optimized. Promoting wound healing and promoting prevention requires addressing identifiable causes, increasing risk factors, and providing wound care.

In this case, after the patient experienced wound healing, the patient received health education related to wound healing care and prevention of recurrence. A holistic assessment as well as education and appropriate treatment instructions will affect the level of patient knowledge. This nursing education is given to support self-care of patients during home care so that the recovery process goes well and there is no recurrence with severe symptoms. Appropriate care by nurses in patients with SLE will impact on improving the patient's quality of life. Patients with better self-care showed the higher quality of life and disease management. There

needs to be continuity between the care of lupus patients in the hospital and self-care at home.
In addition, research stated that nursing instructions are important to increase patient knowledge related to their illness and care, but short hospital stays often prevent complete education and guidance regarding the therapy and further nursing care (5). This report demonstrates that health educations are required by patients receiving steroid therapy through designing and managing nursing instructions according to the patient's symptom priorities. Nurses can increase patients' knowledge regarding the disease and their care based on the patient characteristics.

CONCLUSION

Individuals with SLE have typical signs and symptoms that appear on the body and a history of comorbidities. From the signs and symptoms that appear, it can be seen that patients with SLE have different healing processes based on the involvement of the body's organ systems. Handling the disease can be done by health workers, both pharmacologically and non-pharmacologically, in preventing the occurrence of worsening conditions in patients with SLE. One of the problems that need to be considered is related to the damage to the integrity of the skin caused by an autoimmune process so that the prevention of complications in the damage to the integrity of the skin of SLE patients can be done by treating the wound or on the individual skin. This report included SLE patient with clinical consequences, so that it is beneficial for the healthcare profession to understand from the assessment to evaluation process. Nevertheless, the results of this report cannot be generalized.

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