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Original Research

Frequency of Treatment of Foot Wounds in Diabetes Melitus Patients Infected with Covid -19

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ABSTRACT

Background: *Frequency of Treatment of Foot Wounds in Diabetes Melitus Patients Infected with Covid -19 Objective: to assess the differences in the frequency of treatment in patients with or without arterial injuries. Purpose to assess the differences in the frequency of treatment in patients with or without arterial injuries.*

Methods: *This type of quantitave research was comparative and descriptive to assess the difference in the frequency of treatment between those with arterial injuries and those without arterial injuries. A sample of 60 people who had been exposed to COVID-19 and had diabetic foot wounds was split into two groups: 35 people who had arterial injuries and 25 people who did not. Samples were taken using purposive sampling method Both groups of respondents recorded the frequency of wound care that had been received and analyzed it using the Chi- square test with an error degree of 0.05.*

Results: *Patients exposed to Covid 19 showed a difference in the frequency of treating diabetic foot wounds between those who had vascular injuries and those who did not, with a P value of 0.049 0.05 and an OR of 95% CI = 2.114.*

Conclusion: *There is a difference in the frequency of wound care for DM patients between those exposed to COVID-19 and experiencing arterial injuries and those who do not have arterial injuries. Patients who experience arterial injuries have the risk of increasing the frequency of wound care by 1.114 times compared to those who do not experience arterial injuries.*

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INTRODUCTION

Diabetes, also referred to as diabetes mellitus (DM), is a chronic illness that affects the majority of people worldwide. A change in lifestyle is one of the primary causes of DM. The number of DM patients continues to rise annually; in fact, the WHO predicts that it will reach 61% in 2030 and that it will become a pandemic and affect 70% of developing nations, including Indonesia, in 21 years (WHO, 2016).

According to the IDF (International Diabetes Federation), the prevalence rate of

type 2 diabetes mellitus, which was around 10.5% in 2021, could increase to 12.2% in 2045. According to research, the prevalence of T2DM in urban areas is 12.1% greater than in rural regions by 8.3% (Sun, H., Saeedi, P., Karuranga, S., Pinkepank, M., Ogurtsova, K., and Duncan, B.N., 2022). Multiple consequences of diabetes mellitus necessitate ongoing care and supervision, altering the biopsychosocial and spiritual aspects of the patient. Providing spiritual guidance is essential to enabling someone to live successfully and happily despite the difficulties they encounter.

The increasing prevalence of diabetes mellitus is causing a massive increase in peripheral arterial disease, a disabling complication of diabetic atherosclerosis that often results in amputation of the affected limb. Diabetic foot ulcers are one of the complications caused by poor blood sugar control. This condition will get worse if blood sugar control is also bad. The condition of leg injuries is usually not felt by patients because they experience nerve death, so patients are not aware of the condition of their leg injuries. However, when an infection occurs, they usually only realize that they have a leg wound.

Avoiding the expansion of foot wounds and avoiding the occurrence of complications that lead to amputation requires proper and continuous care. Various modern foot wound dressing and treatment techniques can be used to assist in treating foot wounds. For maintaining moisture, occlusive and semi-occlusive dressings can be used because modern dressings aim to maintain the isolation of the wound environment, which remains moist.

MATERIALS AND METHOD

A comparative descriptive study is the kind of research used to compare the frequency of hospitalization between people who have arterial injuries and others who don't. The study was carried out in the Wound Care Clinic of PT Rumah Sakit Indonesia Unit Surakarta, Karang Anyar, and Sukoharjo, Central Java, and Yogyakarta Sleman and Bantul Units from February 2022 to November 2022. The sample included 60 participants with diabetic foot wounds who had been exposed to or received COVID-19; of them, 35 participants had vascular damage and 25 participants did not. Modern dressings were used to treat the wounds in each group.

Additionally, both respondents with arterial injuries and respondents without arterial injuries had their wound care time assessed. Furthermore, an assessment of the length of wound care was carried out for respondents who had arterial injuries and those who did not have arterial injuries and assessed the degree of injury using the wound observation sheet according to Meggit-Wagner and PEDIS. Chi-squared analysis of outcome data. This multi-year research feasibility statement was obtained from the Ethics Commission of RSUP Dr Moewardi Surakarta on April 28 2021 number 464/IV/HREC/2021.

RESULTS

The following are tables of research results

Table 1. Respondent Characteristics and Frequency of Wound Care

Variabel		Arterial Wound				Total
		Yes		No		
		f	%	f	%	
Gender	Male	10	29	11	44	21

Variabel		Arterial Wound				Total
		Yes		No		
		f	%	f	%	
	Female	25	71	14	56	39
Age						
	< 59	18	51	10	50	30
	60-74	15	44	6	30	24
	>74	2	5	4	20	6
Educational Background						
	Elementary School	14	40	11	11	25
	Junior High School	10	31	6	23	16
	Senior High School	8	21	6	27	14
	Higher Education	3	8	2	8	5
Frequency of wound care						
	3 x	17	44	10	69	27
	>3 x	24	56	9	31	33
OR 95% CI			2,114			
p. Value			0,049			

According to the IDF (International Diabetes Federation), the prevalence rate of type 2 diabetes mellitus, which was around 10.5% in 2021, could increase to 12.2% in 2045. According to research, the prevalence of T2DM in urban areas is 12.1% greater than in rural regions by 8.3% (Sun, H., Saeedi, P., Karuranga, S., Pinkepank, M., Ogurtsova, K., and Duncan, B.N., 2022). Multiple consequences of diabetes mellitus necessitate ongoing care and supervision, altering the biopsychosocial and spiritual aspects of the patient. Providing spiritual guidance is essential to enabling someone to live successfully and happily despite the difficulties they encounter.

The table shows that most of the respondents are women and most are less than 59 years old. The educational background of the respondents was mostly elementary school as many as 25 people. The highest frequency of wound care was > 3 times compared to those with < 3 times frequency. Meanwhile, the difference in the frequency of wound care between respondents who had arterial injuries and those who did not have arterial injuries had a p value = 0.049 <0.05. The table also shows that the frequency of wound treatment is 2.114 times higher for respondents at risk for arterial injuries than for respondents who do not have such injuries.

DISCUSSION

Currently, foot wounds in diabetics are one of the consequences that frequently happen, can be fatal, shorten life expectancy, and cost a lot to heal. According to the IDF (International Diabetes Foundation), it affected 9% (463 million adults) of the world's population in 2019. This will continue to rise, especially in relation to the senior population (Hong Suna et al., 2022).

Diabetes mellitus, which affected about 7% of patients with COVID-19 during the pandemic (Shenoy A., Ismaily M., 2020), was the most frequent comorbidity. Diabetic patients exposed to COVID-19 frequently encounter difficulties as a result of this disease. On the one hand, dietary consumption needs to be restricted, especially in terms

of carbs. On the other hand, the body's tolerance to COVID-19 must be increased through optimal nutrition (Madsbad, 2020).

The findings of this study are consistent, in terms of age and gender characteristics, with those of Yunus' (2015) study, which found that male and female respondents took different amounts of time to care for their diabetes wounds. Additionally, it was discovered that respondents under the age of 50 received wound treatment more quickly. Additionally, it has been discovered that among diabetic people with foot ulcers, whose mean age is 73 years, 44% of the ulcers do not heal after 17 months of treatment, 15% require major amputation, and 42% pass away. According to the study's findings, individuals with arterial damage and diabetic foot ulcers are more likely to experience problems after treatment, including amputation.

Diabetes mellitus wounds are believed to be closely associated with vascular injuries because numerous previous studies indicate that diabetic patients are at risk of suffering from such wounds (Takahara, 2021). When diabetic patients are exposed to COVID-19, this problem becomes more obvious. Endothelial dysfunction was explained as the result of hypercoagulation, which started as a result of endothelial injury and caused susceptibility to thrombosis in the peripheral blood vessels. This led to ischemia in the extremities, which sped up the development of ulcers in diabetic patients (LU, Tilo, Claesson, K., and Acosta, 2021).

According to a different theory, peripheral arterial disease, which can have serious consequences, is one of the factors contributing to diabetic foot wounds (Atri, A., Murthy, C., Dasgupta, 2020). Thus, it is clear that vascular disease can result in diabetic wounds and that diabetic wounds can make people severely ill as a result. This can induce problems, including amputation.

Other studies that claimed there was a connection between endothelial cell dysfunction in diabetes and COVID-19 patients, which led to an increase in the frequency of wound care, also corroborated the findings of this study (Hayden, 2020). According to additional research, diabetic lesions will deteriorate into arterial wounds (Bekele, F., 2020). As a result, this will increase the likelihood of problems, such as amputation, to a prevalence of up to 43.87% (Azhar, 2021). Similar reasoning was given as to why treating populations at risk for amputations should be the focus of efforts to enhance the standard of care for patients with vascular injuries (Barnes J.A., 2020).

CONCLUSION

There is a variation in the frequency of wound treatment for DM patients depending on whether they were exposed to COVID-19 and had vascular damage or not. When compared to patients who do not experience arterial injuries, those who do run the risk of needing wound care 1.114 times more frequently.

As a recommendation from the results of this study, it is recommended every time you want to provide wound care Every time you want to treat a diabetic patient's wound, it is advised that you begin by being aware of any prior exposure to COVID 19. The presence of vascular wounds is then investigated in order to provide more accurate and efficient wound management.

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It is strongly advised that you pay close attention to patients who have been exposed to COVID-9 and have vascular damage, given the possibility of needing more

frequent wound care. In order to comprehend and patiently support wound care efforts, patients are expected to be informed.

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