DOI Number: 10.37506/v14/i1/2020/ijfmt/193059

Determine Effect of Carbothera Therapy on Foot and Leg Ulceration for Diabetic Patients in Endocrine and Diabetic Center at Al-Nasiriya City

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Abstract

Background: Diabetic foot is a serious complication of diabetes that aggravates the patient's condition whilst also having significant socioeconomic impact. Increasing physicians 'awareness and hence their ability to identify the «foot at risk,» along with proper foot care, may prevent diabetic foot ulceration and thus reduce the risk of amputation.

Objectives: 1.Determine the socio demographic data on diabetic foot and leg ulceration

2.Determine the relationship of socio demographic data on diabetic foot and leg ulceration

3.Determine the Effeteness of Carbothera therapy upon diabetic foot and leg ulceration improvement

Methodology: A descriptive study was conducted on a sample consisting of (50) patients is having diabetic foot and leg ulceration who were selected randomly from Endocrine and Diabetic Center in Nasiriya City. Diabetic patient who have diabetic foot and leg ulceration, carried out in Nasiriya city / endocrine and diabetic Center starting from January/ 2019 to July /2019

Results: 40% the age between 60-69 years ,males was 68%, the patients residing in the city (urban) by 66%,78% of them consider that their monthly income is not enough, infected with diabetes For diabetes for a period of 10 years and more is 76%, the average age of patients was 59 years, patients discovered diabetes disease was 66% , improvement in their health through the carbothera therapy 66% indicated a positive effect on the patients, a significant mean relationship at level of 8% between the urban and rural environment variable with improved carbothera therapy indicates that therapy is more effective when the patient has a more urban than rural. In addition, a very weak and statistically insignificant relationship between the patients is other demographic data and the improvement of carbothera therapy

Keywords: *Diabetic, Carbothera therapy, foot and leg ulceration*

Introduction

Diabetic foot and leg ulceration is one of the most significant and devastating complications of diabetes, and is defined as a foot affected by ulceration that is associated with neuropathy and/or peripheral arterial disease of the lower limb in a patient with diabetes. The prevalence of diabetic foot ulceration in the diabetic population is 4–10%; the condition is more frequent in older patients [1-3]. It is estimated that about 5% of all patients with diabetes present with a history of foot ulceration, while the lifetime risk of diabetic patients developing this complication is 15% [1]. The majority (60–80%) of foot ulcers will heal, while 10–15% of them will remain active, and 5–24% of them will finally lead to limb amputation within a period of 6–18 months

after the first evaluation. Neuropathic wounds are more likely to heal over a period of 20 weeks, while neuro ischemic ulcers take longer and will more often lead to limb amputation [4]. It has been found that 40–70% of all no traumatic amputations of the lower limbs occur in patients with diabetes [5]. Furthermore, many studies have reported that foot ulcers precede approximately 85% of all amputations performed in diabetic patients [5]. The risk of foot ulceration and limb amputation increases with age and the duration of diabetes [6,7]. The prevention of diabetic foot is crucial, considering the negative impact on a patient's quality of life and the associated economic burden on the healthcare system [8]. Diabetic foot ulceration is a major health problem and its management involves multidisciplinary approach. This review aims to provide a synopsis of the current management strategies of diabetic foot ulcers, from prevention to the options for therapy. The authors believe that it may be useful to primary care physicians, nurses, podiatrists, dialectologists, and vascular surgeons, as well as all healthcare providers involved in the prevention or management of diabetic foot ulcers of skin integrity, providing a site vulnerable to microbial infection [12]. Peripheral arterial disease is 2–8 times more common in patients with diabetes, starting at an earlier age, progressing more rapidly, and usually being more severe than in the general population. It commonly affects the segments between the knee and the ankle. It has been proven an independent risk factor for cardiovascular disease as well as a predictor of the outcome of foot ulceration [13]. Even minor injuries, especially when complicated by infection, increase the demand for blood in the foot, and an inadequate blood supply may result in foot ulceration, potentially leading to limb amputation [14]. The majority of foot ulcers are of mixed etiology (neuro ischemic),particularly in older patients [15]. In patients with peripheral diabetic neuropathy, loss of sensation in the feet leads to repetitive minor injuries from internal(calluses, nails, foot deformities) or external causes (shoes, burns, foreign bodies) that are undetected at the time and may consequently lead to foot ulceration. This may be followed by infection of the ulcer, which may ultimately lead to foot amputation, especially in patients with peripheral arterial disease. Structural foot deformities and abnormalities, such as flatfoot, hallux valgus, claw toes, Charcot neuroarthropathy, and hammer foot, play an important role in the pathway of diabetic foot ulcers since they contribute to abnormal plantar pressures and therefore predispose to ulceration. Other risk factors for foot ulceration include a previous history of foot ulceration or amputation, visual impairment, diabetic nephropathy, poor glycemic control, and cigarette smoking. Some studies have shown that foot ulceration is more common in men with diabetes than in women [14,16]. Social factors, such as low socioeconomic status, poor access to healthcare services, and poor education are also proven to be related to more frequent foot ulceration [14,16].

Methodology

Non –probability (purposive) sample application was conducted on a sample consisting of (50) patients having foot and leg ulceration who were selected from endocrine and diabetic center in Nasiriya city. An assessment format was constructed and designed depending on open format information and after reviewing the related literature, the objective of this assessment was to evaluate the need for the educational program. The assessment was conducted from jaunary-2019 to July -2019 and the format was comp each respondent a period between 30-40 minutes. Researcher were fill out the format by himself. For those who were unable to ask to read and write, the researcher filled out the format herself with their original responses.

The data of present study were analyzed through the application of two statistical approaches, which may assist for the determination of the study results.

Statistical analysis

A statistical questionnaire on diabetic foot disease was prepared and a sample of 50 patients was selected. The form consisted of two axes: The first on the socio-demographic aspect of the patient and the second on the clinical medical aspect.

The data from the form were classified and the variables were coded according to the requirements of the statistical program SPSS.

Since the variables used are qualitative and not quantitative, the correlation coefficient has been used to measure whether there are links between some variables and their analysis. The Spearman correlation coefficient is based approximately the vocabulary of each of the descriptive variables in question, with each given numeric value showing its order. Using these ranks, the correlation coefficient, called "grade", can be calculated. The correlation coefficient can be calculated through the following formula:

$$R_s = 1 - \frac{\sum D^2}{n(n^2 - 1)}$$

Where **n** = number of observations

D = differences between two ranks of two observations

Variables		No.	%
Age (years)	40-49Year	6	12
	50-59Year	19	38
	60-69Year	**20**	**40**
	70-80 year	5	10
	Total	50	100.0
Gender	Male	34	68.0
	Female	16	32.0
	Total	50	100.0
level of education	Do not read not write	21	42.0
	Secondary	20	40.0
	Prepared	6	12.0
	Bachelor	2	4.0
	postgraduate	1	2.0
	Total	50	100.0
Monthly income	Enough	4	8.0
	Enough to some extent	7	14.0
	Not Enough	39	78.0
	Total	50	100.0
Residential area	Urban	33	66.0
	rural	17	34.0
	Total	50	100.0
Transport	Owns	3	17.6
	Non owns	14	82.4
	Total	17	100.0
housing	possession	7	41.2
	common property	6	35.3
	leasehold	3	17.6
	other	1	5.9
	Total	17	100.0
Marital status	Married	12	70.6
	unmarried	2	11.8
	Other (Divorce, widow)	3	17.6
	Total	17	100.0

Result:

Table (1) Distribution of the Study Sample by their General Information

Table (1) show that the percentage of age was 40% for age between 60-69 years, males was 68%, which is higher among the infected than the female rate of 32%, the patients residing in the city (urban) by 66%, the adequacy of the monthly income of the patient or not, 78% of them consider that their monthly income is not enough.

Table 1 Average age of the statistical sample of a diabetic foot and leg ulceration patients

N	**Valid**	**50**
	Missing	**0**
Mean		59.16
Std. Deviation		8.421
Minimum		40
Maximum		80

Table 2 showed that the average age of patients participating in the study was 59 years and that the ages of patients ranged between 40 and 80 years with 50% of patients between the ages of fifty -sixty years.

Table (3) Distribution of the Study Sample by their some variable

Variables		No.	%
Self-Infected diagnosed	no	17	34.0
	yes	33	66.0
	Total	50	100.0
Improvement	no	17	34.0
	yes	33	66.0
	Total	50	100.0
Walking	no	9	18.0
	yes	41	82.0
	Total	50	100.0

Table (3) showed that the majority of patients discovered diabetes through their reviews, not the same thing. The proportion of patients diagnosed with the disease was 66% of the total sample. The percentage of patients who reported an improvement in their health through the therapy of carbothera therapy 66% indicated that the therapy had a positive effect on the patients, the form of the number of patients who responded to exercise daily, which is very useful to them, the number of patients who responded that they are walking Which were very useful to them, constituted a high rate of 82% of the patients in the sample

Table (4) the relationship between the numbers of sessions of Carbothera therapy with improvement in the health status of the patient's diabetic foot

(1-5)		Num. of sessions				Total
		(6-10)	(11-15)	(16-90)		
	no	13	3	1	0	17
yes	5	13	5	10	33	
Total		18	16	6	10	50

Table (4) showed the majority of patients (23 patients and 46% of total patients) who responded to therapy were among the 1 to 15 session sessions supporting the patient's response to therapy after attending only one and a half sessions (two sessions a week). The relationship between Spearman and (0.248) indicates that a significant mean relationship at an error level of 8% between the urban and rural environment variable with improved carbothera therapy indicates that therapy is more effective when the patient has a more urban than rural environment. The patient to the consequences of disease in the city be committed to therapy and get better results, While the relationship between the mean and moral level of error does not exceed 9 per cent between the variable and the presence of monthly salary of the patient due to lack of improvement in the therapy of carbothera, indicating that the therapy is more effective when the patient a monthly salary. This result is for the patient's mental state and the state of safety provided by the continuous monthly salary.

The correlation is very weak and there is no daily walk to the patient with improved therapy of carbothera through the value of the link (Spearman) and the amount (0.007), may appear this way because the patient has difficulty walking because of the disease and declare that he walked but did not exceed the steps were not simple you remember.

Discussion of the Results

The study comprised 50 participants with confirmed diagnosis of diabetes mellitus. Were more males than females, age between 60-69 years that is (due to the customs and traditions that require men to accompany women during their visit to the hospital for therapy). The patients residing in the city (urban) ,Which indicates that the incidence of the disease may relate to the nature of nutrition in the city and the natural nutrition in the countryside, the adequacy of the monthly income of the patient or not, of them consider that their monthly income is not enough, which indicates that insufficient income leads to "malnutrition and the lack of a suitable environment for living". Improvement in their health through the therapy of carbothera therapy indicated that the therapy had a positive effect on the patients, the form of the number of patients who responded to exercise daily, the number of patients who responded that they are walking Which were very useful to them, constituted a high rate of the patients in the sample, but the statistical results did not show a correlation with the improvement of their health condition due to their inability to walk already and the decline of a few daily plans, which makes it useless healthily. This agree with the study by Bakker et al. 2016 (International Working Group on Diabetic Foot Editorial Board. The development of global consensus guidelines on the management and prevention of the diabetic foot.

Conclusion

The management of diabetic foot and leg ulcers remains a major therapeutic challenge, which implies an urgent need to review strategies and therapy in order to achieve the goals and reduce the burden of care in an efficient and cost-effective way. Questions remain as to which types of intervention, technology, and dressing

are suitable to promote improvement, and whether all therapies are necessary and cost-effective as adjunctive therapies. Diabetic foot ulcers should be carefully evaluated and the gold-standard therapy should be strictly applied in order to prevent amputation. Further clinical studies are needed to support the existing evidence regarding the clinical benefit of new approaches for the therapy of diabetic ulcers, and these approaches should be used only as add-on therapies to the gold-standard wound care.

Financial Disclosure: There is no financial disclosure.

Conflict of Interest: None to declare.

Ethical Clearance: All experimental protocols were approved under the College of Nursing, Al-Muthanna University, Iraq and all experiments were carried out in accordance with approved guidelines.

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