Clinical Profile and Risk Factors of Diabetic Foot Syndrome: A Cohort Study at Souq Al-khamees Diabetic Center

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Abstract

Background: Diabetic foot is one of the most significant complications of diabetes, defined by ulceration associated with peripheral arterial disease and neuropathy. These ulcers can lead to infections and are the most common cause of non-traumatic lower limb amputations. In Libya, where diabetes prevalence is estimated at 16%, there is limited information regarding patient practices and risk factors regarding diabetic foot syndrome.

Objectives: The primary aim of this study was to estimate the prevalence and risk factors of diabetic foot syndrome among diabetic patients attending the Souq Al-khamees Diabetic Center in Alkhoms City, Libya.

Methodology: This prospective study was conducted at the Souq Al-khamees Diabetic Center in collaboration with the Libyan Academy for Postgraduate Studies. The study enrolled 60 diabetic patients with a history of diabetic foot syndrome. Data collection involved acquiring demographic information, diabetes history, and specific foot complications.

Results: The cohort was predominantly male (58.33%) and aged 40–79 years. Type II diabetes was present in 86.11% of participants, and glycemic control was notably poor, with 63.89% of patients having HbA1c levels above 8.0 mg/dl. Key clinical findings included: Neuropathy: 76.66% of participants exhibited sensory impairment, with 33.33% demonstrating a complete loss of protective sensation. Dermatological Status: 100% of patients presented with thick infected nails and skin dryness, while 47.22% had foot deformities. Ulcer Characteristics: 80% of participants had a current or historical ulcer. Of active ulcers, 64% were superficial, while 36% were deep, involving structures such as tendons or bones. Mobility: 70% of participants had restricted or absent ambulation.

Conclusion: The study population presents a highly complex and aggressive form of diabetic foot disease, primarily driven by uncontrolled hyperglycemia and characterized by severe neuropathy and tissue compromise. The high prevalence of deep ulcers and infection necessitates a clinical management strategy focused on

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surgical intervention and aggressive offloading. Furthermore, strict glycemic control and patient education regarding foot care are essential to preventing further complications and amputation.

Keywords:
Diabetic foot, neuropathy, peripheral arterial disease, clinical profile, risk factors.

1 Introduction

Diabetic foot is one of the most significant complications of diabetes. It is defined as a foot affected by ulceration that is associated with peripheral arterial disease of the lower limb in a patient with diabetes and/or neuropathy [1,2]. The development of a foot ulcer usually involves several mechanisms, such as increased biomechanical stress, neuropathy, peripheral arterial disease (PAD) and external trauma [3, 4]. In diabetic patients suffering from peripheral neuropathy, loss of sensation in the feet leads to frequent minor injuries from external causes (foreign bodies , shoes, burns) or internal (foot deformities, calluses, nails) that are not easy to detect at the time and may consequently lead to ulcerations of foot. In patients with peripheral arterial disease, this may be followed by ulcer infections, which may ultimately lead to foot amputation [1].

Diabetic foot ulcerations are generally caused by repetitive stress over an area that is subject to shear stress in patients with peripheral neuropathy. Peripheral artery disease (PAD) is also contributes to foot ulcers development. It is defined as clinical disorder where there is occlusion or stenosis of lower limbs arteries. Atherosclerosis is the main cause of peripheral artery disease in people over 40 year. Diabetes is associated with a two to fourfold increase in peripheral artery disease incidence compared to non-diabetic individuals. Among adult population ≥40 years of age, peripheral artery disease prevalence is 9.5% in diabetic subjects, whereas, it is a twice as much as the 4.5% prevalence in non-diabetics [5]. However, due to the altered clinical presentation of peripheral artery disease and the limitations of diagnosis procedures, diagnosing PAD and evaluating its severity in diabetic patients with foot disease is a clinical challenge. Furthermore, co-morbidities, edema, and infection all have an impact on wound healing in these patients in addition to the presence of peripheral artery disease [6]. In diabetes, peripheral artery disease (PAD) can be combined with peripheral nerve dysfunction causing diabetic angiopathy (poor blood circulation to the extremities [7].

Vitamin D deficiency has been recently found to be associated with infections of diabetic foot and increased risk of amputations.[7] Infection may set in, and then wounds take a long time to heal, spreading to joints and bones leading to lower limb amputation. Therefore, foot infection is the most common cause of non-traumatic amputation in diabetic patients.[8] Moreover, limited joint mobility and foot deformities can result in abnormal foot biomechanical loading. This will produce a high mechanical stress in some areas leading to callus formation (thickened

skin) which is then leads to a further increase in foot loading, often with subcutaneous hemorrhage and eventually skin ulceration [9].

The process of wound healing is complex and dynamic process that can be disrupted by diabetes mellitus by influencing various biological mechanisms, resulting in chronic wounds that do not heal easly, such as diabetic foot ulcers (DFU).[10] In addition to diabetes, the risk factors for diabetic foot ulcers include the coexistence of neuropathy (sensory, motor, and autonomous) [11], Peripheral arterial disease (PAD), immune system factors, and, in certain instances, repeated minor injuries or external trauma (which can cause skin breakdown and eventually lead to infections) are involved. Deformities of the bones in the foot (like bunions and hammertoes), which can cause pressure points (potential ulceration sites), are also regarded as risk factors.[12] (figure 1)

There are two primary protagonists in the risk factors and/or predisposing factors of diabetic foot ulcers: angiopathy and neuropathy. When these factors are present, along with intrinsic factors like foot deformity and/or external triggers such as trauma (thermal ,mechanical, or thermal chemical), they lead to a breakdown of the integrity of the skin. Aggravating factors such as neuropathy, ischemia and abnormal immune response, enhance the likelihood of developing of DFU infections [12].

Poor glycemic control, foot deformities, calluses, ill-fitting footwear, improper foot care, underlying poor circulation and peripheral neuropathy, dry skin, etc. these factors are leading to necrosis of foot tissue and ulcer occurrence. [13] Chronic hyperglycemia negatively impacts the wound-healing process through issues like impaired cellular defenses, collagen crosslinking, disrupted blood vessel formation and a weakened inflammatory response; peripheral neuropathy affects the sensory, motor, and autonomic nervous systems, leading to loss of protective sensation that can lead to deformities in bones, dry cracked skin and infections; peripheral arterial diseases such as inflammation in the microcirculation of the lower limbs, limited blood flow, and increased pressure on the foot can arise from atherosclerosis and elevated oxidative stress.[13, 14]

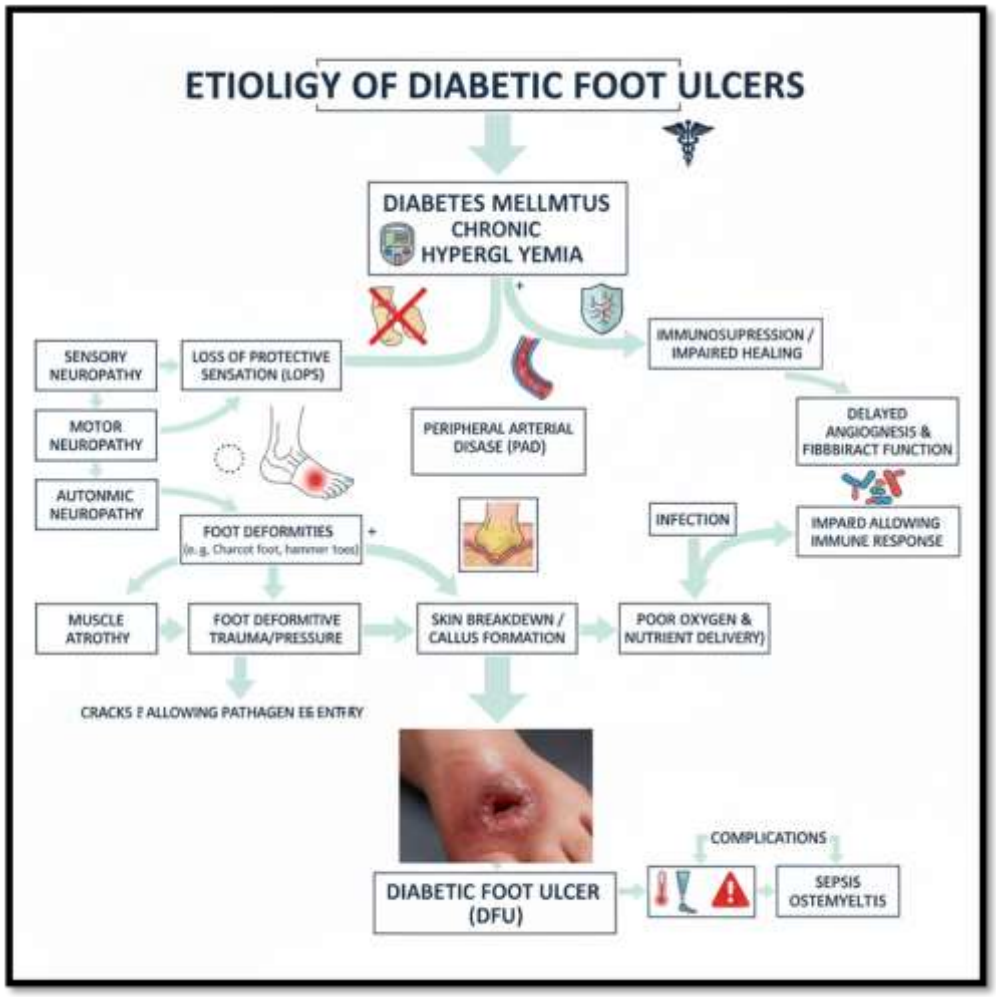


Figure 1. Schematic diagram of the etiology and risk factors of diabetic foot ulcers.

Regarding to its impact on our lives, diabetic foot ulceration is thought to be the cause of about 20% of hospital admissions among DM patients. [15]. In fact, about 15 percent of diabetics will experience foot ulcer, in their life. [16] About half of amputees survive longer than two years, with 84% of amputations in their lower limb, having a history of ulceration. According to several studies, about 25-50% of diabetic patients face urgent amputation at the time of the first visit due to the infection. Overall, it is estimated that approximately 50-70% of all lower limb amputations are due to diabetes[17]. If they do not have an amputation, 56% of people with foot ulcers live for five years. The quality of life is greatly diminished by amputations and foot ulcers. About 8.8% of diabetic patients are admitted to the hospital due to foot-related issues, and these stays last roughly 13 days longer than those of diabetics who do not have foot-related issues.[18] Up to 70% of ulcers recur within five years, and between 35 and 40% recur within three years. Diabetic foot disease is the most common cause of non-traumatic lower limb amputations.[19]

Therefore, The main objectives for managing DFU are to achieve wound closure as quickly as possible [15]. There are three key principles of managing diabetic foot ulcers, which include: prompt and appropriate removal of calluses, controlling infection, and reducing pressure on the affected area. Callus formation is a major factor in the development of neuropathic ulcers in diabetic patients. A bacterial swab should be taken from the ulcer floor after removing the callus and an appropriate antibiotic should be administered. In addition, wound dressings can be used as medicated systems to deliver healing enhancers and therapeutic substances such as growth factors, drugs, peptides, stem cells, and other bioactive substances[20].

Reducing pressure on the ulcer site is the most important factor in promoting healing. A recent systematic review found that insoles may help prevent diabetic foot ulcers, although most of the evidence is currently poor and inconclusive. Current insole designs primarily focus on reducing vertical forces to alleviate foot pressure. Some of the commonly used insole designs include: special shoes, polyethylene foam insoles (Plastozole), microcellular rubber insoles (Tovey's insole), the "Cork cradle" shoe, special windows cut out in shoes to accommodate deformed feet, and total contact plastic casts with minimal padding[20]. One of the main causes of foot trauma that results in foot ulcers is people with diabetes who have insensate feet, wear improper footwear, or walk barefoot. Individuals with LOPS should always wear appropriate footwear, both indoors and outdoors, and may require financial assistance to obtain them. Every shoe should be modified to accommodate any changes in a person's foot biomechanics or foot structure. [9]

The management of diabetic foot also include the medical management and surgical management. Medical management is indicated when ulcer is recent, small and in those patients unfit for reconstructive surgery. Surgical management is comprises of arterial reconstruction, sympathectomy and amputation.[20] Thoughtful evaluation of the criteria for diabetic foot surgery should consistently involve assessing adequate arterial blood flow for proper healing [21].

From all of the above, the aim of this study was to estimate the clinical profile and risk factors of diabetic foot syndrome among diabetic patients at Soaq Al-khamees Diabetic center (Alkhoms city-Libya).

Methodology

Study Design and Setting: This descriptive cross-sectional study was conducted at the Souq Al-khamees Diabetic Center in collaboration with the Libyan Academy of Postgraduate Studies (Janzour, Libya). The study aimed to characterize the clinical profile and risk factors associated with diabetic foot syndrome in a specific patient cohort.

Participants: A total of 60 diabetic patients were enrolled in the study. The primary inclusion criterion was a confirmed medical history of diabetic foot syndrome only a patients with current ulcers, therefore, any patients with a healed ulcers in the section of "history of diabetic foot syndrome" were excluded

from this study. Patients were selected based on their attendance at the center for management of foot complications.

Data Collection: Data were collected using a structured assessment tool (Appendix I) covering three primary domains:

1. **Demographic and Social Data:** Age, gender, residence, and smoking status.
2. **Diabetes History:** Duration of illness, type of diabetes (Type I vs. Type II), and glycemic control (HbA1c levels).
3. **Clinical Foot Assessment:** This included screening for neuropathy (sensory perception), vascular status (intermittent claudication), dermatological conditions (nails, skin integrity), and specific ulcer characteristics (location, depth, size, and exudate).

Statistical Analysis Data were analyzed using SPSS Statistics version 24 (SPSS Inc., Chicago, IL, USA). Descriptive statistics were utilized to summarize the cohort's characteristics; categorical variables were expressed as frequencies and percentages, while continuous variables were presented as means and standard errors where appropriate.

Results

A total of 60 diabetic foot syndrome patients from Soaq Alkhamees diabetic center were enrolled in the study. Baseline characteristics of the patients are shown in table 1. The data clearly indicates a higher proportion of male participants compared to female participants in this specific cohort, Male participants constitute the majority, accounting for 58.33% of the total population. While, female participants make up 41.67% of the total population. The data reveals a population heavily concentrated in the middle-to-older adult age range (40-79 years), which collectively accounts for nearly 90% of the participants. The study population is generally older, with a clear underrepresentation of participants under 40 and over 80. Data also demonstrates a strong geographical disparity in the participant recruitment. The majority of the study population (approximately 58.33%) is drawn from the two largest locations: Soaq Alkhamees (38.89%) and Alkhoms (19.44%), respectively. The data also reveals that the majority of the cohort are Non-Smokers, while a significant portion are current smokers. Non-Smokers constitute the large majority of the study population, accounting for 71.05% of the participants.

Table 1: Socio-demographic Characteristics of the Study Participants (N=60)

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	35	58.33%
	Female	25	41.67%
Age Group	30–39 Years	3	5.56%
	40–59 Years	27	44.45%
	60–79 Years	27	44.45%
	≥ 80 Years	3	5.56%
Smoking Status	Non-Smoker	43	71.05%
	Smoker	17	28.95%
Residence	Soaq Alkhamees	23	38.89%
	Alkhoms	12	19.44%
	Other Areas	25	41.67%

Diabetic disease section showed that a stark predominance of Type II Diabetes

within this subgroup of the study population, Type II Diabetes accounts for the vast majority, comprising 86.11% of the participants. While, Type I Diabetes represents a small minority, accounting for only 13.89% of the participants, as shown in figure 2.

The distribution of HbA1c values, which reflects the average blood glucose level over the preceding 2–3 months, shows a pronounced concentration in the higher ranges. The largest proportion of participants falls into the 8–8.9 mg/dl range, accounting for 30.56% of the total. This is significantly above the common therapeutic target for good diabetes control (often aiming for an HbA1c equivalent to below 7.0 mg/dl). While, participants within the target range (typically less than {7.0 mg/dl) are a distinct minority. The 6–6.9 mg/dl range includes 11.11%, and the 5–5.9 mg/dl range (which represents the closest to non-diabetic or excellently controlled levels) includes only 2.78%. These two groups combined make up only 13.89% of the cohort, as shown in figure 3.

Figure 4 reveals that the majority of participants have been living with their illness for less than 30 years, showing a clear decline in clinical profile as the duration increases. The two most frequent duration groups are 1–9 Years and 20–29 Years, both sharing the highest proportion of the cohort at 27.78% each. This indicates that over half (55.56%) of the participants have either a relatively recent diagnosis or a very long-standing, multi-decade illness. The longest duration shown, 40–49 Years, has the lowest representation at only 5.56%.

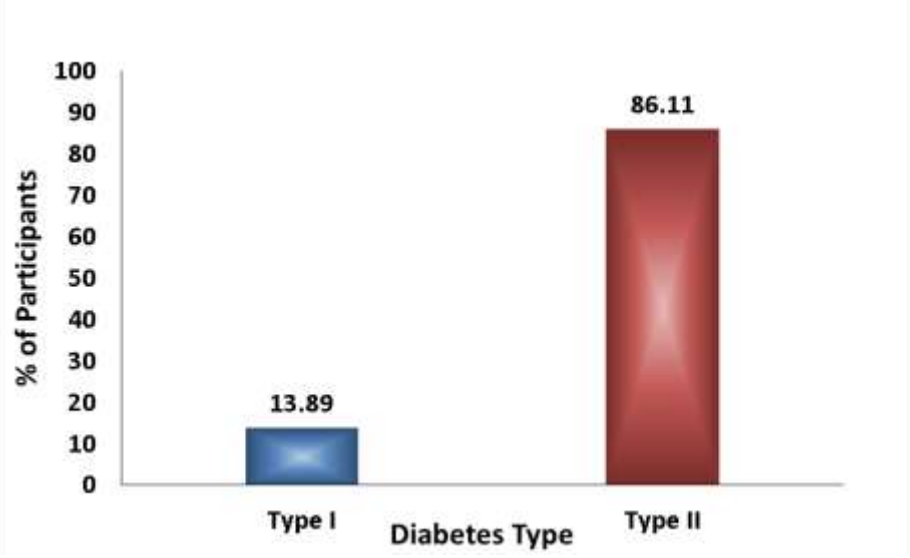


Figure 2. The percentage of diabetic disease type among diabetic foot syndrome participants.

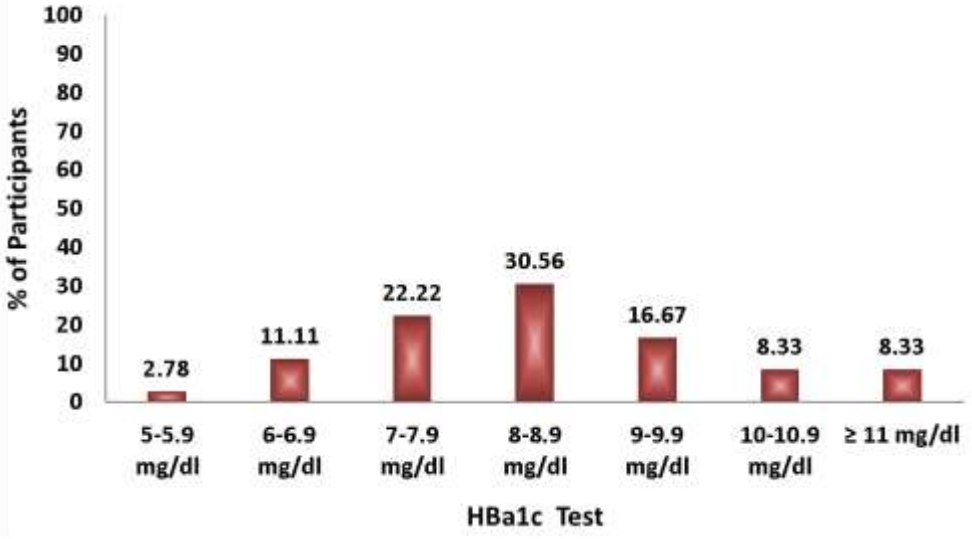


Figure 3. HBa1c levels of diabetic foot syndrome participants.

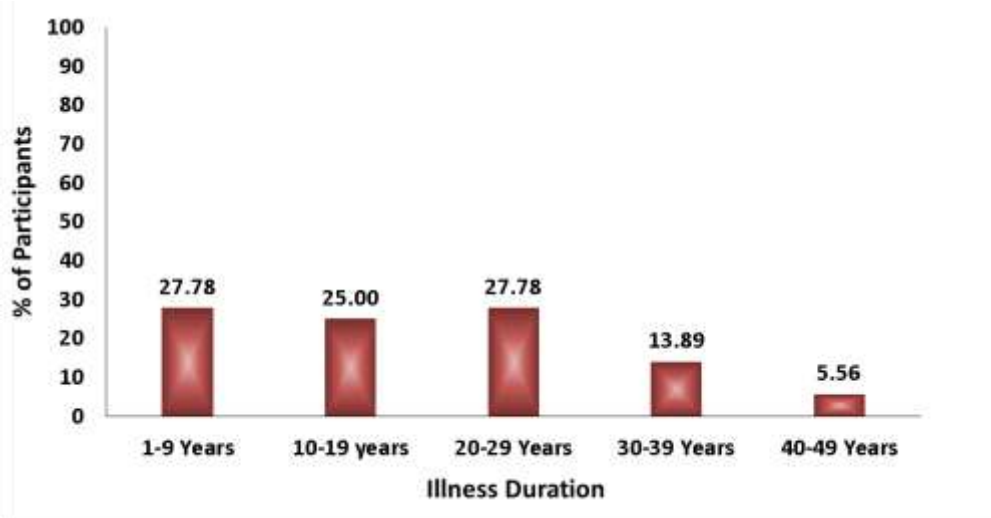


Figure 4. The duration of diabetic illness of diabetic foot syndrome participants.

Diabetes-related comorbidities section showed that Cardiovascular Disease is the most prevalent diabetic complication in this cohort, while Retinopathy is entirely absent based on the reported figures. Cardiovascular Disease is the most common complication, affecting 22.22% of the participants. This represents a significant burden of macrovascular disease within the group. Retinopathy is reported as 0.00% (figure 5).

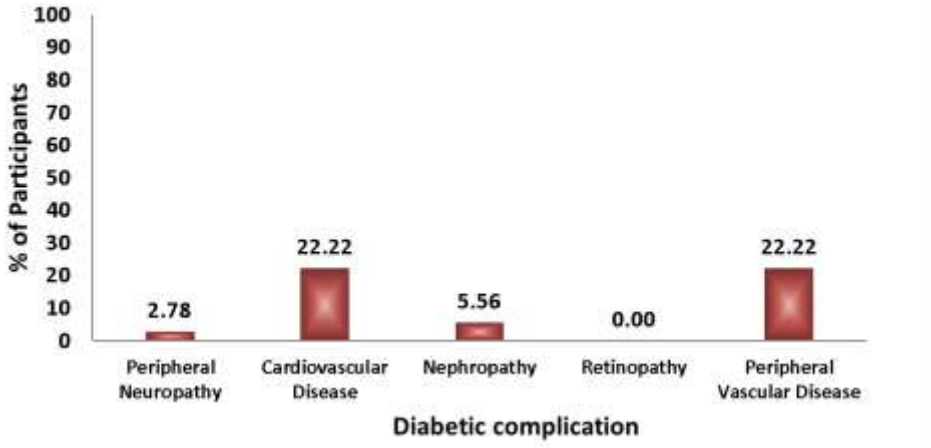


Figure 5. Diabetes-related comorbidities among the diabetic foot syndrome participants.

Figure 6 demonstrates a remarkably high clinical profile of a specific integumentary issue, while other musculoskeletal and vascular signs are also present but less frequent. Thick infected nails is a universal finding, present in 100.00% of the participants. Foot deformities are reported in a substantial minority of the cohort, affecting 47.22% of the participants. Calf muscles pain that is relieved at rest is present in 19.44% of the participants. This symptom is the classic presentation of intermittent claudication, a hallmark sign of Peripheral Artery Disease (PAD), which is a macrovascular complication often associated with diabetes and smoking.

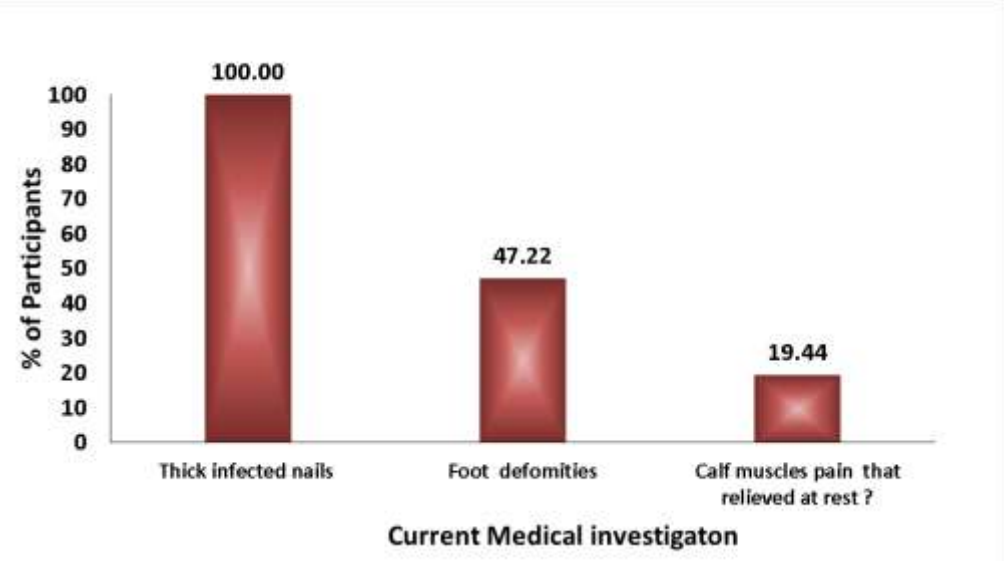


Figure 6. Current medical investigation of the diabetic foot syndrome participants.

The data highlights that Dryness is a universal characteristic of this cohort's skin condition, while other pathological signs show moderate to high clinical profile . Dryness is reported in 100.00% of the participants, suggesting a generalized integumentary issue, often associated with systemic conditions like diabetes and poor circulation. The highest clinical profile among specific pathological conditions is shared by Fissure and Pre-ulcerative lesion, both affecting 41.67% of the participants. Warmth is the least frequent pathological finding, present in 16.67%. This sign, along with redness, is an indicator of active inflammation or deep infection. While, Maceration (softening and breakdown of skin due to prolonged moisture exposure) is reported as 0.00%. This is consistent with the universal finding of Dryness; the skin is severely dry rather than excessively moist (figure 7).

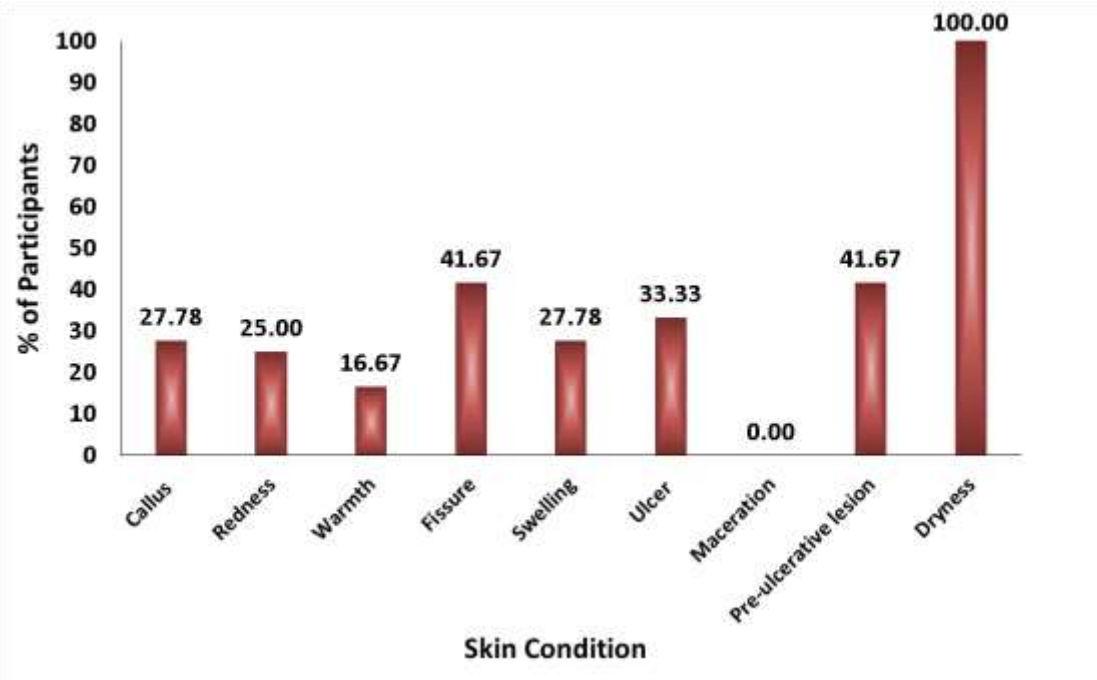


Figure 7. Current skin condition of the diabetic foot syndrome participants.

Figure 8 demonstrates a spectrum of severe diabetic and vascular foot complications. The findings—including cellulitis/inflammation, chronic skin changes, severe necrosis/gangrene, and deep neuropathic and ischemic ulcers—are indicative of Wagner Grade 3 or higher lesions and are associated with a very high risk of major limb amputation and systemic infection (sepsis).

Figure 8. Pre-ulcerative lesions and ulcers in some diabetic foot syndrome participants.

The data shown in figure 9, reveals that a substantial majority of the cohort suffers from some degree of sensory impairment, which is a critical risk factor for foot complications. A total of 76.66% of participants exhibit some form of sensory deficit. While, participants with absent sensory loss (complete lack of protective sensation) make up a substantial 33.33%. Only a minority of participants, 23.33%, were found to have intact sensation.

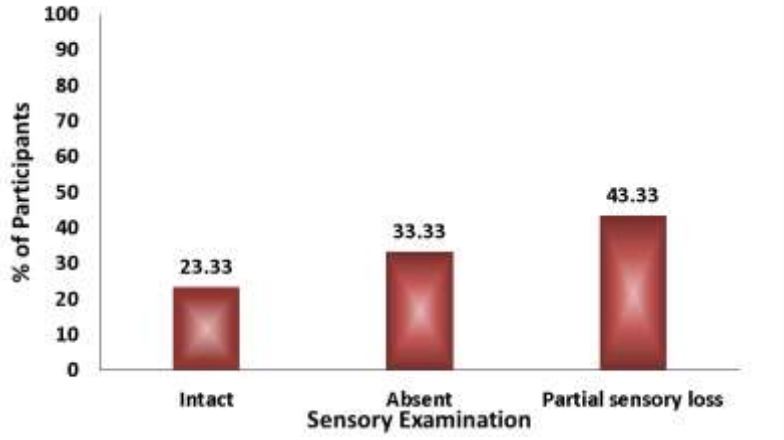


Figure 9. Sensory examination among diabetic foot syndrome participants.

Foot Ulcer Location Distribution chart (10) reveals a remarkably even distribution of ulcer locations across the major anatomical sites of the foot, with an unexpected significant proportion of participants reporting "None." This indicates that 80.00% of the participants in this cohort have a current foot ulcer or

a history of one in a defined site, confirming that the study is focused on a population with an extremely high burden of active foot disease.

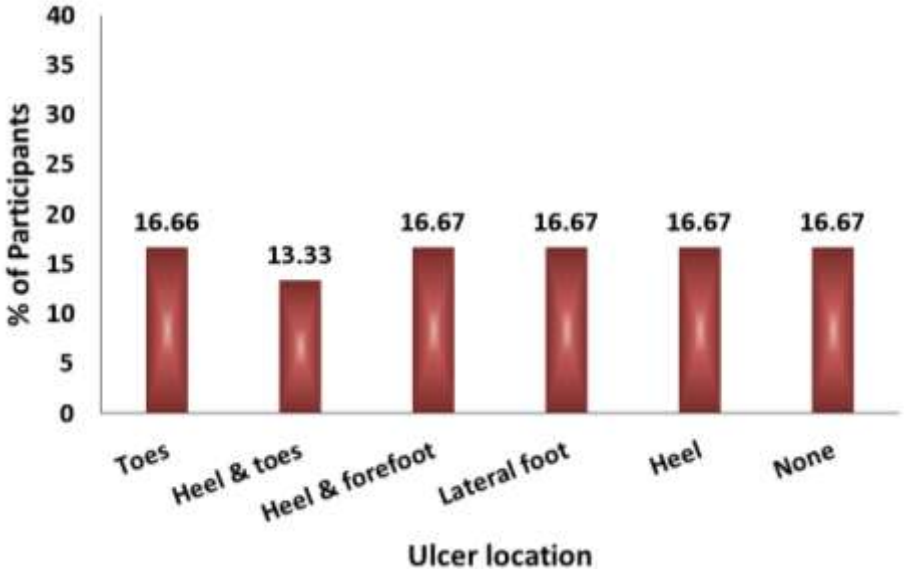


Figure 10. Ulcer location among diabetic foot syndrome participants.

Foot ulcer type distribution bar chart (figure 11) illustrates the classification of Foot Ulcer Type observed among the study participants who have current or recent ulcers, differentiating between Superficial and Deep wounds. The majority of ulcers are classified as Superficial, accounting for 64% of the participants. Superficial wounds involve only the skin layers (epidermis and dermis) or subcutaneous tissue, without extending into the deeper structures. A substantial 36% of the ulcers are classified as Deep. Deep ulcers extend through the skin and subcutaneous tissue to involve deeper structures such as tendon, joint capsule, or bone (e.g., Wagner Grade 3 or higher).

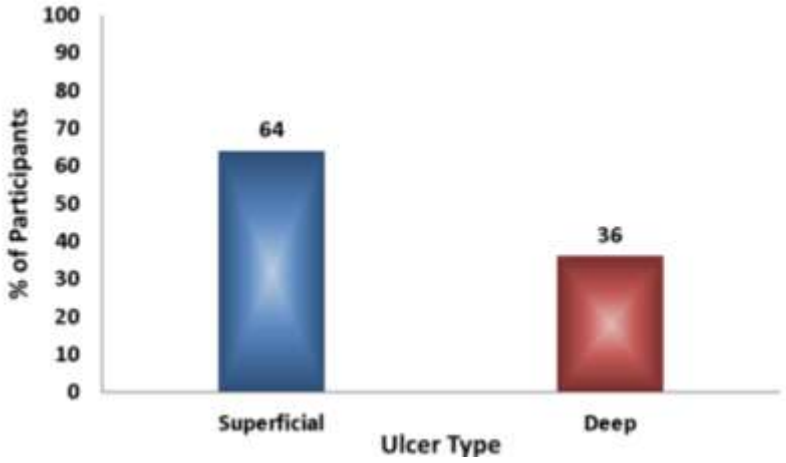


Figure 11. Ulcer location among diabetic foot syndrome participants.

Figure 12 illustrates the distribution of foot ulcer size (in cm2) among the study participants who have ulcers. The data indicates that the majority of ulcers in this cohort are small to medium-sized, with a steep drop-off in clinical profile for larger wounds. The largest proportion of participants, 57.14%, have ulcers in the 5–1 cm2 size range. This range represents small-to-moderate wound areas.

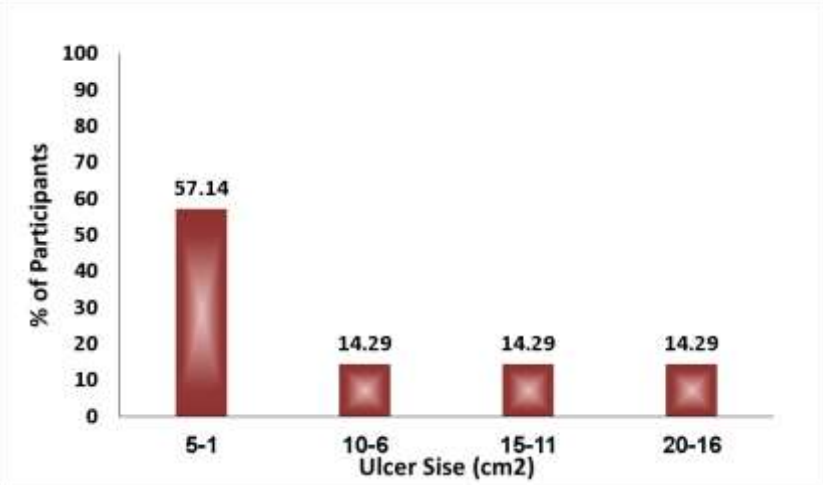


Figure 12. Ulcer size among diabetic foot syndrome participants.

Wound Exudate Color figure (13) presents the color of wound exudate, a clinical indicator of the wound environment and infection status. A significant portion of participants with visible exudate show colors suggestive of bacterial infection: Yellow (26.66%) and Green (23.34%). These two categories combine to represent exactly 50% of cases with visible exudate, confirming a high infectious burden. 40% of participants reported None (no visible exudate), which may indicate dry wounds or deep-seated infection.

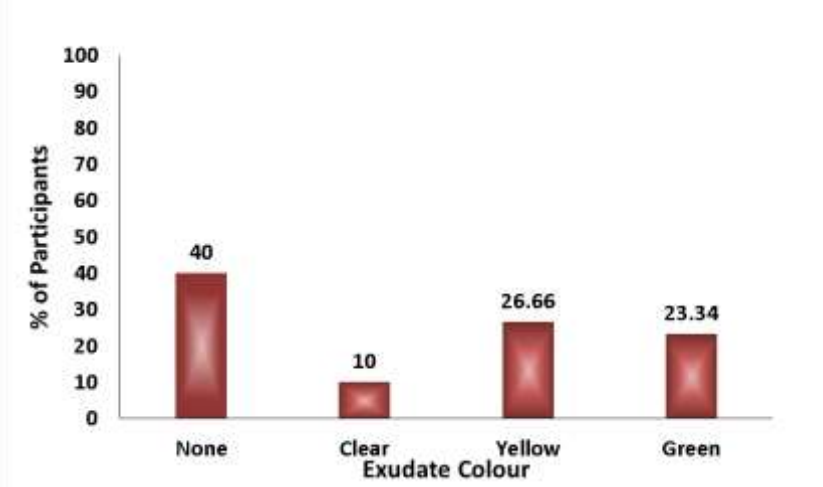


Figure 13. Ulcer size among diabetic foot syndrome participants.

The following figure illustrates the self-reported or clinically assessed nutritional status of the participants. The largest group is categorized as excellent nutrition, accounting for 40% of the participants. However, a significant minority demonstrates poor nutritional status, with Fair and Poor status both accounting for 17% each as shown in figure 14.

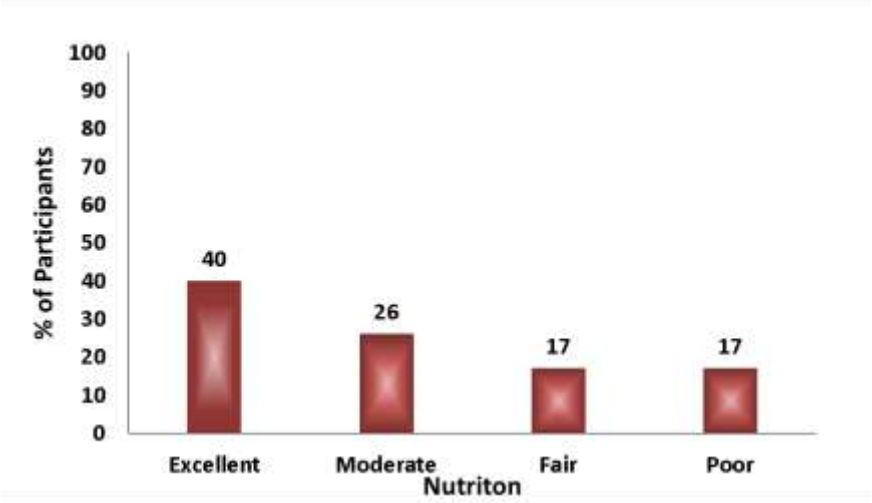


Figure 14. Nutritional status of the participants.

Figure 15 illustrates the distribution of ambulatory status among a cohort of participants. The data reveals a heterogeneous distribution across the different ambulatory categories, suggesting a population with varying degrees of mobility. Ambulatory with assistance represents the largest single category, accounting for 25% of the participants. Non-ambulatory participants make up a substantial portion of the cohort at 22%. The smallest category is ambulatory, which includes 12% of the participants.

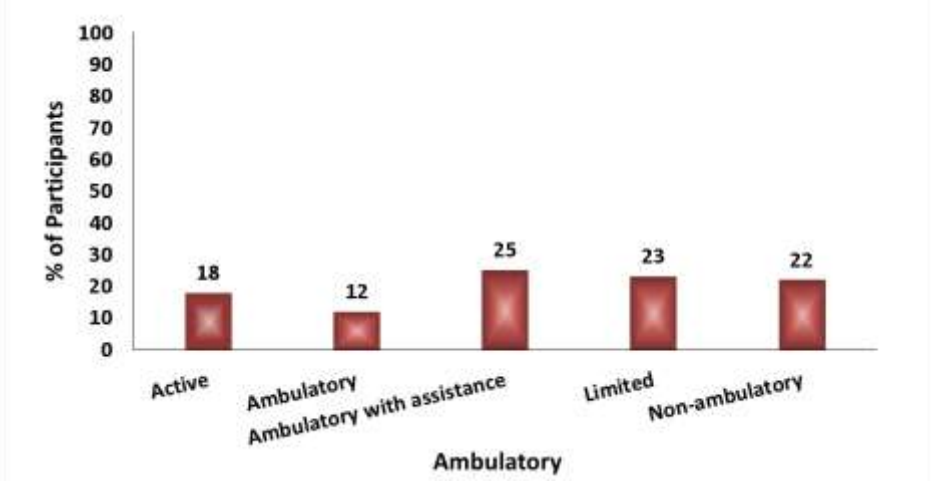


Figure 15. The distribution of mobility status among the participants..

This bar chart in figure 16 displays the distribution of recommendations for care among a cohort of participants. The data illustrates the frequency of different medical and supportive care recommendations within the participant group. Pressure offloading/circulation support is the most frequent recommendation, accounting for 25% of the cohort, highlighting the primary focus on mechanical protection and vascular health. Routine monitoring is the second most common recommendation at 23%, emphasizing the need for ongoing surveillance. Surgical debridement/antibiotics was recommended for 18%, suggesting a significant burden of tissue necrosis or active infection requiring invasive management. Nutritional monitoring/routine screening was recommended for 17%, addressing systemic factors. The overall pattern is skewed towards chronic, high-risk management (e.g., pressure offloading, routine monitoring, surgery) rather than simple care (e.g., topical ointment, 7%).

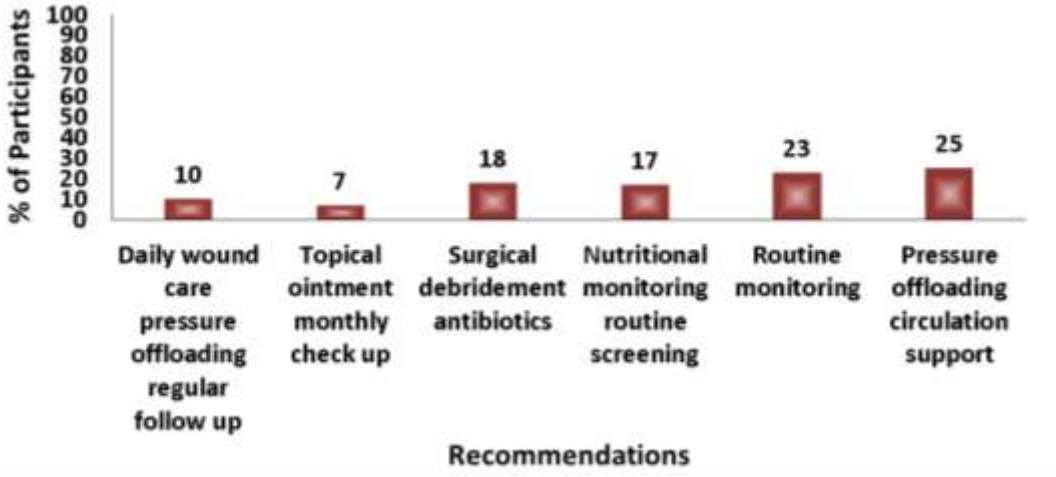


Figure 16. The distribution of clinical recommendations for care among a cohort of participants..

Discussion:

There is limited information available regarding the practices of Libyan diabetic patients when they encounter foot issues such as ulcers, open wounds, and skin fissures. These conditions are often influenced by the beliefs and local culture. As per the Libyan national survey assessing risk factors for non-communicable diseases, the estimated clinical profile of diabetes in Libya stands at 16%..[22] Diabetic foot disorders are among the most dreaded complications associated with diabetes. The most frequently observed manifestation in these disorders is the ulcer, as highlighted by a group of researchers in the past twenty years. If diabetic foot ulcers are not properly managed, they can ultimately lead to amputation. When amputation occurs, it often comes with considerable morbidity and mortality, along with psychological, significant social, and financial repercussions.[23]

Therefore, current study was aimed to: estimate diabetic foot syndrome clinical

profile and risk factors among diabetic patients at Soaq Al-khamees Diabetic Center (Alkhoms city-Libya).

This study characterizes a cohort with severe, advanced Type II Diabetic Foot Disease, driven by chronic metabolic failure and resulting in high morbidity. When we compared the residential area of the participants, the majority of participants were settle in Soaq Alkhamees and Alkhoms area, as the diabetic center is located in Soaq Alkhamees area which is part of Alkhoms area. The population is predominantly male and elderly, defined by suboptimal glycemic control (63.89% with HbA1c above 8.0 mg/dl) and a high clinical profile of smoking (33.33%). This metabolic and behavioral risk profile manifests as profound pathology: (76.66%) of the cohort has sensory impairment, with (33.33%) having absent protective sensation, the primary risk factor for ulcer development. Moreover, the findings are extreme: (100%) have thick infected nails and Dryness. (47.22%) have foot deformities. The skin integrity is highly compromised, with Fissures (41.67%) and Pre-ulcerative lesions (41.67%) common. Active ulcers are present in a large portion of the cohort. (36%) of these wounds are classified as deep, indicating involvement of structures like tendons or bone, and confirming a high risk of osteomyelitis and amputation. (70%) of participants have restricted or absent ambulation, demonstrating the direct link between severe foot pathology and functional disability.

All these results in consistence with other studies; There is a 10-fold greater risk for foot infection and a 30-fold greater risk of lower limb amputation among diabetic patients in comparison to individuals without diabetes.[24] A Libyan study illustrated that about 1.1% of diabetic patients had lower limb amputation.[25] According to one research study, 43% of women admitted to wearing high-heeled shoes, while, 39% of individuals with diabetes were found to wear unsuitable footwear. Another study indicated that 69% of men and 48.5% of women were wearing shoes that did not fit properly. The primary reasons for the lack of adherence to appropriate footwear in our research are likely due to insufficient education and the high cost of proper diabetic shoes. The clinical profile of peripheral vascular disease in our study is notably lower compared to what is reported in existing literature.[22, 26]

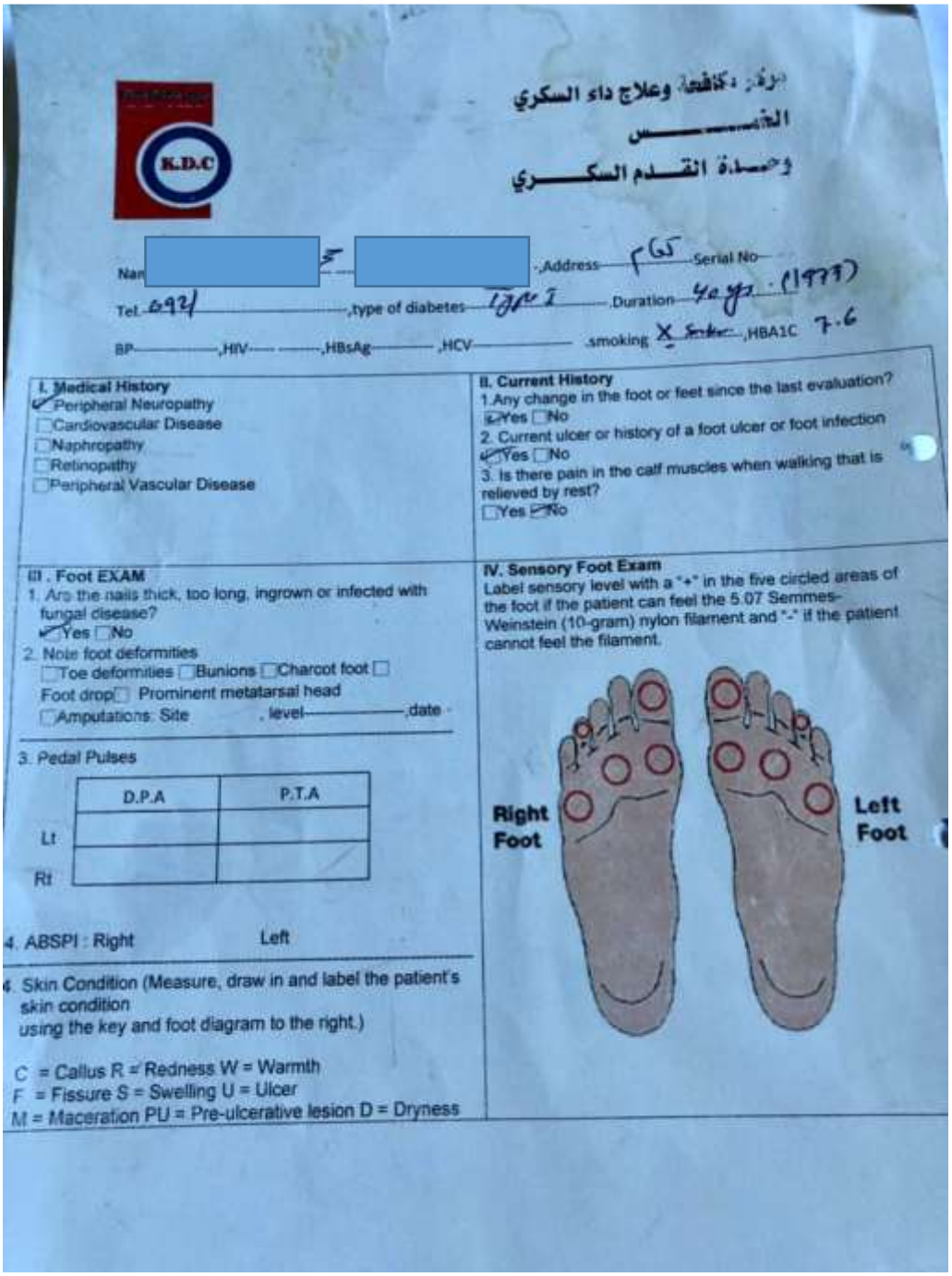
Elevated levels of HbA1c are primarily linked to delayed wound healing, and HbA1c serves as an effective biomarker for the outcomes of foot ulcers (healing duration) in diabetic patients. Recent studies have indicated that glycemic levels could play a novel role in the development of diabetic foot complications and are a significant factor in axonal impairment. Monitoring HbA1c can help in predicting diabetic foot issues in high-risk diabetic individuals, as HbA1c levels tend to rise linearly with the increasing stages of the Wagner classification of diabetic foot. Therefore, maintaining strict control over HbA1c levels, along with educating patients about appropriate foot care, can help avert diabetic foot problems and their associated complications.[27, 28]

Tobacco smoking was not common among the participants in the study. A survey assessing risk factors for non-communicable diseases in Libya indicated that the smoking rate exceeded 50%.[22] The small number of smokers in this study could be attributed to the fear of patients from amputations, moreover, from the fact that the clinical profile of smoking among Libyan females is low. Most of the above-mentioned risk factors of diabetic foot syndrome are lead to extracellular matrix (ECM) abnormalities in their production and remodeling. These Abnormalities contribute to tissue dysfunction and delayed healing. Specifically, diabetes-induced changes in the expression and/or activity of structural proteins, ECM-modifying proteoglycans, enzymes, and matricellular proteins have been reported.[29, 30]

Conclusion

The study concludes that the diabetic population attending the Souq Al-khamees Diabetic Center exhibits a highly complex and aggressive form of diabetic foot disease, primarily driven by uncontrolled hyperglycemia. The cohort is characterized by advanced pathology, including a high prevalence of severe neuropathy (76.66%), foot deformities (47.22%), and deep tissue ulceration (36%). These complications are significantly exacerbated by poor glycemic control, with the majority of patients having HbA1c levels above 8.0 mg/dl, and a universal presence of dermatological compromise such as dryness and infected nails. The findings highlight a critical link between sensory loss, lack of protective footwear, and the development of deep, limb-threatening wounds. Consequently, the current management strategy requires a shift towards more aggressive surgical intervention, strict offloading, and urgent improvements in patient education regarding foot care to prevent the high risk of amputation.

Appendix-I



برنامج تكافلي وعلاج داء السكري
الخمسين
وحماية القدم السكري

K.D.C

Name [redacted] Address [redacted] Serial No

Tel. 092 ,type of diabetes Type 2 Duration 40 yrs (1977)

BP ,HIV ,HBsAg ,HCV smoking X Smoker ,HBA1C 7.6

I. Medical History
- ✓ Peripheral Neuropathy
- ☐ Cardiovascular Disease
- ☐ Naphropathy
- ☐ Retinopathy
- ☐ Peripheral Vascular Disease

II. Current History
1. Any change in the foot or feet since the last evaluation?
✓ Yes ☐ No
2. Current ulcer or history of a foot ulcer or foot infection
✓ Yes ☐ No
3. Is there pain in the calf muscles when walking that is relieved by rest?
☐ Yes ✓ No

III. Foot EXAM
1. Are the nails thick, too long, ingrown or infected with fungal disease?
✓ Yes ☐ No
2. Note foot deformities
☐ Toe deformities ☐ Bunions ☐ Charcot foot ☐
Foot drop ☐ Prominent metatarsal head
☐ Amputations: Site , level , date

3. Pedal Pulses

	D.P.A	P.T.A
Lt		
Rt		

4. ABSPI : Right Left

5. Skin Condition (Measure, draw in and label the patient's skin condition using the key and foot diagram to the right.)

C = Callus R = Redness W = Warmth
F = Fissure S = Swelling U = Ulcer
M = Maceration PU = Pre-ulcerative lesion D = Dryness

IV. Sensory Foot Exam
Label sensory level with a "+" in the five circled areas of the foot if the patient can feel the 5.07 Semmes-Weinstein (10-gram) nylon filament and "-" if the patient cannot feel the filament.

Right Foot Left Foot

مركز مكافحة وعلاج داء السكري
الخمس
وحدة القدم السكري

K.D.C

Assessment Chart for diabetic foot Wound Management

For multiple wounds complete formal wound assessment for each wound.
Name of patient [redacted] Age ...62Y... Serial No .....

Factors which could delay healing:

Immobility	☒	Poor Nutrition	☒	Diabetes	☑	Incontinence	☒
Respiratory/Circulatory Disease	☐	Anaemia	☐	Medication	☐	Wound Infection	☐
Inotropes	☐	Anti-Coagulants	☐	Oedema	☐	Steroids	☐
Chemotherapy	☐	Other.....		Allergies & Sensitivities.....			

pt. c/o H/o fungal infection now 2ndry Bactrial infection ?? 3rd. stage of Diabetic foot infection

Rt Lt

Mark location and number of wounds

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