

**TITLE: A COMPARISON OF PATIENTS WITH DIABETES MELLITUS HAND AND FOOT SYNDROMES**

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**INTRODUCTION:**

Diabetes mellitus (DM) is characterized by development of chronic complications including foot ulcers and diabetes hand syndrome (DHS). The prevalence of diabetic foot ulcers in Nigeria range 0.9% to 8.3%<sup>1</sup>. DHS is often referred to as tropical diabetes hand syndrome and it is associated with significant morbidity. Literature on DHS appears limited in Nigeria.

**OBJECTIVE:**

To present and compare the features of patients with DHS and those of DMFS and to raise awareness about DHS.

**METHODS**

The ward admission charts of patients with DHS and DMFS were reviewed for twelve months. It was a retrospective study. The data obtained from records of each patient included age, sex, type and duration of DM, mode of presentation, and outcome of hospitalization. The risk factors that were considered included family history of diabetes mellitus, history of smoking, presence or absence of peripheral neuropathy and peripheral vascular disease.

The data was presented in both continuous with mean, standard deviation, percentages and categorical variables as chi square. The analyses was done using SPSS 26 with p value  $\leq 0.05$  as statistically significant.

## RESULTS

The total number of patients admitted in the twelve month period for DMHS were seven with female to male preponderance of 4:3 while those with DMFS were 31 with female to male preponderance of 17:14. The average age for both male and female with DMHS were 64.5 (11.90) and 40.7 (18.71) respectively while those with DMFS were 58.3 (9.42) and 53.90 (12.0). Most of the patients with DMFS and DMHS were within the working class group with 70% and 42.9% respectively. All had type 2 DM. Most of the patients presented in very poor glycemic control and especially with hyperglycemic emergencies in DHS. None of the DHS had coexisting hypertension at the time of presentation compare with DMFS with 41.9% with a P value of 0.12. A history of mild trauma from fish bone and crayfish uropod was more common in patients with DHS while spontaneous blister was with DMFS. The middle and index fingers were mostly affected following kitchen mishaps in DHS unlike in DMFS where entire foot was often affected. Most of those with DMFS had amputation as mode of treatment 54.9 % while DHS was 28.6% which was statistically significant. The average duration of stay was shorter in DHS than in DMFS which also a worse outcome.







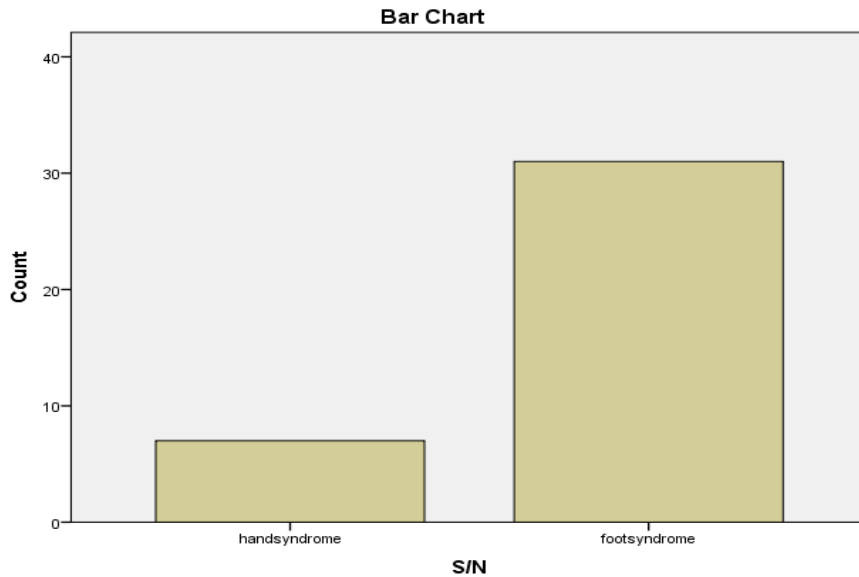












**Figure1: Prevalence of DHS and DMFS.** The prevalence of DHS and DMFS were 18.4 and 81.6% respectively.

**TABLE 1: COMPARISON OF RISK FACTORS IN PATIENTS WITH DHS AND DMFS**

Risk Factors	DHS n(%)	DMFS n(%)	X <sup>2</sup>	P value
Family history	3(23.1)	10(76.9)	0.285 <sup>a</sup>	0.593
Smoking	0(0.0)	4(100.0)	1.009 <sup>a</sup>	0.315
Alcohol	0(0.0)	6(100.0)	1.609 <sup>a</sup>	0.205
Poor drug compliance	7(9.1)	18(90.9)	0.897 <sup>a</sup>	0.344
Duration of Diagnosis of DM (Years)	6.6(6.1)	7.7(6.8)	18.591 <sup>a</sup>	0.233
Peripheral Neuropathy	7(100)	18(58.1)	4.462 <sup>a</sup>	<b>0.035</b>
Peripheral Vascular Disease	2(28.6)	14(45.2)	0.645 <sup>a</sup>	0.422

X<sup>2</sup> : chi square value, DHS- Diabetic Mellitus Hand Syndrome, DMFS- Diabetic Mellitus Foot Syndrome

## **DISCUSSION**

The complications of diabetes mellitus are well recognized such as DMFS and DHS. DHS is more common in the tropical countries<sup>2-4</sup>. Diabetes mellitus is one of the leading causes of extremity amputation worldwide especially lower extremity amputation with similar findings in our study.

Diabetes Hand Syndrome affects mainly the dorsum of the hand and fingers<sup>3</sup> following trivial injuries. The most common risk factor seen in all DHS was peripheral neuropathy while peripheral vascular disease was commoner in DMFS. Most of these complications of diabetes mellitus affect the working class which may lead to permanent disability. Most of our patients presented late, this may account for the high incidence of amputation observed in the study. The patients were managed by multidisciplinary team comprising of endocrinologist, orthopedic surgeon, ophthalmologist, nutritionist and nurses.

## **CONCLUSION**

Diabetes mellitus hand syndrome is less common than DMFS but it is not an uncommon complication of DM. Both appear to affect mostly women but more so in women following trivial injuries. Not only should we educate DM patients and physicians on foot care, we should also provide similar guidelines on preventing and managing hand trauma.

## **CONFLICT OF INTEREST:**

We declare no conflict of interest.

**KEYWORDS:**

Diabetes mellitus; diabetes mellitus hand syndrome; tropical diabetes hand syndrome; fish bone, Crayfish bone, outcome

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