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Research Article

FREQUENCY OF VARIOUS PRESENTATIONS OF FOOT LESIONS IN DIABETIC PATIENTS

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ABSTRACT:

OBJECTIVE: To determine the frequency of various presentations of foot lesions in diabetic patients.

PATIENTS AND METHODS: All diabetic subjects with diabetic foot were evaluated and recruited in the six months cross sectional study to explore their demographical and clinical profile at tertiary care hospital. The frequency (percentage) and mean \pm SD was calculated for qualitative and quantitative variables in patients with diabetic foot ulcer.

RESULTS: During six month study period total 50 patients with diabetes mellitus were explored and studied. The mean \pm SD for age of whole population was 52.98 ± 9.65 with male gender predominance (70%). Regarding mode of presentation, cellulitis 20%, cellulitis with ulcer 30%, cellulitis with gangrene 30% and ulcer 20%. Twenty two (44%) patient has history of trauma while the site of lesion were dorsum of foot 32%, toes 22%, sole 30%, web spaces 10%, lateral aspects 06% where the PVD and neuropathy was identified in 40% and 62%. The osteomyelitis detected in 28% whereas the common pathogens were staphylococcus aureus 28%, escherichia coli 20%, pseudomonas aeruginosa 26%, Klebsiella 16% and proteus 10%.

CONCLUSION: The primary component for diabetes foot issue is neuropathy, vasculopathy, hyperglycemia, diminished safe framework, high mechanical weight over the foot

KEYWORDS: Vitamin D, Foot ulcer and Diabetic foot.

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INTRODUCTION:

Diabetic foot ulceration is a typical yet as a rule a famously preventable confusion that influences diabetic population. Hazard factors incorporates are physical neuropathy, high mechanical foot weight, callus arrangement, disfigurements and vascular disorders [1]. Foot ulceration is a noteworthy wellspring of dismalness in diabetic patients and the metabolic alteration in these individuals are portrayed by modifications in starch, lipids and protein digestion auxiliary to missing or reduced insulin emission as well as insufficient insulin activity [2]. Vascular disorder comprises of both macrovascular and microvascular alterations and the variations from the norm in nerve lies either in metabolic rotation in the nerve itself or optional to vascular etiology [3]. Diabetic patients are inclined to the advancement of delicate tissue disease of the foot on account of ischemia and neuropathy. These contaminations are poly microbial in nature, and keeping in mind the goal is to maintain a strategic management and should be suitably analyzed and treated [4]. Wellbeing related personal satisfaction is a multidimensional idea that incorporates parts of survival, the impact of illness or debilitation on social, mental, physical capacity; tolerant wellbeing observation; social opportunity and fulfillment. The diabetic population, who had foot ulcer, also leads to osteomyelitis [5]. The diabetic foot issue is a standout amongst the most widely recognized and most preventable complexities of diabetic mellitus by doing general examination of foot every day, by wearing fitting shoes, scanning for redness and others indication of injury and by staying away from profound trimming of nails, smoking, utilization of

synthetics or sharp instruments to trim calluses [6]. Thus the present study was conducted to determine the various presentations of foot lesions and to explore the management protocol in patient with diabetic foot lesion.

PATIENTS AND METHODS:

The patients admitted at tertiary care hospital were included in the six months cross sectional study. All the diabetic population patients of ≥ 35 year of age, either gender had foot lesion admitted in the department of medicine, surgery and orthopedic were recruited and studied. The detailed clinical history of every patient was noted to explore the risk factors and modes of presentation while all the baselines and specific investigations (as Doppler studies, radiographs, pus for culture and sensitivity) were advised. The management protocol includes good glycemic control, surgical intervention, antibiotics, offloading and wound care. The exclusion criteria of the study were individuals with chronic leg and foot ulcer due to etiology other than diabetes mellitus and patients with chronic severe systemic illness. The data was collected on pre-structured proforma and analyzed in SPSS 17 to calculate the frequencies, percentages and mean \pm SD.

RESULTS:

During six month study period total 50 patients with diabetes mellitus were explored and studied. The mean \pm SD for age of whole population was 52.98 ± 9.65 with male gender predominance (70%). The demographical and clinical profile of the patients is presented in Table 1.

TABLE 01: THE DEMOGRAPHICAL AND CLINICAL PROFILE OF THE STUDY POPULATION

Parameter	Frequency (N=50)	Percentage (%)
AGE (yrs)	10	20
35-39	15	30
40-49	12	24
50-59	10	20
60+	03	6
GENDER		
Male	35	70
Female	15	30
DURATION OF DIABETES (yrs)		
≤5	20	40
>5	30	60
MODE OF PRESENTATION		
Cellulitis	10	20
Cellulitis with ulcer	15	30
Cellulitis with gangrene	15	30
Ulcer	10	20
HISTORY OF TRAUMA		
Yes	22	44
No	28	56
SITE OF LESION		
Dorsum of foot	16	32
Toes	11	22
Sole	15	30
Web spaces	05	10
Lateral aspects	03	06
PVD		
Yes	20	40
No	30	60
NEUROPATHY		
Yes	31	62
No	19	38
OSTEOMYELITIS		
Yes	14	28
No	36	72
PATHOGEN		
Staphylococcus Aureus	14	28
Escherichia coli	10	20
Pseudomonas aeruginosa	13	26
Klebsiella	08	16
Proteus	05	10

DISCUSSION:

Diabetic foot ulceration is a genuine and costly inconvenience with extensive dismalness that influences majority of diabetic patient amid their life time. Diabetes is a disorder of metabolic, vascular and neuropathic parts that are interrelated [7]. Foot ulcer go before 85% of all non horrendous lower appendage removal and half of all non awful lower appendage removal in the United States are performed in people with diabetes [8]. For a man with diabetes to build up a diabetic foot, at least one of the accompanying four segments are basic - Neuropathy, Vasculopathy and contamination, the fourth critical hazard factor is expanded plantar weight prompting ulceration [9]. Blood glucose control is to be judged over a traverse of time and clearly incidental blood glucose test won't give any thought regarding genuine control. This has been one of the real drawbacks of the technique accessible to judge blood glucose estimation and has to some degree been mitigated by utilizing an estimation of the glycosylated hemoglobin levels. In present study, the most common age period presented with diabetic foot lesions were between 35-49 year and is consistent with the study by Iraj B, et al [10]. In current series 70% were males and 30% were females. Male power has no unmistakable clarification yet might be because of that the males are presented to more wounds amid their work related and recreational exercises that put more weight on the feet [11].

Cellulitis with ulcer and gangrene is observe in our presented population and are consistent with the study by Apelquist J [12]. 22 (44%) patients had history of trauma and the finding is consistent with the study by Reiber GE, et.al. series [13]. The dorsum of foot and sole are commonly affected sites and is also reported in the study by Apelquist J [12]. In present series as the diabetes durations increases there will be more complication rate, is also formerly reported [13, 14]. The injury in vessels that adds to the advancement of ulceration is the atherosclerosis of the tibial and peroneal vessels that prompts diminished stream of the blood to the foot, bringing about diminished conveyance of oxygen, supplements and anti-infection agents to the foot additionally hampering like odds of healing [15]. In current series the neuropathy was observed in 62% patients. The tolerant with unadulterated neuropathic ulcers have a sufficient blood supply and create ulceration on account of higher weight. Individuals with neuropathy can stroll on pins, glass and other sharp questions without monitoring it. Osteomyelitis was detected in 28% patients. Thus the

demineralization, periosteal reaction and bony destruction are the classical radiographic triad of osteomyelitis appears only after 30 – 50 of bone destruction [16]. In present series, pus or seropurulent fluid sent for culture and sensitivity and the common organisms founds were *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *E coli*, *Klebsilla* and *Proteus*. This observation is consistent with the study by Lavery LA, et al [17]. Contaminations are the third main consideration in the pathogenesis of diabetic foot injury and connect with the ischemia prompts removal. In introduce contemplate expansive range anti-infection agents were given to all patients to control diseases and to maintain a strategic distance from cross contaminations at first took after by changes in anti-infection agents in view of culture and affectability. Hyperglycemia ought to be observed nearly and controlled, on the grounds that it might build the harmfulness of microorganisms and is steady with the previous examination [18]. In present study the diabetes was controlled with insulin preparations, oral hypoglycemic drugs and with diabetic diet only while the random blood glucose was monitored 8 hourly to evaluate any fluctuation in blood sugar level.

CONCLUSION:

The primary component for diabetes foot issue is neuropathy, vasculopathy, hyperglycemia, diminished safe framework, high mechanical weight over the foot

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