

Original article:

Study of distribution of cases of Peripheral vascular disease in diabetics

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Abstract:

Introduction: The presence of DM involves a two- to fourfold increased risk of PVD by causing endothelial and smooth muscle cell dysfunction in peripheral arteries. Diabetics account for up to 70% of nontraumatic amputations performed, and a known diabetic who smokes has an approximately 30% risk of amputation within 5 years

Methodology: Diabetic disease cases admitted in B.L.D.E.U's Shri B. M. Patil Medical College, Hospital & Research Centre / attending surgical OPD. Diabetic disease cases admitted in B.L.D.E.U's Shri B. M. Patil Medical College, Hospital & Research Centre / attending surgical OPD during period of Oct 2014 to July 2016.

Results: In this study, the mean age of presentation of patients was 53 years with maximum number of patients in the age group of 56 to 65 years. The number of newly diagnosed diabetics (70%) also greatly outnumbered the previously diagnosed or known diabetics (30%).

Conclusion: Early diagnosis of both Diabetes as well as PVD in those patients, coupled with regular treatment & follow-ups are key to the management of both Diabetes & PVD, and their complications. Prevention of morbidity should be aggressively pursued so as to provide a viable lifestyle to the patient.

INTRODUCTION

The presence of DM involves a two- to fourfold increased risk of PVD by causing endothelial and smooth muscle cell dysfunction in peripheral arteries. Diabetics account for up to 70% of nontraumatic amputations performed, and a known diabetic who smokes has an approximately 30% risk of amputation within 5 years. PVD is common among patients with diabetes¹. Ischaemic change is twice as common among diabetic patients than among nondiabetic patients. An increase in HbA1C by 1% can result in more than a 25% risk of PAD. Major amputation

rates are five to ten times higher in diabetics than nondiabetics²⁻⁵.

Insulin-dependent diabetic patients may have calcified walls of the medium and small arteries that can falsely elevate the segmental pressures of the leg. In this situation, digital pressures of the toes can be accurately measured and a pressure higher than 30 mm Hg is predictive of healing after local amputation and debridement. The presence of DM involves a two- to fourfold increased risk of PVD by causing endothelial and smooth muscle cell dysfunction in peripheral arteries 6,7 .

METHODOLOGY

Source of data:

Diabetic disease cases admitted in B.L.D.E.U's Shri B. M. Patil Medical College, Hospital & Research Centre / attending surgical OPD.

Method of collection of data:

Diabetic disease cases admitted in B.L.D.E.U's Shri B. M. Patil Medical College, Hospital & Research Centre / attending surgical OPD during period of Oct 2014 to July 2016.

Details of cases will be recorded including history, clinical examination, measuring ABPI & TBI and Colour Doppler imaging & other routine investigations done. Detailed information regarding Peripheral Vascular

Disease & Diabetes will be entered in the proforma. These patients with confirmed Peripheral Vascular Disease and Diabetes will undergo treatment as deemed necessary.

Inclusion Criteria

All cases of Diabetes admitted in B.L.D.E.U's Shri B. M. Patil Medical College, Hospital & Research Centre / attending surgical OPD will be included in the study.

Exclusion Criteria

1. Patients with peripheral vascular disease with no evidence of diabetes.
2. Patients with bilateral amputations of great toe or bilateral lower limb amputation.

RESULTS

Table 1 : Distribution of cases according to Diabetes

Diabetes (New/Old)	N	%
New	56	70
Old	24	30
Total	80	100

Majority of the patients (70%) were newly diagnosed diabetics

Table 2: Distribution of cases according to Procedure

Procedure	N	%
Appendicectomy	3	3.8
Below knee amputation	37	46.2
conservative	30	37.5
Excision of mass	1	1.2
Fistulectomy	1	1.2
hemorrhoidectomy	1	1.2
Herniotomy	1	1.2
Jaboulay's Procedure	2	2.5
lipoma excision	1	1.2
Mesh Hernioplasty	3	3.8
Total	80	100

Table 3 : Distribution of cases according to Outcome

Outcome	N	%
Recovered	31	38.8
Wound healed after amputation	39	48.8
Revision amputation	10	12.5
Total	80	100

DISCUSSION

A key principle in the treatment of peripheral atherosclerosis is the hemodynamic assessment of circulatory impairment, which assumes paramount importance in comparison to the anatomic presence or distribution of lesions. The most common source of error in the ABI is false elevation resulting from extensive vascular calcification, as is common in diabetic patients. In these instances, other measures of distal perfusion (e.g., toe pressures, transmetatarsal pulse volume recording, transcutaneous oximetry) may be more reliable indicators of physiologic impairment.

In this study, the mean age of presentation of patients was 53 years with maximum number of patients in the age group of 56 to 65 years. The number of newly diagnosed diabetics (70%) also greatly outnumbered the previously diagnosed or known diabetics (30%). This shows that late diagnosis of diabetes was due to late presentation of the patients to the hospital and that more number of complications were to be expected, including peripheral vascular disease.

The most common presentation of diabetics who were later diagnosed with peripheral vascular disease was Ulcer Over the Foot (26 patients; 32.5%) and 21 of those patients underwent below knee amputation. Revision amputation with above knee amputation was required in 6 of these patients, signifying a virulent form of the disease. ABPI was normal

in all these patients signifying the low sensitivity in patients with late presentation, most probably due to medial sclerosis that affects the peripheral arteries in long standing/untreated diabetics. The mean HbA1c was 9, signifying a poor control of diabetes in 85% (68 patients) of cases with Peripheral Vascular Disease. Overall, 37 patients (46.2%) underwent below knee amputations signifying the high morbidity associated with late diagnosis of peripheral vascular disease in diabetes.

Amongst 80 cases, only 9 (11.2%) of diabetics were diagnosed with PVD accurately using ABPI when compared to TBI which was able to diagnose PVD in 68 patients (85%) of diabetes in the study group. This signifies the high sensitivity & accuracy of TBI (85%) when compared to ABPI (11.3%), thereby making it an ideal screening test for diabetes.⁸

Conclusion:

Early diagnosis of both Diabetes as well as PVD in those patients, coupled with regular treatment & follow-ups are key to the management of both Diabetes & PVD, and their complications. Prevention of morbidity should be aggressively pursued so as to provide a viable lifestyle to the patient. Cessation of smoking, exercise, low fat diet & weight control should be incorporated to the lifestyle modification that should be strenuously advised to the patients.

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