Research Article **IJHP 2019, 4:31**

International Journal of Hospital Pharmacy
(ISSN:2574-0318)

An observation cross sectional study to assess the prevalence of micro vascular complications in diabetes

Nishad Unissa, Mariya Mahveen, Shiva Kumar, Katla. Swapna

Department of Pharma.D, Bharat Institute of Technology-Pharmacy, Mangalpally, Ibrahimpatnam, KIMS, Telangana 501510, India.

ABSTRACT

Diabetes mellitus is the commonest metabolic disorder and has a high prevalence in India. The prognosis of the diabetic patients largely depends on the complications seen in the natural course of illness. It was decided to undertake observational study to record various complications and the influence of various risk factors.(1)

Diabetes mellitus is a long term metabolic disorder that is characterized by high blood sugar, insulin resistance, and relative lack of insulin.(2) Diabetes is a syndrome characterised by chronic hyperglycemia and disturbance of carbohydrate, fat and protein metabolism associated with absolute or relative deficiencies in insulin secretion and/or insulin action(3).

Complications of diabetes

The longer duration of diabetes the less controlled of blood sugar levels leads to development of diabetic complications which are divided into microvascular (damage to small blood vessel) and macrovascular (damage to large blood veseels).

- Micro vascular complications: These are Long term complications that affect retina, kidney and nervous system(3). Permanent disability is a common outcome of diabetes, with late complications of diabetes being major determinants for disability. Diabetic eye disease particularly retinopathy, has become a major cause of blindness throughout the world.
- Macro vascular complications: Type 2 diabetes can also affect the large blood vessels, causing plaque to eventually build up and potentially leading to a heart attack, stroke or vessel blockage in the legs (peripheral vascular disease) Diabetic foot also occur with higher frequency in diabetes(4,5).

***Correspondence to Author:**
Katla. Swapna
Department of Pharma.D, Bharat Institute of Technology-Pharmacy, Mangalpally, Ibrahimpatnam, KIMS, Telangana 501510, India.

How to cite this article:
Nishad Unissa, Mariya Mahveen, Shiva Kumar, Katla. Swapna. An observation cross sectional study to assess the prevalence of micro vascular complications in diabetes. International Journal of Hospital Pharmacy, 2019,4:31.

eSciPub LLC, Houston, TX USA.
Website: https://escipub.com/

INTRODUCTION

The contributions of risk factors other than blood glucose level have yet to be clearly identified and quantified. The relative importance of diabetic control and other risk factors must be identified so that appropriate preventive strategies can be considered .This study was undertaken to define more clearly the risk factors influencing susceptibility to such complications in diabetic patients.

Recent WHO reports show that India already has the largest number of diabetic patients in the world and showed coronary heart disease prevalence rates in diabetics between 26% and 35% with higher rates in women and with much heterogeneity among countries. Similar study carried out in south India showed high prevalence of vascular complications in type-2 diabetes.[6]

MATERIALS AND METHODS

A Prospective observational non-invasive study was carried out in the type 2 diabetic patients enrolled in a diabetic clinics i.e. KIMS. A total of 200 type 2 diabetic patients including new and review cases were seen at the center during this period. All diabetic patients registered at diabetic clinics were screened for diabetes and its complications. All patients showed their willingness to give informed consent, hence the present study was conducted on 200 patients. Details regarding age, sex, socioeconomic status duration of diabetes and treatment history of diabetes were recorded in all patients. Pregnant diabetic cases or gestational diabetes and type 1 diabetics were excluded from the study. The selected patients were evaluated for presence of vascular (micro and macro vascular) complications i.e., coronary artery disease, cerebrovascular disease, peripheral vascular disease, retinopathy, nephropathy and neuropathy by relevant investigations.

The selected patients are to observed for presence of vascular (micro and macro) complications who had undergone the test for Retinopathy by fundus examination. Nephropathy by micro albuminuria, serum creatinine and blood urea, Neuropathy by history of numbness paraesthesia, tingling sensation, burning sensation and confirmed by touch sensation, Peripheral vascular disease (PVD) by colour Doppler, Cardiovascular disease by ECG, Chest X-ray and by history of myocardial infarction or angina, Cerebrovascular disease by CT Scan of brain ,Impaired speech, inability to see in one eye or double vision Inability to walk and Paralysis on one side of the body and Diabetic foot problems known by foot ulcers or amputation (AMP).

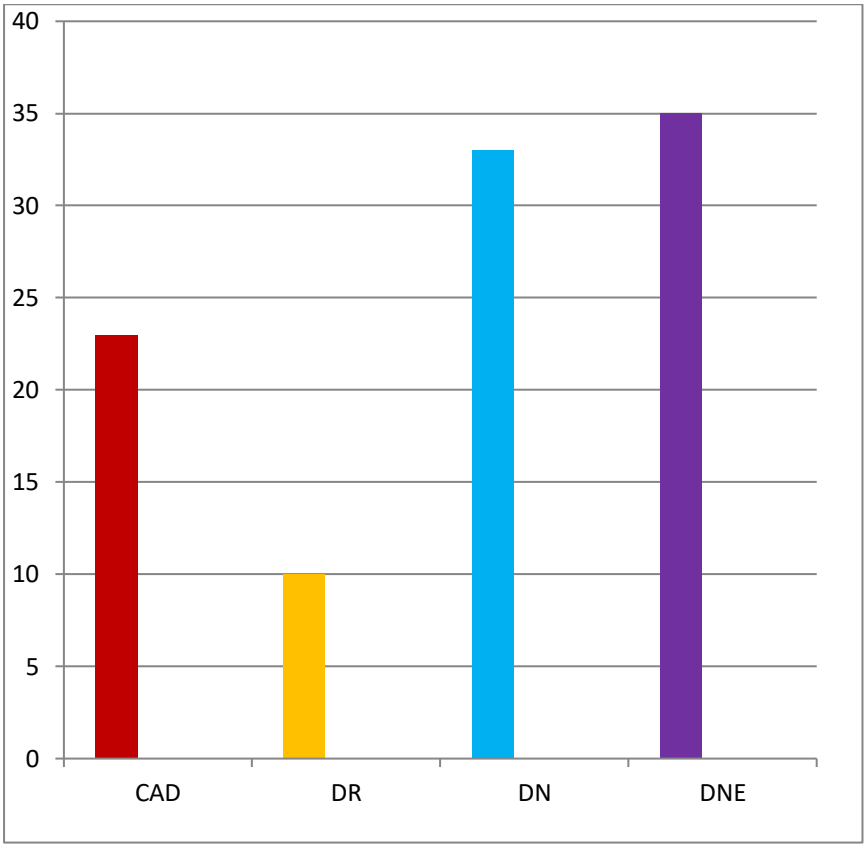
RESULTS AND DISCUSSION

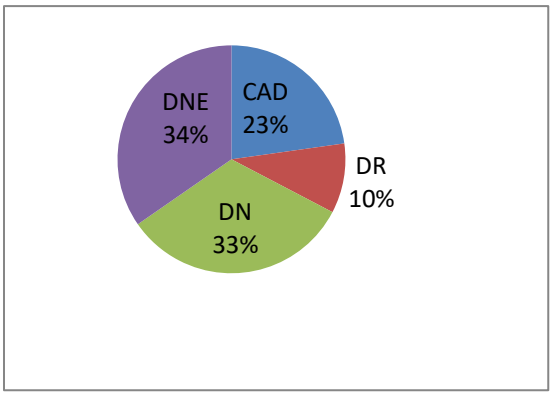
An observational cross-sectional study to assess the prevalence of cardiac and micro vascular complications was conducted during the period of six months. A total of 200 cases of diabetic complications were identified during the study period.

OVER ALL DISTRUBTION OF COMPLICATIONS

COMPLICATIONS	NO. OF PATIENTS	PERCENTAGES%
CAD	45	23%
DR	20	10%
DN	65	33%
DNE	70	35%
Total-	200	100%

PERCENTAGES OF COMPLICATIONS IN POPULATION



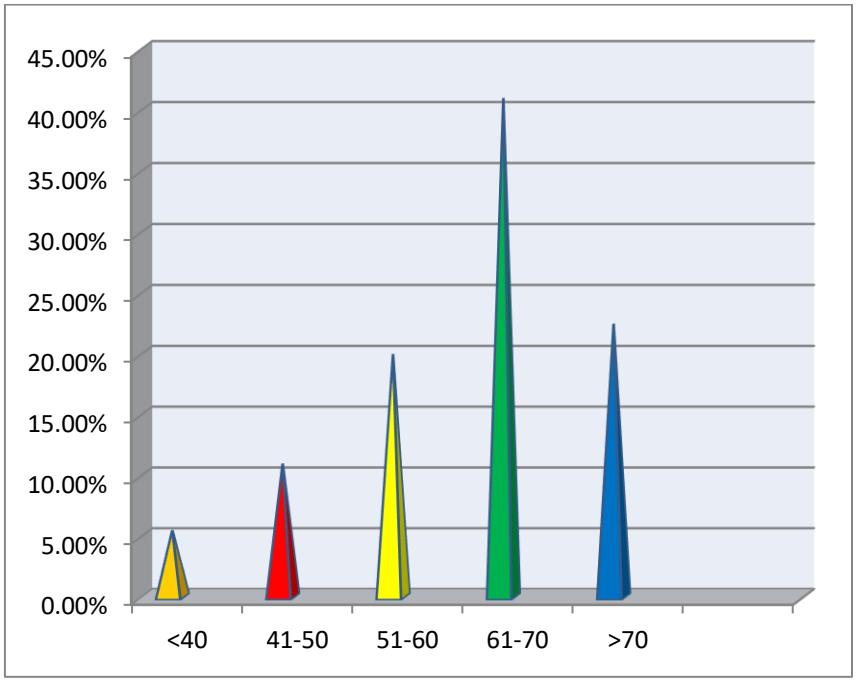


Total no. of 200 diabetic patients are involved in the study and were divided according to their complications, the results revealed that CAD with 20%, DR with 15%, DN with 30% and DNE with 35%.

AGE DISTRIBUTION

Distribution of patients Based on age:

AGE GROUP (YEARS)	NO OF PATIENTS	PERCENTAGES%
<40	11	5.5%
41-50	22	11%
51-60	40	20%
61-70	82	41%
>70	45	22.5%
TOTAL NO OF PATIENTS-	200	100%

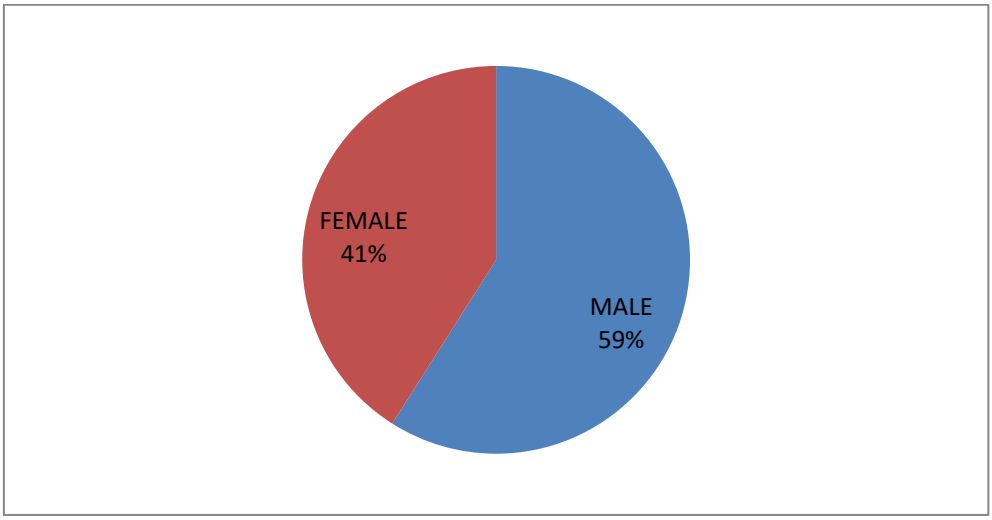


Total no. of 200 patients was involved in the study and was divided according to their age groups(<40,41-50,51-60,61-70,>70) and it was compared. The results show that patients of age groups 61-70 are more exposed to Diabetic complications.

GENDER DISTRIBUTION

GENDER DISTRIBUTION

GENDER	NO.OF PATIENTS	PERSENTAGE%
MALE	118	59%
FEMALE	82	41%
TOTAL	200	100%



Total no of 200 diabetic patients are involved in the study and were divided according to their gender. The results reveal that male patients (n=118) percentage is 59% was more when compared to female patients (n=82) percentage is 41%. Vascular complications are mostly present in Males then Females.

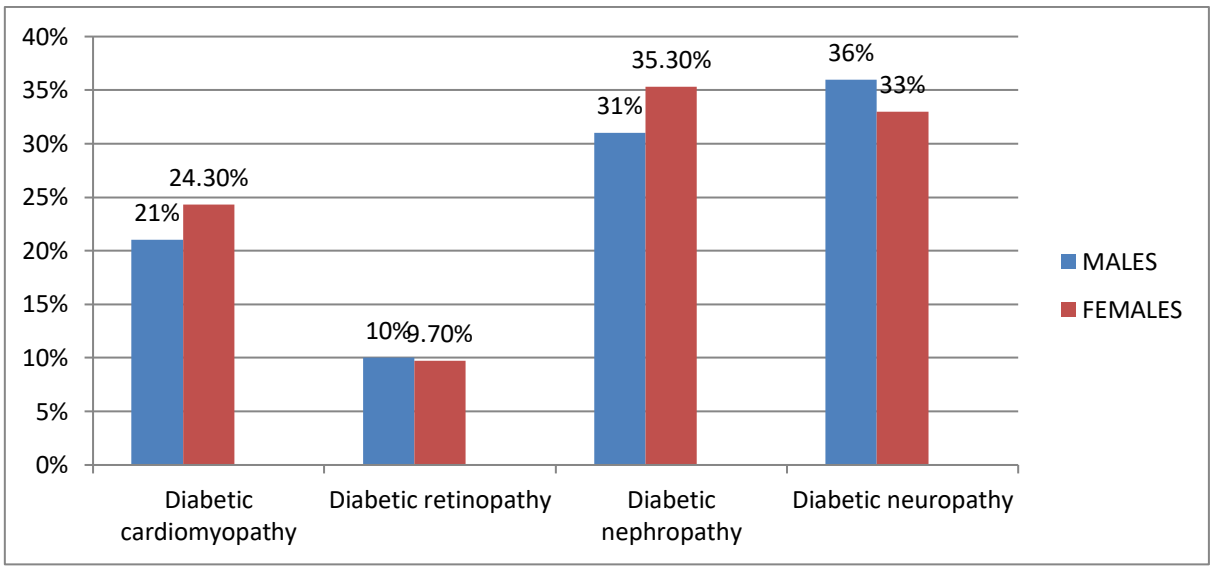
GENDER DISTRIBUTION BASED ON THE COMPLICATIONS

TABLE NO 1: DISRTIBUTION OF COMPLICATIONS IN MALES.

NO OF MALE PATIENTS	DIABETIC CARDIOMYOPATHY	DIABETIC RETINOPATHY	DIABETIC NEPHROPATHY	DIABETIC NEUROPATHY
118	25	12	36	43

TABLE NO 2: DISTRIBUTION OF COMPLICATION IN FEMALES.

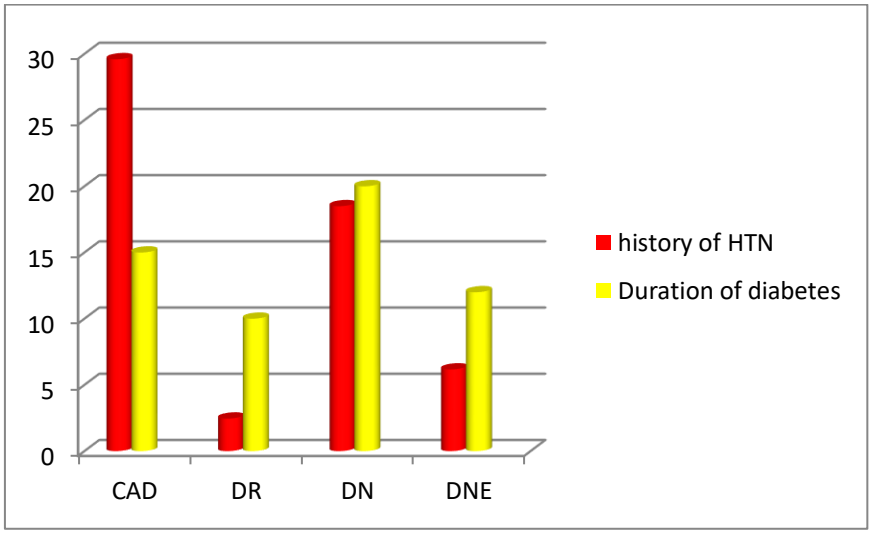
NO OF FEMALE PATIENTS	DIABETIC CARDIOMYOPATHY	DIABETIC RETINOPATHY	DIABETIC NEPHROPATHY	DIABETIC NEUROPATHY
82	20	08	29	27



Result showing that, diabetic neuropathy(36%) is more prone in males and diabetic retinopathy (35.30%) is more common in females.

HISTORY OF HYPERTENSION AND DURATION OF DIABETES AND ITS PREVALENCE WITH VASCULAR COMPLICATIONS

COMPLICATIONS	HISTORY OF HTN N=81	DURATION OF DIABETES
CAD	24 (29.6%)	15YRS
DR	02 (2.46%)	10YRS
DN	15 (18.5%)	20YRS
DNE	05 (6.17%)	12YRS

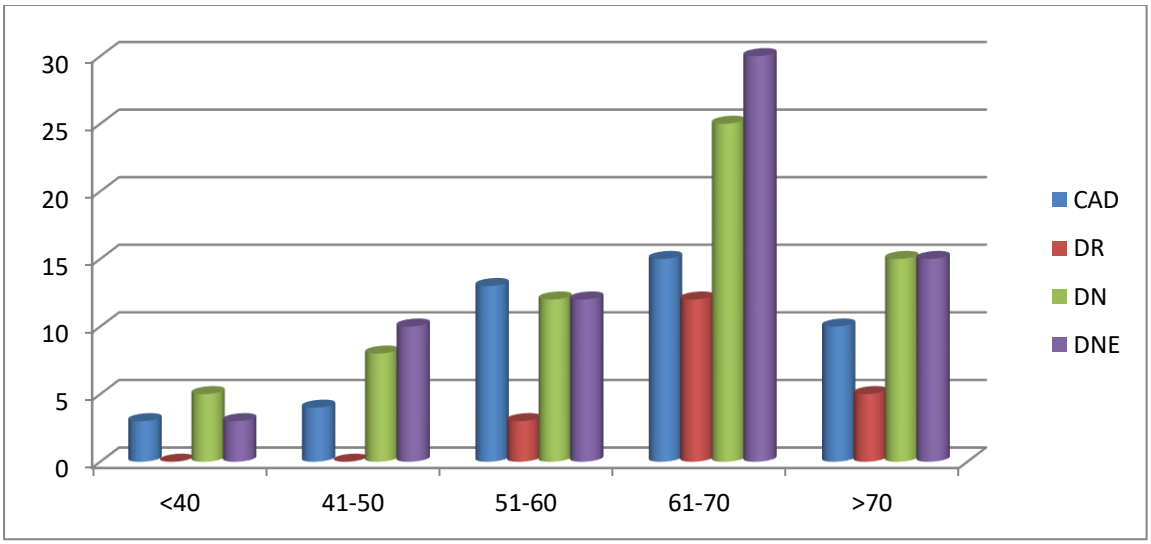


Among the total participants, 81 patients with the history of hypertension. Out of which patients among CAD with 24 (29.6%), DR with 02 (2.46%), DN with 15 (18.5%), and DNE with 05 (6.17%), and duration of Diabetes in that patients was noted.

OVER ALL AGE OF THE PATIENTS AND ITS PREVALENCE WITH VARIOUS VASULAR COMPLICATIONS

AGE GROUP (YEARS)	CAD N=45	DR N=20	DN N=65	DNE N=70
<40	3	0	5	03
41-50	4	0	8	10
51-60	13	3	12	12
61-70	15	12	25	30
>70	10	05	15	15

AGE OF PATIENTS AND ITS PREVALENCE WITH VARIOUS COMPLICATIONS



It is found that the patients with CAD, DR, DN and DNE complications are high prevalent in age group between 61-70.

INTERPRETATIONS

This study highlights the high prevalence of vascular complications in Diabetic patients. It is found that Diabetic Neuropathy and Diabetic Nephropathy were the commonest complications of Diabetes in the study population.Macro vascular complications in which we have taken only Diabetic cardio myopathy are detected in 45 patients and micro vascular complications are in 155 patients**.**

CONCLUSION

Macrovascular complications in which we have taken only Diabetic Cardiomyopathy are detected in 45 patients and Microvascular complications are in 155 patients. Micro vascular complications are found to be more prevalent when compared to Macro vascular complications, which are associated with various risk factors like age, duration of Diabetes, gender, B.M.I, history of Hypertension, family history, socioeconomic status, smoking status, medication adherence and exercise and diet control. Males are more prevalent for developing Diabetes vascular complications when compared to Females. Low medication adherence, B.M.I, family History of Diabetes and History of Hypertension are the most significant risk factors in our study. The progression of most complications can be halted or delayed if detected early and appropriate therapy instituted

REFERENCES

1. A study on prevalence of micro and macro vascularcomplications in type 2 diabetes and their risk factors v. ChinnariHarika, D. JalajaKumari, B. Babitha and Ch. Manmohan
2. Effect of Teneligliptin supplementation as add on therapy to Metformin in Uncontrolled type 2 diabetes mellitus Abhijeet Jain, Vaibhav Yadav, Rajesh Kumar Jha
3. Kahr CR, Weire GC, Lea and Febiger. Joslin's diabetes mellitus, 13thed. Philadelphia, 1994; 193-194.
4. Ramachandran A, Snehalatha C, Dharmaraj D, Vishwanathan M. Prevalence of glucose intolerance in Asian Indians. Urban rural difference and significance of upper body adiposity. Diabetes Care1992;15:1348-1355.3.
5. Ramachandran A, Snehalatha C, Latha E, Vijay V, Vishwanathan M. Rising prevalence of NIDDM in urban population in India. Diabetologia 1997;40: 232-7
6. Ramachandran A, Snehalatha C, Satyavani K, Latha E, Sasikala R, Vijay V. Prevalence of vascular complications and their risk factors in type 2 diabetes. Journal of Assoc Physicians India 1999;47:1152-6