

# PREVALANCE OF RISK FACTORS FOR IHD IN DIABETIC AND NON-DIABETIC PATIENTS

Khan A.M.<sup>1</sup>, Ali W.<sup>2</sup>, Mohsin J<sup>3</sup>

<sup>1,2,3</sup> House Officer, Services Institute of Medical Sciences/Services Hospital Lahore

Jail Road, Lahore, Pakistan

## **Abstract:**

**Background:** Diabetes is a major risk factor for Ischemic heart disease (IHD) mortality. There is a little information on how it contributes to the causation and how it accelerates the disease progression when combined with other associated risk factors (i.e. smoking, hypertension and sedentary lifestyle).

**Objective:** To observe and compare the prevalence of major risk factors for IHD among diabetics and non-diabetics.

**Study Design:** Descriptive, Cross sectional

**Place and Duration:** Outdoor department, Punjab Institute of Cardiology Lahore, May-June 2012

**Methodology:** Standardized pre-tested questionnaire was used

**Results:** Majority of the cases were in 40-60 years age group and male gender. Hypertension was more common in diabetics. While opposite was true for smoking.

**Conclusion:** Besides diabetes, other major risk factors such as hypertension, sedentary lifestyle and smoking can also independently lead to IHD.

**Key Words:** IHD, Diabetics, Non Diabetics, Smoking, Hypertension

## **1. Introduction**

Ischemic heart disease (IHD) is a syndrome which remains a major cause of death worldwide <sup>[1]</sup>. It includes angina pectoris, myocardial infarction, and sudden cardiac death. As per WHO report, 55/100000 of American die of IHD and 45.3% of all deaths in USA are due to IHD<sup>[2]</sup>. However, in UK 25000 patients suffer from acute MI<sup>[3]</sup>. With an overall mortality three folds greater in diabetics. The major risk factor that predisposes atherosclerosis and resultant IHD have been identified by means of number of prospective studies in well-established population groups like Framingham study and multiple other risk factor on interventional trial<sup>[4]</sup>, i.e. dyslipidemias<sup>[5]</sup>, hypertension<sup>[6]</sup>, cigarette smoking<sup>[7]</sup>, and diabetes<sup>[8]</sup>.

Diabetes is a major public health problem, and leading cause of death among patients with diabetes and cardiovascular diseases, particularly IHD and stroke<sup>[9],[10]</sup>. And if you have diabetes you are at least twice as likely as someone who does not have diabetes to have heart disease or a stroke.

People with diabetes tend to develop cardiovascular disease at an early age than other people. Coronary artery disease accounts for 80% of mortality in diabetics, ischemic heart disease has emerged as leading cause of death in these patients <sup>[11]</sup>. There have been other studies at the related topic but there was a lapse in them that they did not include the other associated risk factors for the development of IHD and their association with diabetes.

Our study is designed to remove such lapses and to find the correlation between diabetes mellitus and IHD and to support the theory that besides diabetes, smoking,

hypertension and sedentary lifestyle are also independent risk factors for the development of IHD.

## 2. Materials and Methods

This descriptive cross sectional survey was conducted in outpatient department of Punjab Institute of Cardiology, Lahore. For this purpose, list of patients was made and out of it 100 patients were randomly selected for observation. Standardized pre-tested questionnaire was used for this purpose. Data was collected in May – June 2012. Computer software was used for tabulation and analysis of the data. Results are presented with frequency and percentage tables.

## 3. Results

**Table 1:** Frequency distribution by age

Age groups(years)	Total	
	Frequency	%age
20-40	03	03
40-50	29	29
50-60	61	61
60-70	07	07
Grand total	100	100

**Table 2:** Frequency distribution by sex

Sex	Total	
	Frequency	%age
Male	58	58
Female	42	42
Grand total	100	100

**Table 3:** Frequency distribution of diabetics and non-diabetics

Status	Total
Diabetics	55
Non-diabetics	45
Grand total	100

	Frequency	%age
Diabetics	55	55
Non-diabetics	45	45
Grand total	100	100

**Table 4:** Frequency distribution of smoking, hypertension and regular exercise

STATUS	RISK FACTORS	FREQUENCY	%age
Diabetics (55)	Smoking	13	23.6
	Hypertension	35	63.6
	Regular exercise	22	40
Non Diabetics (45)	Smoking	14	31.1
	Hypertension	26	57.7
	Regular exercise	11	24.4

## 4. Discussion

Established diabetes is a strong risk factor for ischemic heart disease. It is evident from our study that diabetics are more prone to the development of ischemic heart disease as compared to non-diabetics (Table 3) and amongst them males are more effected (Table 2) since females in child bearing age are spared due to protective effect of hormones. But as the menopause arises they also become significantly prone to the development of ischemic heart disease.

As the age factor is concerned, it is evident that maximum number of people lies between age group 40-60 years of age (Table 1) so here comes the role of loses of postmenopausal protective mechanism and the development of arteriosclerosis with advancing age.

Hypertension is well established major risk factor for CVD. It increases the risk of both IHD and stroke. Hypertension showed significant positive correlation in our study. Hypertension and diabetes co-exist more frequently than would be estimated from their relative prevalence in the general population. It is proved in our study (Table 4) that amongst all the patients taken for study; those who were diabetic more of them were also hypertensive (63.3%) as compared to those who were non diabetics (57.7 %).

Cigarette smoking has been proven as an independent modifiable risk factor for IHD and it was seen in our study (Table 4) that smoking was more prevalent amongst non-diabetics i.e. 31.1 % compared to 23.6 % amongst diabetics.

Prevalence of regular exercise (Table 4) was paradoxically found to be more amongst diabetics, probably due to health education by their doctors as a management step for diabetes.

## 5. Conclusion

Besides diabetes, other major risk factors such as hypertension, sedentary lifestyle and smoking can also independently lead to IHD. Hence, it is suggested that a proper screening method should be adopted in known diabetics to prevent their progression to IHD. Secondly, educate the people about the risk factors like smoking, sedentary lifestyle, and hypertension that may lead to IHD in non-diabetics.

## References

- [1] Harris M, Hadden W.C, Knowler W.C, Bennett P. Prevalence of diabetes and impaired glucose tolerance and plasma glucose levels in population aged 20-74 years. *Diabetes*. 1987;36:523-34.
- [2] WHO MONICA project: myocardial infarction and coronary deaths in WHO-MONICA project: registration procedure evens rates and case fatality rates in 38 populations from 21 countries in four continents. *Circulation* 1994; 90:581.
- [3] Turner R., Gull G, Holman R., U.K prospective diabetes study, 7 to 9 years update of randomized, controlled trial on the effect of improved metabolic control on complications in non-insulin dependent diabetes mellitus. *Am J Med*: 1996:136-45
- [4] Stamler J, Vaccaro O, Neaton J. Diabetes and other risk factors and 12 year CVS mortality for men screened in multiple risk factor intervention trial. *Diabetes Care*: 1993.16.434-44.
- [5] Gordon DJ, Probstfield JL, Castelli W.P et al. High density lipoprotein cholesterol and CVD; four prospective American studies. *Circulation* 1989;79:0-15.
- [6] Pooling project relationship of blood pressure, serum cholesterol, relative weight and ECG abnormalities to incidence of major coronary events. *J Chronic Dis* 1978; 31:201-306.
- [7] Kannel WB, McGee DL. Diabetes and glucose tolerance as risk factors for cardiovascular disease: the Framingham study. *Diabetes Care*. 1979;2:120-26.
- [8] Barreth, Connor E, Cirigliano MH, Khlaumber MR, Holdbrook MJ. Diabetes and hypertension in a community of older adults. *Am J Epidemiol* 1981; 113:276-284
- [9] E. Brun, R.G. Nelson, P.H. Bennett, G. Zoppini, G. Diabetes duration and case specific mortality in Verona diabetes study. *Diabetes Care* 23(2000)1119-23.
- [10] N.A. Ropper, R.W. Bilous. Cause-specific mortality in population
- [11] Chyon DA, Young LH. Diabetes mellitus and CVD. *Nurs Clin North Am* 2006;41:681-9512.

## Authors Profile



**Dr Asim Muntaz Khan: (Corresponding author)**

MBBS (Services Institute of Medical Sciences, Lahore, Pakistan), Session 2006-2011

House Officer (Services Hospital Lahore), 2012-2013



**Dr Waqas Ali:**

MBBS (Services Institute of Medical Sciences, Lahore, Pakistan), Session 2006-2011

House Officer (Services Hospital Lahore), 2012-2013



**Dr Jibran Mohsin:**

MBBS (Services Institute of Medical Sciences, Lahore, Pakistan), Session 2006-2011

Bachelor of Science (University of the Punjab, Lahore, Pakistan) 2011

House Officer (Services Hospital Lahore), 2012-2013