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Research Article

FREQUENCY OF DIABETES, HYPERTENSION AND SILENT MI AMONGST PATIENTS ATTENDING FREE MEDICAL CAMPS¹Dr Fayaz Hussain, ²Dr Syed Zafar Iqbal, ³Dr Syeda Ijlal Zehra Zaidi, ⁴Dr Sadia Islam, ⁵Dr Muhammad Khalid Razaq, ⁶Dr Shazia Sultan.

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Article Received: July 2019**Accepted:** August 2019**Published:** September 2019**Abstract:**

Background The number of hypertension cases are increasing worldwide, it is estimated that 972 million out of 2000 are hypertension patient and it is predicted that it will grow to 1.56 billion by 2025. It is estimated that diabetes prevalence is about 382 million in the year 2012 and is forecasted to reach 592 billion by the end of 2030. Diabetes and hypertension are connected to the high risk of atherosclerotic, cardiovascular and renal disease.

Objectives: Objectives of the study were to assess the frequency of hypertension and diabetes.

Method: It was a cross sectional study. Total patients included in the sample were 604. Sample was taken from free medical camps arranged in Rahim Yar Khan. They were assessed for presence of DM, HTN and MI.

Results In this study there were total 604 cases and out of these 362 (59.9%) were males and 242 (40.1%) were females. Overall, there were 49 (8.1%) cases that had DM and 93 (15.4%) cases that had HTN. Regarding HTN, it was observed in 45 (12.4%) of the cases out of 362 in males and in 55 (22.7%) of the cases out of 242 in females with $p= 0.13$. In terms of DM, it was observed in 29 (8%) cases in males and 20 (8.3%) cases in females out of their respective age groups ($p= 1.0$).

Conclusion: DM and HTN are not uncommon and HTN is more frequently seen in female cases.

Key Words: Diabetes, hypertension

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BACKGROUND:

The number of hypertension cases are increasing worldwide, it is estimated that 972 million out of 2000 are hypertension patient and it is predicted that it will grow to 1.56 billion by 2025. It is estimated that diabetes prevalence is about 382 million in the year 2012 and is forecasted to reach 592 billion by the end of 2030. Diabetes and hypertension are connected to the high risk of atherosclerotic, cardiovascular and renal disease. This relationship between hypertension and diabetes is known as lethal pair to underline increased cardiovascular risk. Hypertension affects approximately 70% of patients with diabetes and affects twice as many people with diabetes compared to people without diabetes. This has caused hypertension and diabetes to increase mainly in industrialized countries. The main reason is the aging of the population, and the incidence of hypertension and type 2 diabetes increases with age. The main reason is the aging of the population, and the incidence of hypertension and type 2 diabetes increases with age. People with high blood pressure are 2.5 times more likely to develop diabetes within five years. The prevalence of cardiovascular risk factors in Hong Kong has shown that only 42% of diabetic patients have normal blood pressure, and 56% of patients with hypertension have normal glucose tolerance. In the United States, approximately 30% of hypertensive patients have type 1 diabetes, and 50% to 80% of patients have type 2 diabetes. Diabetes is an independent risk factor for coronary artery disease, according to the study, the risk of hypertension is significantly increased (1). Hypertension is the most common disease in primary care. It can cause myocardial infarction, kidney failure, stroke, and death if not detected early and not properly treated. Patients need to be cultured that managing blood pressure (BP) can reduce the burden of disease. Clinicians also need to use the best scientific suggestion to guide the managing of high blood pressure.

According to the study, the concomitance of hypertension and diabetes increases risk organ damage and clinical cardiovascular accidents (2).

Diabetes mellitus is deep-rooted risk factor in developing cardiovascular disease. Diabetic and hypertensive patients develop severe clinical and morphologic features of cardiovascular disease as compared to hypertension only (2). The type 2 diabetes is common disease with extensive associated morbidity and mortality. Observational evidences suggest that glycemic level is a risk factor in developing macro vascular disease. Till date

experimental studies have not revealed causal relationship among improved glycemic control and reductions in serious cardiovascular outcomes. Hypertension is commonly diagnosed in patients along with diabetes and vice versa. The risk of atherosclerosis, retinopathy, renal failure and non-traumatic amputations, and cardiovascular diseases is increased in patients having coexistence diabetes and hypertension is mentioned in study of (3).

Hypertensive disease combined with 4.4% of coded deaths for diabetes. Diabetes is associated with 10% of coding with hypertensive disease. 35-75% of diabetic cardiovascular and renal complications are accredited by hypertension. The presence of hypertension causes diabetes and diabetic nephropathy to increase by 7.2 times the mortality rate and 37 times the death rate. Diabetes is a dominant risk factor for the development of coronary artery disease, with a significantly increased risk of hypertension (1).

An enormous number of possible causes were cited due to coexistence. It has been assumed that both diseases share common pathogenic factors. These factors are aging, insulin resistance, obesity and use of thiazide diuretics in patients initially with hypertension and development of nephropathy in people with diabetes, especially type 1. Diabetes may also be connected with secondary systolic hypertension atherosclerosis as per study of (1).

METHOD AND PROCEDURE:

This was a cross sectional study which was carried out during January to December 2018. In which the respondents were selected during free medical camp in Rahim yar khan and about eight hundred patients were checked up and data of 604 patients were actually collected and maintained. The subjects were selected with age more than 18 years irrespective of their gender. They were looked for DM, HTN and MI where DM was labelled as yes where random blood sugar was more than 200 mg/dl, HTN was labelled where Systolic BP was more than 140 mmHg and diastolic more than 90 mmHg and silent MI was labelled where there were q waves in any two consecutive leads. This data was maintained by a computer assistant on spread sheet and later on the same data shifted to SPSS software 18.0 and was analyzed for descriptive statistics. Descriptive statistics showed the percentages, mean and stander deviations. Chi square test was used for data stratification among gender and p value of equal or less than 0.05 was taken as significant.

RESULTS:

In this study there were total 604 cases and out of these 362 (59.9%) were males and 242 (40.1%) were females as in table 1. Overall, there were 49 (8.1%) cases that had DM, 93 (15.4%) cases that had HTN and 04 (0.006%) cases had silent MI which were all females and in females this incidence was 0.01% as shown in table 2. Regarding HTN, it was observed in 45 (12.4%) of the cases out of 362 in males and in 55 (22.7%) of the cases out of 242 in females with $p=0.13$ as in table 3. In terms of DM, it was observed in 29 (8%) cases in males and 20 (8.3%) cases in females out of their respective age groups ($p=1.0$) as in table 4.

Table 1: Gender wise Distribution of Respondents of the Study

| Gender | Number | Percentage |
|--------|--------|------------|
| Male | 362 | 59.9% |
| Female | 242 | 40.1% |
| Total | 604 | 100% |

Table 2: Distribution of HTN and DM

| Variables | Number | Percentage |
|-----------|--------|------------|
| DM | 49 | 8.1% |
| HTN | 93 | 15.4% |
| Silent MI | 04 | 0.006 |
| None | 458 | 75.82% |
| Total | 604 | 100% |

Table 3. Detail of Female and Male Patients with hypertension

| Gender | HTN | | Total | p |
|--------|---------------|----------------|-------|------|
| | Yes | No | | |
| Male | 45 (12.4%) | 317 (87.6%) | 362 | 0.13 |
| Female | 55 (22.7%) | 187 (77.3%) | 242 | |

Table 4. Detail of Female and Male Patients with Diabetes

| Gender | Diabetes Mellitus | | Total | p |
|--------|-------------------|-------------|-------|-----|
| | Yes | No | | |
| Male | 29 (8%) | 333 (92%) | 362 | 1.0 |
| Female | 20 (8.3%) | 222 (91.7%) | 242 | |

DISCUSSION:

Diabetes Mellitus and HTN are one of the important health issues and are largely neglected in the resource limited areas not only in Pakistan but also across the globe and hence need an urgent attention and due to management to decrease the further risk of morbidity

and mortality for which this screening study was planned to see the burden of these disease. (5)

In the present study overall, there were 49 (8.1%) cases that had DM and 93 (15.4%) cases that had HTN. Regarding HTN, it was observed in 45 (12.4%) of the cases out of 362 in males and in 55 (22.7%) of the cases out of 242 in females with $p=0.13$. While in terms of DM, it was observed in 29 (8%) cases in males and 20 (8.3%) cases in females out of their respective age groups ($p=1.0$).

The data was variable in the past regarding the prevalence of DM and HTN both in different areas of the world and varied according to the type of the population studied. According to a study done by Radhakrishnan S et al, they included 525 cases and DM was seen in 28 cases out of which 17 were females and 11 males. Regarding HTN, stage 1 HTN was seen in 102 and stage 2 in 64 cases with female dominance. (6)

The data from the other previous studies revealed mixed results and it was seen that in few of them male dominance was seen and in others its more prevalent in females regarding HTN. (7-9)

In another study from the developing world regarding screening in the rural areas revealed that hypertension was seen in 13 (6%) of the cases and DM was seen in 54 (23%) of the cases which was slightly lower than the present study and can be explained by the factor that they diagnosed the new cases only. (10)

A much higher prevalence of HTN was noted in a study from the periphery of Cameroon and it was seen in 31.1% of their cases revealing the importance of screening especially in the facility lacking areas of the countries where early detection can reduce the risk of further complications and hence decreasing the burden of health-related issues. (11) Similar results were observed by the studies done by Dhitali SM et al and Saito E et al. (12-13)

CONCLUSIONS:

DM and HTN are not uncommon and HTN is more frequently seen in female cases.

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