International Journal of Health Sciences and Research
www.ijhsr.org ISSN: 2249-9571

Original Research Article

Prevalence, Dietary Pattern, Nutrient Intake and Clinical Profile of Adults Aged Between 30-50 Years Attending Diabetic with Hypertensive Patient, Clinic at Allahabad City

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Received: 11/12/2015 *Revised: 19/01/2016* *Accepted: 25/01/2016*

ABSTRACT

Diabetes is a group of metabolic disorders resulting from a defect in insulin secretion, insulin action or both (Drucker, 1999). These defects alter glucose uptake by cells and its use within them. Hypertension results in a thickening of the arterial wall due to a net increase in wall constituents via a coordinated production and removal of smooth muscle and extracellular matrix. With so many possible complications of hypertension with diabetes it is critical for a person with this disease to take active steps in controlling it. Results showed that out of 30 patients, 70% were males. 36.67% subjects had the family history of hypertension and 43.33% subjects had the family history of diabetes. 43.33 % patients have Diabetes Mellitus along with hypertension followed by high cholesterol level (40%). Majority of 43.33 % subjects do sedentary exercise followed by moderate exercise only (16.67%), subjects do heavy exercise. Majority of subjects (70%) have systolic blood pressure > 140mmHg and (56.67%) of subjects have diastolic blood pressure < 90mmHg respectively. Fruits and vegetables consumption should be encouraged and promoted while salt and fat consumption should be discouraged.

Keywords: Diabetes, Counselling Programmes, Hypertension, Dietary Pattern, Food Consumption Frequency.

INTRODUCTION

Diabetes is a group of metabolic disorders resulting from a defect in insulin secretion, insulin action or both (Drucker, 1999). These defects alter glucose uptake by cells and its use within them. Insulin facilitates glucose uptake and use. Glucagon like peptide is a fragment of proglucagon molecule. It exerts strong insulinotropic effects in vivo (Orskov *et al.*, 1987). β - glucans, are frequently present in endosperm cell walls of cereals. Both soluble and insoluble beta glucans are present in cereals (Ahluwalia and Ellish 1985). Diabetes involves an absolute or relative insulin arises when the pancreas fails to produce insulin due to destruction of the pancreatic beta cells usually resulting from an autoimmune disorder or deficiency occurs when insulin requirements are increased results in insulin resistance (Bowman and Russel, 2001).

Hypertension results in a thickening of the arterial wall due to a net increase in wall constituents via a coordinated production and removal of smooth muscle and extracellular matrix. In particular, basic, characteristic features of hypertension are simulated using a constrained mixture model wherein individual constituents can turnover at

different rates and can have different natural configurations. We show, for example, that if there is no turnover of elastin (which approximates responses in maturity), the model vessel is able to reduce an early elevation in wall stress via a thickening of the wall even though the adaptation may be suboptimal. Conversely, if all constituents can turnover completely (which may approximate late development), the model vessel can restore the state of stress and material properties to native values (Gleason R.L. · Humphrey J.D, 2004).

Patient awareness is important in its early stages, treatment of patients during the asymptomatic phase will help the people to identify and avoid risk factors. With so many possible complications of hypertension with diabetes it is critical for a person with this disease to take active steps in controlling it. Most of the studies emphasize the need of formal education regarding diet and lifestyle changes, including regular exercises, stress management and self - monitoring with a home device can be used to control and bring down the blood pressure and diabetes.

RESEARCH METHODOLOGY

Cross-Sectional Study (Hospital Based)

Study Population

The populations of the study were diabetic with hypertensive patients aged 30 - 50 years from Allahabad District, Uttar Pradesh.

Selection of Study Population (Respondents)

Cases of diabetic with hypertension were selected on the basis of blood glucose level and blood pressure screening record at hospital or their current blood glucose level and blood pressure status.

Sample Size and Sampling Technique

30 respondents were selected on the basis of purposive sampling. Since the site of data collection in the study was Swaroop Rani Nehru Hospital, we had to rely on the patients for recruitment, while coming for check-up. The diabetic with hypertensive patients who met the inclusion criteria were approached and asked to participate in the study and those who did not meet the criteria were excluded from the study.

Data Collecting Tool

Structured Questionnaire was used as a tool for data collection. The questionnaire used in this study consisted of the following parts:

I. Socio-demographic
II. Clinical profile and clinical observation
III. Laboratory findings

Data Collecting Procedure

After Ethelind School of Home Science granted approval for the survey, the permissions were sought from Principal, Moti Lal Nehru Medical College, Allahabad. The director of SRN hospital was requested for co-operation and permission.

Data was collected by researcher herself. Since few number of participants had difficulty in reading or writing, the researcher asked them questions and wrote down their responses without any manipulation. In terms of educated persons, they were asked to answer the questions by themselves and then put it into the boxes provided there.

Ethical considerations

- Formal permission was obtained from the Principal, Moti Lal Nehru Medical College, Allahabad.
- After explaining the purpose of the study and about confidentiality, oral consent was obtained from the subjects.
- The subjects were informed that their participation was voluntary and they had freedom to withdraw from the study.
- There were no ethical issues aroused during the study period.

Statistical analysis: The data was subjected to statistical analysis like percentage, frequency, Standard deviation, etc. M. S. Excel and Window 8.1 version.

RESULTS AND DISCUSSION

The data analysis is described as categorizing; ordering; manipulating and summarizing the data to obtain answer to research questions.

Table 1: Demographic profile

Variables		No. of Patients	Percentage %
Age	31-40 Years	18	60
	41- 50 Years	12	40
Sex	Male	21	70
	Female	9	30
Family History of hypertension	Present	11	36.67
	Absent	19	63.33
Personal Habits	Smoking	14	46.67
	Alcoholic	12	40
	Addiction	4	13.33
Family history of diabetes	Present	13	43.33
	Absent	17	56.67
Physical Activity	Never	0	0
	Sedentary	13	43.33
	Moderate	12	40
	Heavy	5	16.67

Age: The minimum age of respondents was 30-50 years and 60 % of participants were aged between 31-40 years, 40 % of participants were aged between 41-50 Years. The finding is consistent with previous research findings. Previous studies have shown there is positive relationship between age and diabetes with hypertension. There is an increase in systolic and diastolic pressure and blood sugar level with age. Although increased blood pressure and sugar level is not a routine part of aging. It tends to rise in elderly people. Aging is an important risk factor of hypertension (Kornitzer *et al.* 1999).

Gender: It shows that the number of men and women involved in the study. Overall there were more males than females comprising 70 % and 30 % respectively. Previous studies have shown that the prevalence of diabetes with hypertension in women is lower than men before the age of 45 years. Men are generally at higher risk than women before menopause (Debra *et al*. 2008).

Personal Habits: Out of 30 patients 46.67 % patients reported to have smoking as one of the habits. Only 40 % subjects reported to be alcoholic. 13.33% of the respondents were found to have addiction habits.

Family History of hypertension: Approximately 36.67 % of respondents were found to have a family history of hypertension. 63.33 % patients have not found with any family history of hypertension.

Family History of diabetes: Approximately 43.33 % of respondents were found to have a family history of diabetes. 56.67 % patients have not found with any family history of diabetes.

Physical Activity: The majority were participants were found to lead sedentary life styles although a very small number was engaged in strenuous or hard physical activities. Overall 43.33 % of participants reported physical activities particularly sedentary life style, whereas only 40 % of participants reported physical activities particularly moderate life style. The 16.67% of participants with their physical activities particularly heavy life style respectively.

Table 2: Clinical Profile

Variables		N0. of Patients	Percentage %
Duration of illness	< 5 years	16	53.33
	5-10 years	8	26.67
	>10 years	6	20
Body Mass Index	Underweight	3	10
	Normal	8	26.67
	Overweight	12	40
	Obese	7	23.33

Duration of Illness: Almost 53.33 % of patients were found to have the diagnosed

diabetic with hypertension for less than 5 years. 26.67 % subjects reported the duration of illness between 5-10 years and 20 % subjects reported the duration more than 10 years.

Anthropometric methods: This table shows that 10 % of patients have underweight, 26.67% of patients have normal weight. 40% and 23.33% of patients have overweight and obese. Result shows that most of the patients were found to lead sedentary life style.

Table3: Systolic Blood Pressure of Patients

Post Prandial level	No. of Patients	Percentage
>140mg/dl	19	63.33%
>180mg/dl	11	36.67%

Systolic Blood Pressure: Almost 30 % of participants were found to have their SBP equals 140mmHg or above and 70 % below 140mmHg. Stratton Irene, reported that the systolic blood pressure of patients approximate 144 mmHg.

Table4: Diastolic Blood Pressure of Patients

DBP	No. of Patients	Percentage
< 90 mmHg	17	56.67%
>=90 mmHg	13	43.33 %

Diastolic Blood Pressure: 56.67 % of participants were found to have their DBP equals 90 mmHg or above and 43.33 % below 90 mmHg.

Table5: High Cholesterol Level of Patients

Variables		No. of patients	Percentage%
High Cholesterol level	Present	12	40
	Absent	18	60

High Cholesterol Level: Overall, 40 % of all the participants had been diagnosed with high cholesterol levels (hypercholesterolemia), but 60 % participants reported a negative history.

Table6: Fasting Blood Sugar Level

Fasting	No. of Patients	Percentage
>70mg/dl	7	23.33%
>110mg/dl	23	76.67%

Fasting Blood Sugar Level: 23.33 % of participants were found to have their fasting blood sugar level less than 70 mg/dl (Hypoglycaemia) and 76.67% of participant were found to have their fasting blood sugar level above 110mg/dl.

Table 7: Post Prandial Blood Sugar Level

SBP	No. of Patients	Percentage
< 140 mmHg	9	30 %
>=140 mmHg	21	70%

Postprandial Blood Sugar Level: 63.33 % of participants were found to have their postprandial blood sugar level more than 140 mg/dl and 36.67% of participants were found to have their postprandial blood sugar level above 180 mg/dl.

CONCLUSION

Type 2 diabetes and hypertension trend to occur in same patients. Patients with both disorders often have other abnormalities, including high plasma insulin concentrations, high serum triglyceride concentrations, lower serum HDL concentrations and high body mass indices and waist to hip rations. These conditions are a dangerous health condition that can be managed through personal behaviours such as eating a healthy diet and engaging in regular physical activity, as well as taking medications that lower blood pressure and blood sugar level. The present study was to assess the dietary habits and identification of selected risk factors of diabetes with hypertension among patients in Allahabad district. It can be therefore concluded that lifestyle related risk factors such as excess body weight; low levels of physical activity and consumption of unhealthy diets were evident in diabetic with hypertensive in SRN Hospital. A high percentage of participants were found to lead sedentary and physically inactive lifestyles and consume fat rich diets. Health education and counselling programmes for both patients and the public should be developed in order to increases awareness regarding causes, consequences, prevention and control of diabetes with hypertension.

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How to cite this article: Verma R, Paul V. Prevalence, dietary pattern, nutrient intake and clinical profile of adults aged between 30-50years attending diabetic with hypertensive patient, clinic at Allahabad city. Int J Health Sci Res. 2016; 6(2):323-327.

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