



# Recent Trends of Diagnostic Guidelines and Non-Clinical Management with Assessment of the Role of Non-Clinical Management on Diabetes Hypertension Control among Urban Patients

Verma R.K.<sup>1</sup>, Kaur Bhagyapreet<sup>2</sup> and Mishra Ravi<sup>1</sup>

<sup>1</sup>Deptt. of Medicine, K.G's Medical University, UP, INDIA

<sup>2</sup>Lucknow University, LKO, INDIA

Available online at: [www.isca.in](http://www.isca.in), [www.isca.me](http://www.isca.me)

Received 17<sup>th</sup> November 2014, revised 27<sup>th</sup> January 2015, accepted 27<sup>th</sup> February 2015

## Abstract

*The comorbid conditions of diabetes with hypertension should be given special attention, especially in the Indian Scenario, as prevalence risen over the past few decades. Recently JNC-8 recommended the goal should be SBP<140 mm Hg and DBP <90 mm Hg for adult age group that should be attained either by life style intervention or with pharmacoecological treatment. The most recent glycemc goal recommended by the American Diabetes Association, selected on the basis of practically and the projected reduction in complications over times, is in general, an HbA<sup>1</sup>C level of 7%. The general consensus is that an HbA<sup>1</sup>C level of ≥ 7% should serve as a call to action to initiate or change therapy with the goal of achieving an HbA<sup>1</sup>C level of <7% that to be needed to assess the role of non-clinical management of diabetes hypertension patients and this paper was an effort on aforesaid issue. The validation cohort n=100 for intervention group and 10 for control group. The main findings of the paper; it was observed that improved in awareness, attitude and practices for good control 86 percent subjects for diabetes hypertension. On the other hand, after intervention, the changes in their control was found among 58% patients. The major changes observed in salt intake, exercising, yoga, worship, not smoking, non-alcoholing. The dietary improvement in terms knowledge and practices among 52% subjects. The calculated value of chi-square was found much more higher (19.0) as compared to table value (3.841) at one degree of freedom and five percent significant level. Therefore null hypothesis rejected and alternate hypothesis accepted (i.e. non clinical management was primary treatment technique for good control of diabetes-hypertension).*

**Keywords:** Diabetes, hypertension, JNC-8.

## Introduction

Non-insulin dependent diabetes mellitus is now present in epidemic proportions. It is estimated that at the time of diagnosis of diabetes, hypertension is present in 50% of the patients. Hypertension among diabetic patients accelerate progression to renal and cardio-vascular diseases. This has spurred intense interest in early and aggressive management of hypertension in this population. It has been consistently observed that adequate hypertension management is seldom achieved.

Modifying the cardiovascular risk factors has become a major goal in the management of diabetes. Hypertension contributes substantially to the high CVD morbidity and mortality in patients who have diabetes. Early aggressive blood pressure management has been shown to decrease CVD mortality in diabetic patients who combined with optimization of the other components of metabolic syndrome and insulin resistance such as dyslipidemia, obesity and hyperglycemia.

The risk for macrovascular and microvascular complications greatly increases in presence of the co-existent hypertension and diabetes. Most of the patients with diabetes and hypertension

usually die from a cardiovascular cause. About 75 percent of adults with diabetes take anti-hypertensive drugs or have a blood pressure ≥ 130/80 mm Hg, the currently accepted treatment threshold for hypertension in people with diabetes. This is in contrast to the prevalence of hypertension in the general population that is about 30 percent. The prevalence increases to 80 percent in the presence of microalbuminuria and to > 90 percent with macroalbuminuria<sup>1</sup>.

The comorbid condition of diabetes with hypertension should be given special attention, especially in the Indian Scenario, as prevalence risen over the past few decades. This may be attributed changing life style and other factors and trends of the people.

There exists a significant difference in parameters found to change between diabetes hypertension and normotensive patients with respect to their metabolism and associated pathways included; increased parameters; SBP, DBP, nitra-erythrocyte sodium, serum glucose, serum urea, serum creatinine, serum osmolality and decreased; Na<sup>+</sup>-k<sup>+</sup>-ATPase activity, serum sodium, serum Potassium, serum magnesium and serum calcium<sup>2</sup>.

Diabetic adults have 2 to 4 times higher death rates from heart disease than adults without diabetes<sup>3</sup>. The JNC-7 report issued lower target BP goals for patients with diabetes (target goal of BP <130/80 mm Hg.)

Diabetic hypertensive are frequently not treated to their goal blood pressure levels. Emphasis should be on treatment of diabetic hypertensive patients to their goal blood pressure and controlling other major cardiovascular disease risk factors, such as smoking, dyslipidemia, overweight or obesity that show significant prevalence among those high risk patients.

A study documented the following results ;Overweight, obese or morbidly obese – 87.6% , Patients with dyslipidemia – 52% , BP goal of <130/85 mm Hg achieved in 19.7% , BP goal of <130/80 mm Hg achieved in 13.8%<sup>3</sup>.

The most recent glycemic goal recommended by the American Diabetes Association, selected on the basis of practically and the projected reduction in complications over times, is in general, an HbA<sup>1</sup>C level of 7%. The general consensus is that an HbA<sup>1</sup>C level of  $\geq 7\%$  should serve as a call to action to initiate or change therapy with the goal of achieving an HbA<sup>1</sup>C level of <7%<sup>4</sup>.

The JNC-8 (2014) recommended the goal should be SBP<140 mm Hg and DBP<90 mm Hg for adults age group that should be attain either by life style intervention or with pharmacological treatment with life style intervention. There is insufficient evidence in hypertensive persons younger than 60 years for a systolic goal, or in those younger than 30 years for a diastolic goal, so the panel recommended a BP of less than 140/90 mm Hg for those groups based on expert opinion. The same thresholds and goals are recommended for hypertensive adults with diabetes or non-diabetic.

It is important to note that this evidence based guidelines has not redefined high Blood Pressure, and the panel believes that the 140/90 mm Hg definition from JNC-7 remains reasonable. The relationship between naturally occurring blood pressure and risk is linear down to very low blood pressure; but the benefit of treating to these lower levels with antihypertensive drugs is not established. For all persons with hypertension, the potential benefits of a healthy diet, weight control, and regular exercise can't be over emphasized. These life style treatments have the potential to improve blood pressure control and even reduce modification needs. Although the author of this hypertension guideline did not conduct and evidence review of life style treatments in patients taking and not taking antihypertensive medications, we support the recommendation of the 2013 life style work group<sup>5</sup>.

The recommendations from this evidence-based guideline from panel members appointed to the Eight Joint National Committee JNC-8 after other clinician an analysis of what is known and not known about blood pressure treatment thresholds, goals and drug

treatment strategies to achieve those goals based on evidence from RCTs. However, these recommendations are not a substitute for clinical judgement, and decisions about care must carefully consider and incorporate the clinical characteristics and circumstance of each individual patient. We hope that the algorithms will facilitate implementation and be useful to busy clinicians. The strong evidence base of this report should inform quality measures for the treatment of patients with hypertension<sup>6</sup>.

It was also recommended that polymial therapy strategy to reduce cardiovascular disease and their risk. Polymeal is composed of these ingredients.

Wine 150 ml/day , Fish 100 gm 4 times per week , Dark Chocolate 100 gm/day , Fruits and Vegetables 400 gm/day , Garlic 2.7 gm/day, Almonds 68gm/day<sup>7</sup>.

Thus recent trend of diagnosis for diabetes hypertension should be :Diabetes – HbA<sup>1</sup>C – less than 7% and blood pressure – 140/90 mm Hg.The recommendation of life style treatment are still non-evidence base in JNC-8 review. Therefore the non-clinical management of diabetes-hypertension should be needed to assess the role for the control among patients.

**Aims and Objectives:** The main objective of the paper to assess the role of non-clinical management of diabetes-hypertension among urban population.

**Hypothesis: Null:** Nonclinical Management was not primary treatment technique for good control diabetes hypertension.

**Alternate:** Non-Clinical Management was primary treatment technique for good control diabetes hypertension.

## Methodology

**Study Area:** Patients registered for treatment in different private hospital/Nursing homes in Barabanki city.

**Sample Size:** A hundred patients of diabetes hypertension for intervention group purposively selected and ten for control group.

**Tools:** An interview schedule method was used to record opinion and follow up performance of patients of diabetic hypertension and a interventional guideline was given with proper counselling of the pts as table 1.

**Parameters:** Blood Pressure, HbA<sup>1</sup>C, RDA, RDI etc.

**Research Design:** An exploratory cum explanatory research design was used.

**Analysis of Data:** The collected data were tabulated and analyzed in accordance with statistical and scientific method.

**Table-1**  
**Intervention Guideline**

Energy	For underweight 35 kCal/kg, Healthy – 30 kCal/kg , Overweight/Obese – 25 kCal/kg
Carbohydrate	55%
Protein	15-20%
Fat	30% , Saturated Fat 10% MUFA and PUFA 20 % ( Prefer Pure Mustard/Rice Bran oil)
Cholestrol	<300 mg/day
Almonds/Walnuts 10-14 nos.	
Garlic	5 gm per day
Sodium Chloride	5 gm per day
Fruits	200 gm preferably citrus fruits
Milk	400 ml per day
Yogurt	200 gms.
Exercise/Yoga/Worship	45 minutes to one hour
Sf Habitual Redwine	45 ml/day
Meat/Poultry	60-90 gm if non-vegetarian
Stress Management	30-40 minute

Diet should be preferably based on green vegetable with low salt and fruits.

## Conclusion

Age and sex-wise distribution of subjects; in the age group 30-40 years; 26% 40-50 yrs; 24,50-60 yrs; 28,60-60+ years; 22 and sex wise 48 male and 52 female patients. Academic status of subject illiterate – 12%, upto high school 21%, intermediate; 23%, Graduates; 26 %, post-graduate; 15% and any other (including technical education- 3%). Family occupation; 26% former, 36% businessman, 15% Government servant; 16% private servant and rest 7 percent contractor and other works. According to earning; 11% of income group below Rs. 15,000.00 per month, 19% Rs. 15000-25000, 23% 25000-30000, 18% Rs. 30,000-35000, 10% each Rs. 35000-40000, and Rs. 40000-45000 and rest 9% income group of Rs. 45000-50,000 or more. Status of diabetes-hypertension were found; all the subjects were suffering with diabetes and hypertension both in intervention group as well as control group. The under marginal control patients were 36 percent. On the other hand rest 62% were uncontrolled either diabetes(HbA<sup>1</sup>C more than 7%) and blood pressure (more than 140/90 either systolic and diastolic or both) in intervention group.

In control group all the patients were uncontrolled diabetes as well as hypertension. Before intervention regarding nutritional intake it was found that only 12% have knowledge and awareness for dietary guideline as counselling by doctors of the hospital or nursing homes. But regarding the intake of diet according to the requirement of RDA and RDA not a single patients showing the positive awareness in both intervention and control groups. It was observed that improved in awareness, attitude and practices for good control among 86 percent subjects for diabetes hypertension. On the other hand after intervention the changes in their control was found among 58% patients. The major changes were observed in salt intake, exercising, yoga, worship, not smoking, non-alcoholing. The dietary intake was improvement in terms of knowledge and practices among 52 percent subjects only two patients of control group were found to improved in their

good control during study. The calculated value of chi-square was found much more higher (19.0) as compared to table value (3.841) at one degree of freedom and five percent significant level. Therefore, null hypothesis rejected and alternate hypothesis i.e. non-clinical management was primary treatment technique for good control diabetes-hypertension, accepted.

## References

1. Chobanian A.V., Bakns G.L. and Black H.R. et.al., Seventh report of the Joint National Committee on Prevention, detection, evaluation and treatment of high blood pressure, *hypertension*, **42**, 1206-1252 (2003)
2. Shahid S.M., Jawed M. and Mahboob T., Ionic and Allied Variations in Normotensive and Hypertensive Diabetic Patients, *JPMA*, **55(4)**, 153-8 (2005)
3. Godley P.J. Maue S.K. and Farrelly W.E. et.al., the Need for Improved Medical management of Patients with concomitant hypertension and Type II Diabetes Mellitus, *Am J Mang Case*, **11**, 206-210 (2005)
4. American Diabetes Association, Standards of Medical Care in Diabetes, *Diabetes Case*, **32**, 513-561 (2009)
5. Eckel R.J., Jakicic J.M. and Ard J.D. et al AHA/ACC Guideline on lifestyle management to reduce cardiovascular risk; a report of the American College of Cardiology/American Heart Association task force on practice guidelines, *circulation*, 2013 doi; 10/1161/01, Cir. 000043740, 48606, dl. (2014)
6. American Medical Association, *JAMA*, doi; 10.1001/jama 2013.284427 (2014)
7. Kaplan M. Normen and Joseph T. Flynn M.D., *Kaplan's Clinical Hypertension*, 192 (2008)