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Research Article

**ANALYSIS OF INCIDENCE OF CVD IN YOUNG  
HYPERTENSIVE MALES IN PAKISTANI POPULATION**<sup>1</sup>Dr.Sair Ahmad Tabraiz, <sup>2</sup>Dr Sadia Rauf, <sup>3</sup>Dr Sidra Iqbal<sup>1</sup>Health department, Punjab.

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**Abstract:**

**Introduction:** Hypertension is a modifiable and major risk factor for coronary artery disease, heart failure, cerebrovascular disease and chronic renal failure.

**Objectives of the study:** The main objective of the study is to analyse the incidence of CVD in young hypertensive males in Pakistani population.

**Methodology of the study:** This cross sectional study was conducted in Health department Punjab during July 2018 to February 2019. The data was collected from 100 male hypertensive patients. The age range was 18 to 30 years. A questionnaire was designed to characterize both patients and control subjects.

**Results:** The data was collected from 100 male hypertensive patients. The patient's group had significantly higher BMI, SBP, DBP and lipid profile levels as compared to controls ( $P < 0.05$ ). The BMI was significantly more in the males whereas, other risk factors like TC, TG and vLDL-C were significantly increased in female group. Blood pressure, LDL-C, HDL-C and TC: HDL-C showed insignificant differences between the study groups.

**Conclusion:** It is concluded that hypertension and dyslipidemia are the most prominent of the risk factors. Further research is required to determine the cause of this high burden of CVD in male so that appropriate measures can be undertaken to prevent significant morbidity and mortality.

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**INTRODUCTION:**

Hypertension is a modifiable and major risk factor for coronary artery disease, heart failure, cerebrovascular disease and chronic renal failure. It is also recognized as a global chronic, non-communicable disease and a “silent killer” due to its high mortality rates and lack of early symptoms. One-quarter of the world’s adult population is hypertensive and it is estimated that by 2025 this figure is likely to increase to 29% [1]. The high prevalence of hypertension in both developed and developing countries makes it a significant factor for mortality and morbidity. Unfortunately, the prevalence of hypertension is growing rapidly in developing countries which are undergoing epidemiological transitions, economic improvement, urbanization and longer life expectancy [2]. Adequate management of hypertension can effectively reduce the risks of stroke, myocardial infarction, chronic kidney disease and heart failure.

The cardiovascular disease (CVD) is consistently budding as the most prevalent cause of mortality worldwide [3]. The epidemiological transition in the 20th century has placed CVD as the principal cause of global disability. According to the global health projections, it is going to remain the foremost cause of mortality in 2030 [4]. CVD and its atherothrombotic complications develop as a consequence of life style, environmental factors and genetic susceptibility.

Risk factors for CVD have been characterized as conventional or classical and novel. The role of these risk factors is still primary in socio-deprived countries like Pakistan. The influence of an individual risk factor on the CVD varies greatly but the presence of numerous risk factors synergistically works and ultimately affects the CVD outcome [5]. Most of the risk assessment methods used currently have been derived from studies on the developed countries, however, in low and middle income populations no algorithm has been developed yet. Risk estimation score based on the Framingham study is the most commonly used method but it has led to the over or under estimation of the risk factors. Zhu et al. have developed a synthetic predictor from 16 biomarkers that will provide assistance in the CVD risk prediction by simply using the data from routine health check-up [6]. The risk scoring method for the South Asians must include all the specific variables involving the accurate estimation of the risk factors in South Asia. Given the

complex population structure of the region these include factors involving population dynamics, cultural diversity, comorbidities, socioeconomic profiles, linguistics and lifestyle [7].

**Objectives of the study:**

The main objective of the study is to analyse the incidence of CVD in young hypertensive males in Pakistani population.

**METHODOLOGY OF THE STUDY:**

This cross sectional study was conducted in Health department Punjab during July 2018 to February 2019. The data was collected from 100 male hypertensive patients. The age range was 18 to 30 years. A questionnaire was designed to characterize both patients and control subjects. Questionnaire included personal information (name, sex, age, etc.); risk factor information (smoking, etc.); record of physical measures (weight, height, blood pressure, etc.) and medical history (disease profile and clinical symptoms). Patients with documented history of coronary artery disease (CAD) were included. Diagnostic tests for CVD included electrocardiography (ECG), chest X-ray, echocardiography and angiography. Blood samples were collected from study participants for the determination of total cholesterol (TC), triglycerides (TG), and high-density lipoprotein cholesterol (HDL-C). These blood samples were transferred into sterile plain serum tubes and allowed to clot at room temperature for one hour.

**Statistical analysis:**

All the statistical analysis was performed using IBM SPSS Version 20.0. Clinical and biochemical variables were expressed as mean  $\pm$  SD and evaluated by student’s t test.

**RESULTS:**

The data was collected from 100 male hypertensive patients. The patient’s group had significantly higher BMI, SBP, DBP and lipid profile levels as compared to controls ( $P < 0.05$ ). The BMI was significantly more in the males whereas, other risk factors like TC, TG and vLDL-C were significantly increased in female group. Blood pressure, LDL-C, HDL-C and TC: HDL-C showed insignificant differences between the study groups.

Table 01: Clinical and biochemical characteristics of male and female subjects in the overall study population.

Characteristics	Male	Female	P value <sup>a</sup>
Age (years)	53.38 ± 11.15	53.61 ± 10.33	0.68
BMI (Kg/m <sup>2</sup> )	25.17 ± 3.49	24.79 ± 3.82	0.04*
Systolic BP (mm Hg)	128.48 ± 20.46	128.40 ± 22.20	0.93
Diastolic BP (mm Hg)	84.62 ± 10.79	84.60 ± 11.70	0.96
TC (mg/dL)	160.26 ± 40.37	165.20 ± 39.72	0.01*
TG (mg/dL)	141.21 ± 65.77	148.72 ± 60.31	0.02*
LDL-C (mg/dL)	92.42 ± 31.35	92.63 ± 34.48	0.9
HDL-C (mg/dL)	37.33 ± 12.62	38.39 ± 11.75	0.09
vLDL-C (mg/dL)	28.24 ± 13.15	29.74 ± 12.06	0.02*
TC: HDL-C	4.60 ± 1.59	4.5 ± 1.64	0.41

### DISCUSSION:

Although hypertension has been recognized as a major risk factor for cardiovascular morbidity and mortality worldwide, there is a lack of nationwide prevalence data in most of the developing countries [8]. Such information is needed in order to determine the economic burden of hypertension, as well as to optimize health resources allocation towards improvement for its detection, treatment and control. In Pakistan, many population-based surveys, representative of cities and of one province, have been conducted in the past few decades. However, there are no estimates of the prevalence of hypertension for the whole country or of trends in the past decades. The National Health Survey of Pakistan (NHSP) estimated that nearly 18.9% of the Pakistan people aged 15 years and older were hypertensives [9].

Pakistan has a high rate of urbanization, where individuals consume a diet high in salt, calories, saturated fat and low in fruits and vegetables. Several studies hypothesized that these changes to contribute to a higher prevalence of hypertension in urban than rural populations. Pakistan needs to improve strategies for the prevention of hypertension which needs a sensible plan of action for prevention and improvement of current policies against hypertension. Although we found many small to intermediate-scale studies from around the country that estimated the prevalence of hypertension, there is no nationwide study on the prevalence of hypertension; the latest nationwide investigation is now more than 20 years old [10].

Advancing age has been associated with the increased prevalence of CVD in many countries [11]. In the United States, approximately 40% deaths in the population aged ≥65 years are due to atherosclerosis, stroke, heart failure and hypertension. Although the formation of plaque is partly influenced by the chronological age of the individual, but the

cardiovascular age is difficult to determine. The primary reason behind this is the influence of various CVD risk factors on the plaque formation at different points of life [12].

### CONCLUSION:

It is concluded that hypertension and dyslipidemia are the most prominent of the risk factors. Further research is required to determine the cause of this high burden of CVD in male so that appropriate measures can be undertaken to prevent significant morbidity and mortality.

### REFERENCES:

1. Gradman AH, Alfayoumi F. From left ventricular hypertrophy to congestive heart failure: management of hypertensive heart disease. *Prog Cardiovasc Dis.* 2006;48(5):326–341.
2. Mittal BV, Singh AK. Hypertension in the developing world: challenges and opportunities. *Am J Kidney Dis.* 2010;55(3):590–598.
3. NHSP. Pakistan medical Research Council, Pakistan National Health Survey.1990-1994. Pakistan Medical Research Council publication ISBN 969-499-000. Islamabad, Pakistan 1990–1994.
4. Jafar TH, Levey AS, Jafary FH, et al. Ethnic subgroup differences in hypertension in Pakistan. *J Hypertens.* 2003;21(5):905–912.
5. Tareen MF, Shafique K, Mirza SS, et al. Location of residence or social class, which is the stronger determinant associated with cardiovascular risk factors among Pakistani population? A cross sectional study. *Rural Remote Health.* 2011;11(3):1700.
6. AA H, RH M. Applying burden of disease methods in developing countries: a case study from Pakistan. *Am J Public Health.* 2000;90:1235–1212.

7. Moher D, Liberati A, Tetzlaff J, et al. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *Int J Surg.* 2010;8(5):336–341.
8. Cuddy ML. Treatment of hypertension: guidelines from JNC 7 (the seventh report of the joint National Committee on prevention, detection, evaluation, and treatment of high blood pressure 1) *J Pract Nurs.* 2005;55(4):17–21.
9. Mittlbock M, Heinzl H. A simulation study comparing properties of heterogeneity measures in meta-analyses. *Stat Med.* 2006;25(24):4321–4333.
10. Akatsu H, Aslam A. Prevalence of hypertension and obesity among women over age 25 in a low income area in Karachi, Pakistan. *J Pak Med Assoc.* 1996;46(9):191–193.
11. Shah SM, Luby S, Rahbar M, et al. Hypertension and its determinants among adults in high mountain villages of the northern areas of Pakistan. *J Hum Hypertens.* 2001;15(2):107–112.
12. Rafique G, Khuwaja AK. Diabetes and Hypertension: public awareness and lifestyle - findings of a health mela. *J Coll Physicians Surg Pak.* 2003;13(12):679–683.