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ANALYSIS OF BURDEN OF HIGH BLOOD PRESSURE AND ITS IMPACT ON HEART STROKE AMONG LOCAL POPULATION OF PAKISTAN

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Abstract:

Introduction: *High blood pressure (HBP) is a leading major risk factor for chronic diseases and deaths. The prevalence of patients with high blood pressure (HT) had reached from 600 million in 1980 to one billion in 2008.* ***Objectives of the study:*** *The main objective of the study is to find the relationship of high blood pressure and heart stroke among local population of Pakistan.* ***Methodology of the study:*** *This study was conducted at hospitals of Sargodha and Siddiqui Sadiq Memorial Trust Hospital in 2018. This study was conducted according to the rules and regulations of ethical committee of hospital. This research will help towards next findings of effect of blood pressure in high blood pressure and cardiovascular diseases.* ***Results:*** *The data shows that there is a significant relationship between high blood pressure and CVD. There is also some positive relationship between socio-economic status and high blood pressure with respect to CVD.* ***Conclusion:*** *In conclusion, Increase in number of deaths due to cardiovascular diseases in recent years diverted researchers' attention to prevention and controlling of HBP which is a leading cause of cardiovascular diseases*

Key words: *High blood pressure, CVD, Disease, Blood Pressure*

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INTRODUCTION:

High blood pressure (HBP) is a leading major risk factor for chronic diseases and deaths. The prevalence of patients with high blood pressure (HT) had reached from 600 million in 1980 to one billion in 2008 [1]. The prevalence of HBP was approximately 40% among adults of 25 years and above in 2008. Approximately 7.5 million people (12.8% of all-cause deaths) die every year due to HBP. It is estimated that HT is responsible for 45% of deaths due to heart diseases and 51% of deaths due to stroke. HBP consists of 3.7% of Disability Adjusted Life Years [1]. Even prehigh blood pressure (PreHT) increases mortality risk due to cardiovascular and stroke-related diseases.

High blood pressure is a significant public health problem, with a worldwide prevalence of 40.8% and a control rate of 32.3. High blood pressure is a noteworthy hazard factor for various genuine health conditions, including cardiovascular ailment, cerebrovascular malady, and constant kidney illness [1]. Worldwide, 9.4 million passing are credited to difficulties from high blood pressure, including 45% of all passing because of coronary vein illness and 51% of all passing because of stroke [2]. These relations are steady in the two people, in youthful, moderately aged, and more seasoned subjects, among different racial and ethnic gatherings, and inside and between nations. In spite of the fact that there is a continuum of cardiovascular hazard crosswise over levels of circulatory strain, the characterization of grown-ups as indicated by pulse gives a system to differentiating levels of hazard related with different circulatory strain classes and for characterizing treatment edges and helpful objectives [3].

Elevated blood pressure (BP) is a causal risk factor for cardiovascular disease (CVD). In addition, randomized clinical trials among people with high blood pressure have illustrated, in total, a decrease in CVD occasions by 20%, coronary illness (CHD) by 17%, stroke by 27%, and heart disappointment by 28% for each 10 mm Hg systolic BP (SBP) bringing down with medicinal treatment. In this manner, counteractive action, location, treatment, and control of lifted BP, and its clinical connect high blood pressure, is a critical general health need and an essential focus for CVD aversion [8].

Objectives of the study

The main objective of the study is to find the relationship of high blood pressure and heart stroke among local population of Pakistan.

METHODOLOGY OF THE STUDY:

This study was conducted at hospitals of Sargodha and Siddiqui Sadiq Memorial Trust Hospital in 2018. This study was conducted according to the rules and regulations of ethical committee of hospital. This research will help towards next findings of effect of blood pressure in high blood pressure and cardiovascular diseases. The data was collected from 100 patients which was suffering from high blood pressure and any kind of heart issue. We collect the data in two sections, as first of all we collect some demographic information regarding age, sex, socio-economic status and history of blood pressure. Then in second part we collect data regarding high blood pressure and heart issues. For this purpose we prepare a questionnaire and fill that from patients.

Statistical analysis

Student's t-test was performed to evaluate the differences in roughness between group P and S. Two-way ANOVA was performed to study the contributions. A chi-square test was used to examine the difference in the distribution of the fracture modes (SPSS 19.0 for Windows, SPSS Inc., USA).

RESULTS:

The data shows that there is a significant relationship between high blood pressure and CVD. There is also some positive relationship between socio-economic status and high blood pressure with respect to CVD. Table 01 shows the values of of use of drug and other factors.

Table 01: Statistical analysis values of Control group and diseased group

Characteristics	Current blood pressure level			
	Normal	PreHT	HT	Total
HT medication	**n (%)[a]**	**n (%)[a]**	**n (%)[a]**	**n (%) [b]**
Using regular	94 (22.9)	188 (45.9)	128 (31.2)	410 (84.5)
Using irregular	11 (14.7)	36 (48.0)	28 (37.3)	75 (15.5)
HT training	$X^2 = 2.80$ P = 0.247			
Not received	73 (23.4)	140 (44.9)	99 (31.7)	312 (64.3)
Received	32 (18.5)	84 (48.6)	57 (32.9)	173 (35.7)
Alternative or complementary medicine	$X^2 = 1.61$ P = 0.447			
Not admitted	65 (22.4)	126 (43.4)	99 (34.1)	290 (59.8)
Admitted	40 (20.5)	98 (50.3)	57 (29.2)	195 (40.2)
Exercise level	$X^2 = 2.24$ P = 0.327			
Not exercising	52 (20.6)	116 (46.0)	84 (33.3)	252 (52.0)
Inadequate	17 (21.0)	40 (49.4)	24 (29.6)	81 (16.7)
Adequate	36 (23.7)	68 (44.7)	48 (31.6)	152 (31.3)
Fruit and vegetable consumption	$X^2 = 0.96$ P = 0.916			
Not eat every day	23 (20.4)	51 (45.1)	39 (34.5)	113 (23.3)
One meal per day	19 (18.1)	55 (52.4)	31 (29.5)	105 (21.6)
Two meals per day	17 (18.9)	35 (38.9)	38 (42.2)	90 (18.6)
≥ 3 meals per day	46 (26.0)	83 (46.9)	48 (27.1)	177 (36.5)
Salt consumption habits	$X^2 = 9.17$ P = 0.164			
Normal/more salty	47 (24.2)	84 (43.3)	63 (32.5)	194 (40.0)
Less salty	33 (19.8)	81 (48.5)	53 (31.7)	167 (34.4)
Salt less	25 (20.2)	59 (47.6)	40 (32.3)	124 (25.6)
How to continue BP	$X_2 = 1.61$ p = 0.807			
Normal	84 (25.8)	163 (50.0)	79 (24.2)	326 (67.2)
High	11 (8.7)	43 (34.1)	72 (57.1)	126 (26.0)
Unstable	10 (30.3)	18 (54.5)	5 (15.2)	33 (6.8)
HT duration	$X_2 = 52.69$ P < 0.001			
< 5 years	33 (21.0)	69 (43.9)	55 (35.0)	157 (32.4)
5–9 years	38 (31.7)	47 (39.2)	35 (29.2)	120 (24.7)
10–14 years	20 (20.4)	46 (46.9)	32 (32.7)	98 (20.2)
≥ 15 years	14 (12.7)	62 (56.4)	34 (30.9)	110 (22.7)
	$X_2 = 14.43$ p = 0.025			
Total	105 (21.6)	224 (46.2)	156 (32.2)	485 (100.0)

DISCUSSION:

There are some limitations to our study. Firstly, the study population consisted of residents in Pakistan. Secondly, the study enrolled only subjects from primary health centers, thus the data in hand can't reflect hypertensive subjects applied to secondary or tertiary health centers. Thirdly, this is a cross-sectional study based on claims of subjects, thus the answers of subjects may be biased [8].

Our approach to understand disease development in early life, identify key pathways of interest in predisposition to high blood pressure and develop specific preventive approaches has been to use multi-modality imaging to capture information on cardiovascular structure and function 'from heart to capillary [9]. With this approach it becomes possible to model the interrelationship between features of the cardiovascular system and, with longitudinal data,

study the progression of disease across vessel and heart. By extending the data collection to other organs such as brain and liver, a holistic view of disease development can be captured [10].

High blood pressure was the leading risk factor for the overall global burden of disease in 2010. The recent decrease in cardiovascular mortality in high-income countries has been associated with a rise in the numbers of patients living with cardiovascular disease, and the wider use of preventive drugs. Thus, an up-to-date understanding of the associations of blood pressure with different non-fatal and fatal cardiovascular disease outcomes would help to refine strategies for primary prevention and inform the design of future clinical trials [11-13].

Importantly, no current estimates are available for the lifetime incidence and years of life lost associated with high blood pressure attributable to specific cardiovascular diseases. Although in previous studies investigators have estimated the associations of cardiovascular disease risk factors with lifetime risks [3] or cardiovascular disease-free years of life lost, their focus was on total cardiovascular disease, with only one study so far to have analyzed the incidence of specific cardiovascular diseases in a competing risks context [14].

The National Health Survey of Pakistan estimated that high blood pressure affects 18% of adults and 33% of adults above 45 years old. In another report, it was shown that 18% of people in Pakistan suffer from high blood pressure with every third person over the age of 40 becoming increasingly vulnerable to a wide range of diseases. It was also mentioned that only 50% of the people with high blood pressure were diagnosed and that only half of those diagnosed were ever treated. Thus, only 12.5% of high blood pressure cases were adequately controlled. Some remote areas like Balochistan, there is a paucity of data but the control rate is likely to get even worse [15].

CONCLUSION:

In conclusion, Increase in number of deaths due to cardiovascular diseases in recent years diverted researchers' attention to prevention and controlling of HBP which is a leading cause of cardiovascular diseases

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