



CODEN [USA]: IAJ PBB

ISSN: 2349-7750

**INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.1464631>Available online at: <http://www.iajps.com>

Research Article

**THE PREVALENCE AND INTENSITY OF ABNORMAL HIGH
BLOOD PRESSURE IN PATIENTS NECESSITATING
CONVENTIONAL SURGERY IN THE PREOPERATIVE
PERIOD**¹Dr. Mohsin Jamil, ²Dr Bilal Asif, ³Dr. Kanwal Jamil¹DHQ Hospital Chakwal²Bahria International Hospital Rawalpindi³Banzir Bhuto Hospital**Abstract:**

Objective: The purpose of current research study is to gather knowledge about severity and prevalence of high blood pressure in the preoperative period among those patients who need to have surgery.

Study design: Cross-Sectional Observational Study.

Place and Duration: Carried out the present research study in the total time duration of 12 months starting from March 2017 to February 2018, in the surgery department of services hospital, Lahore.

Material and Methods: Designed the selection criteria on the bases of hypertension patients. Selected 638 patients of high blood pressure who were requiring surgery. Got an informed written consent from the patients and NOC from ethical committee of hospital. Included all those male and female patients who were in between the age of 20 years to 83 years. Collected the history of hypertension from all patients participating in the study. Took the first measurement of blood pressure of all patients a day before the operation and took the second measurement when they were in operating room. Carried out the categorization of patients as per criteria of American Hypertension Association (AHA) standers.

Results: Amongst the participants of present research study, according to gender statistics 245 patients were male and 393 patients were female. 25 males and 69 females a total of 94 (14.73%) patients were hypertensive. 19 patients became hypertensive during the study period, whereas, previously known hypertensive patients were 75. 14 cases had severe hypertension, 36 patients had stage one hypertension and 44 patients had stage two hypertension.

Conclusion: The common preoperative abnormality in patients undergoing general surgery is abnormal high blood pressure and this hypertension may be related with cardiovascular adversative effects in the perioperative phase. 15% patients were hypertensive from which more frequent hypertension was "stage two hypertension".

Keywords: Patients, Surgical, Prevalence, Hypertension, Preoperative

Corresponding author:

Dr. Mohsin Jamil,
DHQ Hospital,
Chakwal

QR code



Please cite this article in press Mohsin Jamil et al., *The Prevalence and Intensity of Abnormal High Blood Pressure in Patients Necessitating Conventional Surgery in the Preoperative Period.*, Indo Am. J. P. Sci, 2018; 05(10).

INTRODUCTION:

In most of Western countries hypertension is one of the leading causes of disability and death. In advanced nations cardiovascular disorder occurs due to the hypertension. It is also known as one of the most general risk factors for illness in the whole world as assessed by Comparative Risk Assessment the Co-operation Group. The most significant substitutable risk factor for renal diseases and cardiovascular is cerebrovascular. The prevalence of hypertension is 18 percent in Pakistan according to the National Health Survey report. The occurrence of hypertension in Pakistan is 25 percent according to another study carried out in Pakistan. The general prevalence of 20% to 25% is the very frequent and general clinical abnormality in surgical patients. On premeditated day of surgery, the most usual reason of procrastinated surgical procedure is hypertension. during surgery, hypertensive patients have more risk for hypertensive emergencies and unstable blood pressure. Perioperative cardiovascular complications are commonly in relation to preoperative hypertension. High postoperative complications for example intracranial hemorrhage is due to uninhibited excessive hypertension. Even mild hypertensive patients are also at risk. The most important component of preoperative evaluation is determination of blood pressure. However, before the surgery blood pressure may also increase in controlled hypertensive patients. Observation show that blood pressure remained in limits only in more than 10% of controlled high blood pressure patients. A significant amount of people doesn't know about their present condition of high blood pressure and those who have knowledge about it and are also addicted of hypertension do not have adequate medical treatment. Commonly faced such problems before surgical procedures by the specialists. Before coming to the operating room, most selected patients for surgery are capable of determining individual blood pressure. Blood pressure values taken

immediately during or before induction if there is inadequate sedation as a previous sedation and there is a change between blood pressure measurements of preoperative calculations. An incident of hypertension may occur during extubation, although, the patient's blood pressure remains under control during the procedure. Severe hypertension that every so often remains static even with antihypertensive drugs, during induction, sometimes it can be hazardous and severe hypotension results after surgical stimulation.

MATERIAL AND METHODS:

Conducted present cross-sectional observational study in the surgery department of services hospital, Lahore for the time duration of one year from March 2017 to February 2018. Made the selection criteria for hypertension patients due for surgery. Carefully chosen 638 patients of high blood pressure who needed the surgery. Got an informed written consent from all selected patients and also took no objection certificate from ethical committee of hospital. Selected all those patients who were in between the age of 20 years to 83 years either male or female for the current research study. Collected the previous history of high blood pressure from all patients chosen for the study. Carried out the first measurement of blood pressure of all patients a day before the operation using a blood pressure monitor and took the second measurement when they were in operating room. Made all the necessary reading during the rest period of patients. Carried out the classification of patients and the Guidelines for the Management of ESH / ESC 2013 Hypertension according to the standers of the International Society of Hypertension, an American Hypertension Association (AHA) as described in table number one. Asked the hypertensive patients who were aware of their high blood pressure, about the usage of routine medication. Carried out the statistical analysis of data through SPSS software version 20.

Table No 1: Classification of Hypertension

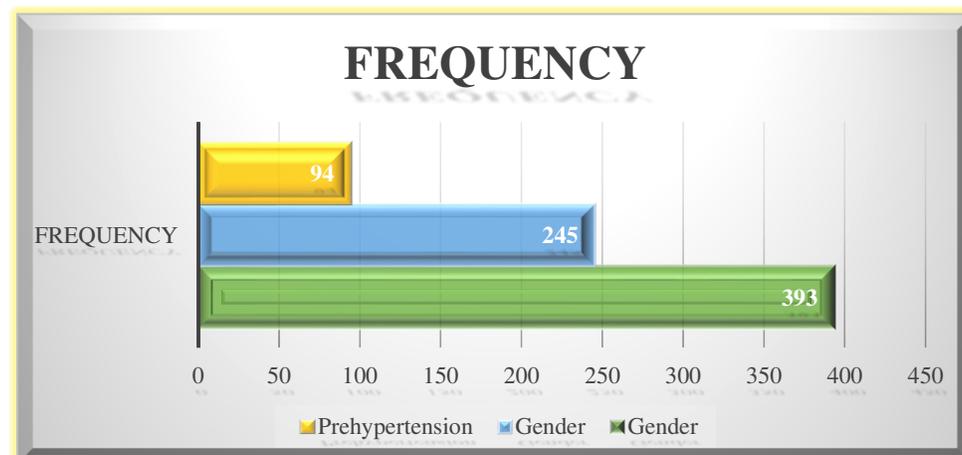
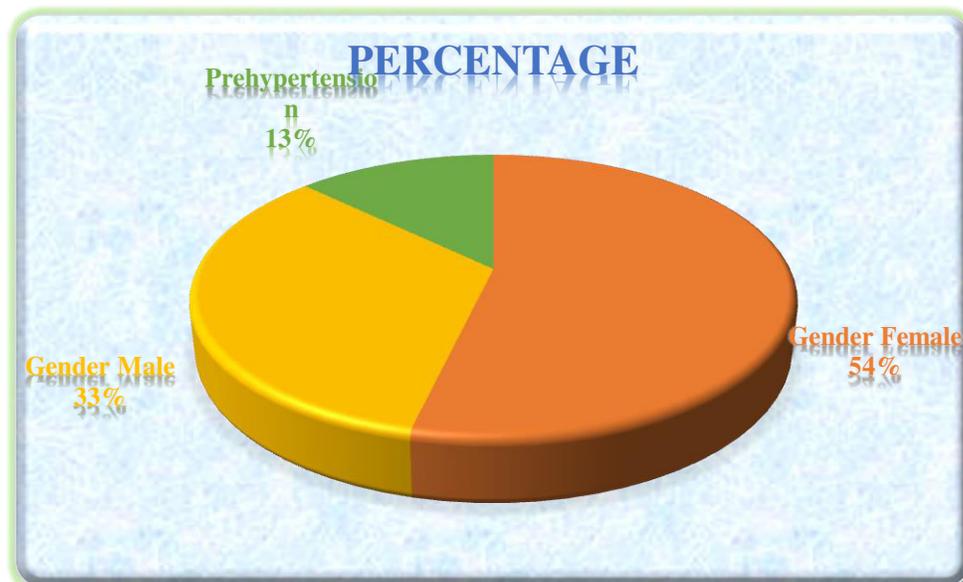
<i>Category of Blood Pressure</i>	Systolic Blood Pressure (mmHg)	Diastolic Blood Pressure (mmHg)
<i>Normal</i>	<120	<80
<i>Prehypertension</i>	120 - 139	80 - 89
<i>Stage-I Hypertension</i>	140 - 159	90 - 99
<i>Stage-II Hypertension</i>	160 - 179	100 - 109
<i>Severe hypertension</i>	> 180	> 110

RESULTS:

According to gender data 245 persons were men and 393 were women from the 638 of total selected participants of current observational study with the average age of 38 years ranging from 20 years to 83 years as described in the tabular and graphical shape below.

Table No 2: Frequency of Patients Regarding Gender, Age and Hypertension

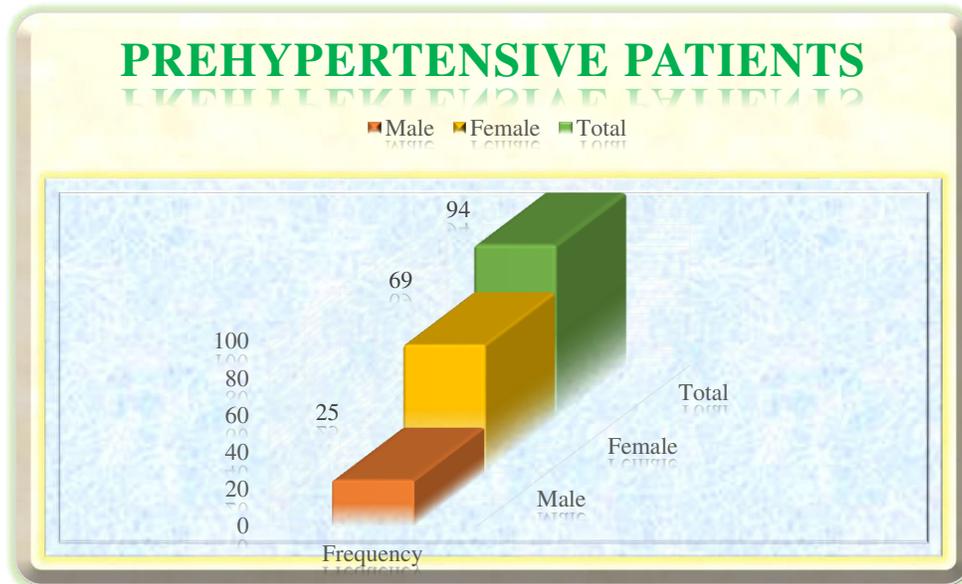
Variables	Percentage	Frequency	
Gender	Female	61.6 %	393
	Male	38.4 %	245
Prehypertension	14.73%	94	
Mean age	38 ± 3.55 Years		



Already known hypertensive patients were 94 (14.73%) from which 25 were male and 69 were female.

Table No 3: Prehypertensive Patients

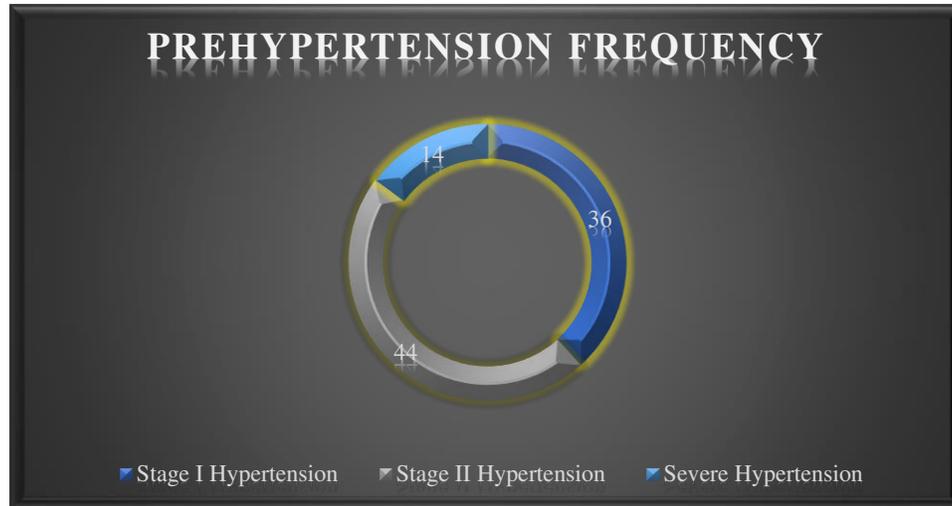
Gender	Frequency
Male	25
Female	69
Total	94



According to observation 14 patients were in severe hypertension stage, 44 patients were in stage II hypertension and 36 were in stage I hypertension. It has observed that stage II hypertension was most common as compared to stage I hypertension and severe hypertension.

Table No 4: Stage Wise Prehypertension Frequency

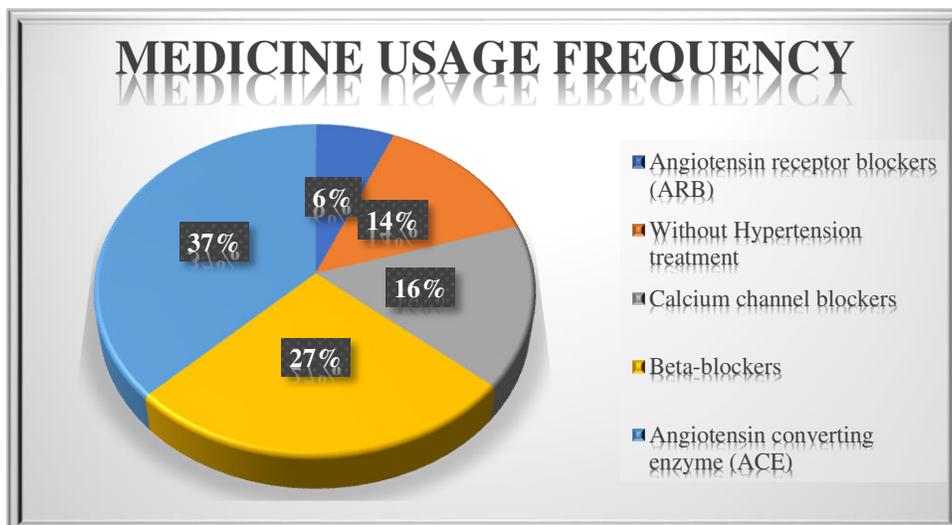
Stage	Frequency
Stage I Hypertension	36
Stage II Hypertension	44
Severe Hypertension	14



These patients of hypertension were using medicines like angiotensin receptor blockers (ARB), hypertension treatment, calcium channel blockers, beta-blockers and angiotensin converting enzyme (ACE) inhibitors. Showed the results in table below.

Table No 5: Medicine usage frequency of patients

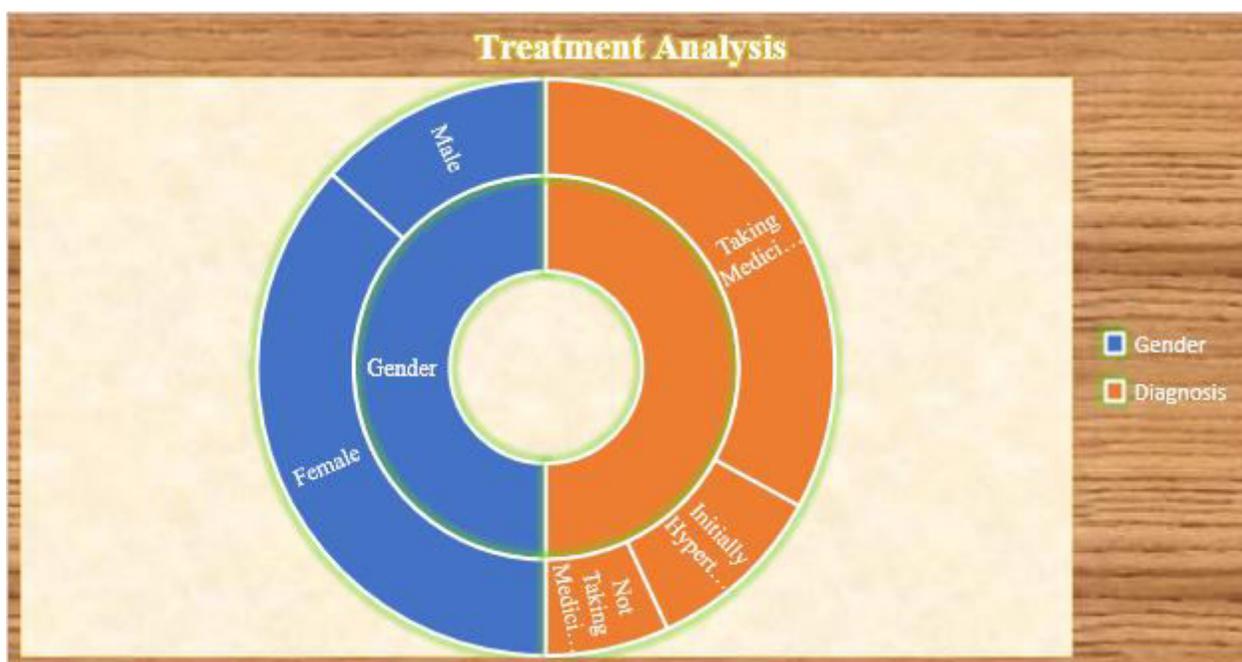
MEDICINE	FREQUENCY
ANGIOTENSIN RECEPTOR BLOCKERS (ARB)	6
WITHOUT HYPERTENSION TREATMENT	13
CALCIUM CHANNEL BLOCKERS	15
BETA-BLOCKERS	25
ANGIOTENSIN CONVERTING ENZYME (ACE)	35



The occurrence of high blood pressure in women was 69 out of 393 (17.57%) while in male patients it was 25 out of 245 (10.20%). 19 patients were initially hypertensive and 62 of the 94 hypertensive patients were already known and receiving medical treatment for hypertension. Also identified 13 patients with high blood pressure but not receiving any medical treatment. Tabular and graphical form described below.

Table No 6: Frequency of Hypertensive Patients and Treatment Analysis

Variables		Frequency
Gender	Male	25
	Female	69
Diagnosis	Taking Medicines	62
	Not Taking Medicines	13
	Initially Hypertensive	19

**DISCUSSION:**

During surgery hypertension stage I and stage II need consideration but there is no need to postpone the surgery. However, surgery of patients having severe hypertension is critical. Hence, the patients with a blood pressure more than 180/110 mmHg it is advisable to postpone the surgery. Different studies reports show different prevalence. According to observation of present research study, found 15 percent of prevalence of hypertension among preoperative patients. According to work of Alabama prevalence of hypertension was at around 10%. Differences in sex distribution might be the main cause of difference in prevalence of hypertension. There were less women (35%) in their work than men (65%) as compared to this research. Statistics of our study show that there are more females (61.6%) than the male (38.4%) participants from which 10.2% of

male patients and 17.56% of female patients had hypertension.

Results of another study by Sapkota et al. also conflict to present study which might be due to alterations in the distribution of patients on gender bases. The age of the study participants also makes variation in prevalence of hypertension. Over the age of 70 years the prevalence of hypertension has changed by more than 60% and in 18-19 years less than 10% According to the Pakistan National Health Survey. Observer alike results in females as in the 18-19 years age group it is less than 5% and in the 60-69 years age group it is up to 70%. Found sudden increase in the prevalence of hypertension as with increasing age. Among different social groups Pakistan, there are remarkable differences present. According to findings of a study there was a

prevalence of hypertension in 16.4 percent among females and 17.3 percent among males of Punjab population.

Reports show different prevalence ratios amongst patients experiencing surgery. In a study by Jonas JB *et al.* in patients older than 30 years who underwent ophthalmic surgery in India got a prevalence of 22.1%. found major differences as compared to this study due to age differences. Hypertensive patients of stage I or stage II patients are in excess in this study which are not usually associated with excessive complications in the perioperative period. That is why, these patients are not in need of reprogramming for selected surgical processes. Uncontrolled blood pressure is just not a considerable issue now a days because of the presence of well-equipped operation team with modern equipment and technology.

REFERENCES:

- Choy, W., Lam, S.K., Smith, Z.A. and Dahdaleh, N.S., 2018. Predictors of 30-Day Hospital Readmission After Posterior Cervical Fusion in 3401 Patients. *Spine*, 43(5), pp.356-363.
- Berger, E.R., Huffman, K.M., Fraker, T., Petrick, A.T., Brethauer, S.A., Hall, B.L., Ko, C.Y. and Morton, J.M., 2018. Prevalence and risk factors for bariatric surgery readmissions: findings from 130,007 admissions in the metabolic and bariatric surgery accreditation and quality improvement program. *Annals of surgery*, 267(1), pp.122-131.
- Berger, E.R., Huffman, K.M., Fraker, T., Petrick, A.T., Brethauer, S.A., Hall, B.L., Ko, C.Y. and Morton, J.M., 2018. Prevalence and risk factors for bariatric surgery readmissions: findings from 130,007 admissions in the metabolic and bariatric surgery accreditation and quality improvement program. *Annals of surgery*, 267(1), pp.122-131.
- Lavie, C. J., Arena, R., Alpert, M. A., Milani, R. V., & Ventura, H. O. (2018). Management of cardiovascular diseases in patients with obesity. *Nature Reviews Cardiology*, 15(1), 45.
- Smilowitz NR, Gupta N, Guo Y, Beckman JA, Bangalore S, Berger JS. Trends in cardiovascular risk factor and disease prevalence in patients undergoing non-cardiac surgery. *Heart*. 2018 Jan 5: heartjnl-2017.
- Hellou, E., Bahouth, Z., Sabo, E., Abassi, Z. and Nativ, O., 2018. The impact of comorbidities, sex and age on the occurrence of acute kidney injury among patients undergoing nephron-sparing surgery. *Therapeutic Advances in Urology*, p.1756287217747190.
- Friedman DJ, Piccini JP, Wang T, Zheng J, Malaisrie SC, Holmes DR, Suri RM, Mack MJ, Badhwar V, Jacobs JP, Gaca JG. Association Between Left Atrial Appendage Occlusion and Readmission for Thromboembolism Among Patients With Atrial Fibrillation Undergoing Concomitant Cardiac Surgery. *JAMA*. 2018 Jan 23;319(4):365-74.
- Zamora - Valdes, D., Watt, K.D., Kellogg, T.A., Poterucha, J.J., Di Cecco, S.R., Francisco Ziller, N.M., Taner, T., Rosen, C.B. and Heimbach, J.K., 2018. Long term outcomes of patients undergoing simultaneous Liver Transplantation and Sleeve Gastrectomy. *Hepatology*.
- Vora, H., Chung, A., Lewis, A., Mirocha, J., Amersi, F., Giuliano, A. and Alban, R.F., 2018. Reconstruction among patients undergoing mastectomy: the effect of surgical deserts. *Journal of Surgical Research*, 223, pp.237-242.
- Moulla Y, Lyros O, Blüher M, Simon P, Dietrich A. Feasibility and Safety of Bariatric Surgery in High-Risk Patients: A Single-Center Experience. *Journal of Obesity*. 2018;2018.
- Jakobsen GS, Småstuen MC, Sandbu R, Nordstrand N, Hofsø D, Lindberg M, Hertel JK, Hjelmæsæth J. Association of Bariatric Surgery vs Medical Obesity Treatment with Long-term Medical Complications and Obesity-Related Comorbidities. *Jama*. 2018 Jan 16;319(3):291-301.
- Piña, I.L., Zheng, Q., She, L., Szwed, H., Lang, I.M., Farsky, P.S., Castelvechchio, S., Biernat, J., Paraforos, A., Kosevic, D. and Favaloro, L.E., 2018. Sex Difference in Patients with Ischemic Heart Failure Undergoing Surgical Revascularization: Results from the STICH Trial (Surgical Treatment for Ischemic Heart Failure). *Circulation*, 137(8), pp.771-780.
- Lavie CJ, Arena R, Alpert MA, Milani RV, Ventura HO. Management of cardiovascular diseases in patients with obesity. *Nature Reviews Cardiology*. 2018 Jan;15(1):45.3