



**CLINICAL PROFILE AND COMPLICATIONS IN PATIENTS PRESENTING WITH
HYPERTENSIVE CRISIS IN TERTIARY CARE HOSPITAL IN NORTH KARNATAKA**

Dr. Mohan D. Kashinkunti¹, Dr. M. V. Kalasuramath^{2*} and Dr. Tvisha J. Ijner³

¹Professor, Department of Medicine, SDMCMS & H, Dharwad, PIN- 580009.

²Assistanat Professor SDMCMS & H.

³Intern. SDMCMS & H.

***Corresponding Author: Dr. M. V. Kalasuramath**

Assistanat Professor SDMCMS & H.

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ABSTRACT

Hypertension is a major health concern all across the globe. Due to non-specific symptoms and vague presentation, it is often undiagnosed or diagnosed late. This in turn leads to inadequate management which is further contributes to the burden of Hypertensive Crisis in the Emergency Department. The objective of the present study is to determine the clinical profile and address the complications and outcome of patients presenting with Hypertensive crisis. Observational study was conducted in a tertiary care hospital. Detailed history with laboratory and radiological data was collected from 116 patients during June 2017 to August 2018. Majority of the patients were male (69%) and in the age group of 50-80 years (69%). The most common presentation was giddiness (58%) followed by headache (50%), breathlessness (33%) and hemiparesis (31%). End organ damage was most commonly Neurological (43%), followed by cardiovascular (27%) and Renal (21%). Mortality was most commonly due intracranial bleed, followed by myocardial infarction, ischemic stroke, followed by renal failure. The in-patient mortality in the present study was 24%. Health Education, Early diagnosis and treatment of Hypertension, therefore, need to be strengthened to reduce the prevalence and mortality associated with Hypertension.

KEYWORDS: Hypertension, Hypertensive Crisis, Hypertensive Emergency.

INTRODUCTION

Hypertension affects individuals all across the globe. According to the World Health Organisation, over one billion people are hypertensive.^[1] Every one in three adults is hypertensive.^[2] The prevalence of hypertension increased with age.^[3] Etiologically, hypertension can be classified into Essential hypertension (with no identifiable cause) and secondary (due to Renal diseases, Vascular conditions, Endocrine disorders, Pregnancy or certain Drugs).^[3] Hypertensive crisis includes two entities- Hypertensive Emergency and Hypertensive Urgency.

Hypertensive emergency is defined by a blood pressure >180/120 mmHg with target organ dysfunction, including the Brain, Heart and kidneys. Under normal conditions, these organs are able to regulate their perfusion, which remains relatively constant, despite normal fluctuations in blood pressure. The end organ damage in hypertensive emergency is attributed to the failure of the normal autoregulatory function. This occurs due to endothelial damage and fibrinoid necrosis of arterioles which ultimately result in ischemia and

reduced perfusion.^[10,11] Therefore these patients require an immediate reduction of blood pressure.

Hypertensive urgency is defined by a blood pressure >180/120 mmHg without severe symptoms or progressive target organ damage.^[1,9] These patients must be carefully evaluated and monitored for hypertension induced heart and kidney damage.

According to studies, hypertensive crises account for 27% of all medical emergencies in an emergency department, out of which 24% are hypertensive emergencies.^[19] Therefore it is crucial to understand the clinical profile of patients with hypertensive crisis. The present study is an attempt to determine and describe the salient clinical features, laboratory and radiological findings in patients presenting with hypertensive crisis in tertiary care hospital. The study was undertaken to determine the preventable causes of hypertensive crisis and its application in the population for prevention of hypertensive crisis.

MATERIALS AND METHODS

The study was undertaken in SDM College of Medical Sciences and Hospital, a tertiary care hospital in North Karnataka. A questionnaire was developed based on review of literature to collect relevant patient information. Patients above the age of 18 years admitted with hypertensive crisis in the emergency department, intensive care unit or ward of a tertiary care hospital were included in the study. The patients were admitted with a variety of symptoms ranging from giddiness, blurring of vision to chest pain or hemiparesis. A total of 100 patients meeting the above criteria were evaluated over a period of 15 months from June 2017 to August 2018.

Only those patients were included whose Blood Pressure was above 180/120 mm of Hg and were willing to consent for the study. Patients below 18 years of age, with blood pressures lower than 180/120mm of Hg and those unwilling to consent for the study were excluded.

A detailed patient history was obtained and clinical examination was done. Blood Pressure was monitored. Relevant laboratory data - including Lipid Profile, Blood Sugars, Renal Function tests and Urine Analysis - was obtained. Fundoscopy, Electrocardiogram and 2-Dimensional Echocardiography results were noted. Neuroimaging was done in patients presenting with neurological symptoms.

RESULTS

A total of 100 patients admitted to tertiary care hospital during the period of June 2017 to August 2018 were statistically analysed. Majority of the cases were Male patients (69%) and the Male: Female ratio was approximately 2.2:1.

Table 1: Gender characteristics of patients with Hypertensive Crisis.

Gender	Outcome		Total
	Expired	Discharged	
Male	20	49	69
Female	04	27	31
Total	24	76	100

Table 2: Age characteristics of patients with Hypertensive Crisis.

Age	Outcome		Total
	Expired	Discharged	
31-40	02	04	06
41-50	05	20	25
51-60	05	18	23
61-70	08	19	27
71-80	04	15	19
Total	24	76	100

The number of cases presenting with hypertensive crisis was seen to increase with the age of the patient. Over 69% of the patients analysed were in the age group of 50-80 years.

Of the 100 patients admitted, 24 patients expired and the remaining 76 patients were discharged with a mean duration of hospital stay of 9 days.

Table 3: Symptoms and Complications of Hypertensive Crisis.

Presenting Symptoms	Outcome		Total
	Expired N=24	Discharged N=76	
Neurological			
Giddiness	23	36	59
Headache	23	27	50
Hemiparesis	12	19	31
Slurred Speech	07	03	10
Altered Sensorium	07	03	10
Convulsion	07	03	10
Cardiovascular			
Breathlessness	16	17	33
Chest Pain	08	08	16
Sweating	07	09	16
Renal			
Oliguria	05	05	10
Haematuria	09	05	14
End Organ Damage	Outcome		Total
	Expired N=28	Discharged N=88	
Neurological	15	28	43
Cardiovascular	10	17	27
Renal	07	14	21
Ophthalmic	06	10	16

The most common presenting symptom was giddiness (59%) followed by headache (50%), Breathlessness (33%), Hemiparesis (31%) and Chest pain (16%). Neurological symptoms were seen more often. The most common end organ damage was also found to be neurological (43%) followed by cardiovascular, renal and ophthalmic.

DISCUSSION

This study explores the clinical profile, laboratory findings and complications of patients presenting with Hypertensive crisis in a tertiary care centre. With the advent of rapid urbanisation and globalisation of unhealthy lifestyle, there has been a steady increase in the number of hypertensive patients over the past few decades. In this urban world, Non communicable diseases including hypertension, diabetes, cardiovascular diseases, chronic lung diseases and cancers have taken over the communicable diseases.^[5] The increasing prevalence of hypertension is due to population growth, ageing, sedentary lifestyle, habitual changes such as smoking, unhealthy diet, alcoholism. These risk factors also factor in the occurrence of diabetes and dyslipidaemias.^[6]

With the development of newer technology and recent advances in Medicine, it is possible to establish diagnosis

and address the complications. However, these facilities are not accessible to all and many patients often go undiagnosed due to non-specific symptoms. Hypertension is, therefore, aptly referred to as a silent killer. Hypertension contributes to the burden of heart disease, stroke, kidney failure and premature death and disability.^[5] Hypertensive crises are frequent in long standing uncontrolled hypertension and in advance age hypertensive crisis is associated with acute deterioration in neurological status, cardiovascular complications and worsening of renal function. Hypertensive crisis is one of the important causes of in-hospital mortality and is associated with poor outcome.^[6]

In the present clinical study of hypertensive emergencies the number of males presenting with hypertensive crises were more than the number of females with Male: female ratio is 2.2:1. The mean age of presentation was 58 years. Mean age of expired patients was 58 years which were higher than patients who were discharged (55 years). Out of the 91 known hypertensives 59 were continuing their antihypertensive medications regularly. In the present study 32% patients were non-compliant. Non-compliance is strong risk factor for poor outcome of a disease. Mean systolic blood pressure was 210 ± 10 and mean diastolic pressure was 144 ± 6 mm of Hg.

Among 100 patients 43 patients presented with abnormal central nervous system findings out of which 28 (65%) expired. Chest radiograph was suggestive of cardiomegaly in 30 patients and 21 patients had signs of pulmonary oedema. Chest radiograph was normal in 70 patients. 14 patients were found to have type IV diastolic and 36 patients had systolic dysfunction with LVEF <60%. Patients with Grade IV diastolic dysfunction were found to have a poor outcome. 31 patients had LVH. 9 patients had CKD which predicted a poor outcome. Amongst Hypertensive retinopathy changes, Patients with grade 3 hypertensive retinopathy 3 (11%) and papilledema had poor outcome. Out of the 100 patients studied 26 patients had diabetes mellitus and 19 had history of Ischemic heart disease. Mortality was high with past history of comorbid conditions. Most common cause of Mortality was Intracranial bleed (43%), followed by myocardial infarction (27%), ischemic stroke (21%) and renal failure (7%).

CONCLUSION

Hypertensive crisis comprise the common crisis among the medical emergency admissions. It is a silent killer and patients present with a spectrum of symptoms. The most common presenting symptom is Giddiness, followed by headache, breathlessness and hemiparesis. Primary hypertension was seen in about 90% of patients with hypertensive crisis. The in-hospital mortality among patients with hypertensive emergency in present study was 24%. Most common cause of Mortality was intracranial bleed, followed by myocardial infarction, ischemic stroke, followed by renal failure.

The study also supports that noncompliance is the most common preventable cause which was seen in 32% of the population.

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