

CLINICAL PROFILE OF HYPERTENSIVE CRISIS PATIENTS AT RURAL MEDICAL COLLEGE HOSPITAL

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Abstract

Background: Hypertension is a common medical condition, estimated to occur in about one in three young adults, increasing to about 60% for those over 60 years and affects more than three of four people older than 70 years of age. To study the clinical profile associated with Hypertensive Crisis. **Materials and Methods:** This observational study was done at Adichunchanagiri Hospital and Research Centre, Bellur. Over a period of one and half years. The study population included patients admitted to this hospital with elevated blood pressure (SBP \geq 180 and DBP \geq 120) with or without evidence of end organ damage. A sample size of 100 patients were evaluated. **Result:** Present study on Hypertensive Crisis showed Hypertensive Urgencies are more common than Hypertensive Emergencies (76:24). Most common age group for Hypertensive Crisis was 5th to 7th decade. Males are commonly affected than females (63:37). Majority of patients are known hypertensives (69%). Most common presenting symptom in Hypertensive Urgency was dyspnoea (42.1%), and in Hypertensive Emergency it was neurological deficit (45.8 %). 59% of patients with Hypertensive Crisis was associated with Diabetes mellitus. **Conclusion:** Hypertensive Crisis being more common in known hypertensives with poor blood pressure control. Higher SBP and DBP at presentation was associated with increased end organ damage and increased mortality.

INTRODUCTION

Hypertension is one of the leading risk factor contributing for global disease burden in future.^[1] Fourth National Health Survey (NFHS-4) evaluated the prevalence of hypertension in a large population based sample and reported as 13.8% in men vs. 8.8% in women (overall 11.3%) aged 15-49 and 15 -54 respectively.^[2]

Hypertensive crises accounts for 0.5% of all emergency cases studied and for 1.7% of all clinical emergencies, hypertensive urgency being more common than hypertensive emergency.^[3] Recent retrospective studies have demonstrated that emergency department referrals from an outpatient clinic or rapid BP-lowering strategies in the emergency department do not lead to improved outcomes in patients with Hypertensive urgencies.^[4] Hypertensive emergencies are defined by marked blood pressure (BP) elevations (typically >180 mm Hg systolic or >110 mm Hg diastolic, though this cutoff is arbitrary) that are associated with acute

target organ damage.^[5] HTN is a chronic modifiable risk factor for cardiovascular disease, however around 1- 2 % of the patients with hypertension will present with hypertensive emergency at some time in their lives.^[6]

Patients with hypertensive emergencies include those who have a dissecting aortic aneurysm, acute pulmonary edema, acute myocardial infarction, unstable angina acute renal failure, acute intracranial hemorrhage, acute ischemic stroke, hypertensive encephalopathy, eclampsia or pre-eclampsia, peri-operative hypertension, a pheochromocytoma crisis, and a sympathomimetic hypertensive crisis caused by use of cocaine, amphetamines, phencyclidine, or monoamine oxidase inhibitors or by abrupt cessation of clonidine or other sympatholytic drugs.^[7]

There is dearth of studies regarding the clinical profile, risk factors and in- hospital outcomes associated with hypertensive crisis in rural hospital. Since the hypertensive crisis leads to high index of mortality and morbidity & economic burden for the patients, the study conducted in rural area helps to

understand the quality of health, benefits of the treatment and awareness among the people.

MATERIALS AND METHODS

This hospital based descriptive study was done on patients with Hypertensive crisis (as per diagnostic criteria) admitted at Adichunchanagiri Hospital and research center, a tertiary care hospital situated at B.G Nagara, Nagamangala Taluk, Karnataka. Duration of study was December 2017 to May 2019. **Sample Size:** 100 Patients admitted during the specified period who fulfilled the below mentioned inclusion and exclusion criteria were included in the study.

Inclusion criteria: Patients with Systolic blood pressure of 180mmhg and above or diastolic blood pressure of 120mmhg and above and age more than 18yrs.

Exclusion criteria: Pregnancy, Patients with malignancy, Patients with HIV.

Investigations. Complete blood count, Peripheral blood smear, Routine urine analysis, Direct ophthalmoscope, CT/MRI Brain (in presence of neurological deficit), USG Abdomen, Electrocardiogram 2D Echocardiogram, Cardiac biomarkers, Renal function test, Arterial Blood Gas, Chest X-ray, Blood sugars - RBS/FBS/ PPBS, Serum electrolytes

Patient was evaluated at the time of admission to the hospital for hypertensive crisis by history, Physical examination, neurological examination, Patients should also underwent evaluation of cardiovascular and renal status. Computed tomography of the brain was done in the presence of any neurological deficit. Echocardiogram was done in cases of Hypertensive Emergencies with cardiac dysfunction. Patients with evidence of renal involvement were evaluated with ultrasonography and renal Doppler.

Statistical methods: The data obtained was entered into MS EXCEL and analysed using SPSS 20.0 and descriptive statistics expressed in terms of percentage, proportions and mean.

RESULTS

The present observational study of Hypertensive Crisis includes a sample of 100 patients presented in emergency department with a SBP \geq 180mmHg and a DBP \geq 120mmHg with or without evidence of end organ damage. Patients with end organ damage is included in Hypertensive Emergency group and without end organ damage is included in Hypertensive Urgency group.

In the present study of 100 patients, 24 patients were diagnosed as Hypertensive Emergency and 76 patients were diagnosed as Hypertensive Urgency.

In the present study, out of 100 patients 37 are females and 63 are males. Only 1 (1%) case was present below 30yrs, most of the patients were in 50 to 70 years of age (55%).16% of cases were in above 70yrs of age. Mean age of patients with Hypertensive crisis were 59.04.

Common age group for Hypertensive Emergency was 50 to 60 yrs (33.3%) and Hypertensive Urgency it was 60 to 70 yrs (31.6%). In both Hypertensive Emergency and Hypertensive Urgency maximum cases were seen in 50 to 70 yrs age group (58.3% and 54% respectively). Below 30 yrs only 1 case of Hypertensive Emergency was present.

Out of 24 case of Hypertensive Emergency 10 (41.7%) are females and 14 (58.3%) are males, in Hypertensive Urgency out of 76 cases 27 (35.5%) are females and 49 (64.5%) are males.

Most common presentation in Hypertensive crisis were dyspnea (39%), easy fatigability (24%) and giddiness (18%).

Most common presentation in Hypertensive emergency were neurological deficit (45.8%), giddiness (37.5%) and dyspnea (29.2%).

Most common presentation in Hypertensive urgency were dyspnea (42.1%), easy fatigability (26.3%) and giddiness (11.8%).

Other symptoms in Hypertensive Crisis were headache (19%) and palpitation (12%). In Hypertensive Emergency it was blurring of vision (13.9%) nausea vomiting (8.3%), headache, palpitation and frothy sputum (4.2% each). In Hypertensive Urgency it was headache (23.7%) and palpitation (14.5%).

Most common neurological symptoms in Hypertensive emergency were altered sensorium and loss of consciousness (16.7%, each). Generalised tonic clonic seizure (GTCS) (8.3%), slurred speech (8.3%) and weakness of one side of the body (8.3%) also noted.

Out of 100 patients, 74% of patients had past history of hypertension. It includes 70.8% of Hypertensive Emergency patients and 75% Hypertensive Urgency patients.

In Hypertensive Emergency, 45.8% of people had hypertension for 5-10 years. In Hypertensive Urgency, it corresponds to 25%. 16.7% of Hypertensive Emergency patients and 36.8% of Hypertensive Urgency patients had history of hypertension for less than 5 years. 33.3% of Hypertensive Emergency patients and 28.9% of Hypertensive Urgency patients didn't give their history properly.

Table 1: Hypertensive Emergency/Hypertensive Urgency distribution of patients studied

	No. of patients	%
Hypertensive Emergency	24	24.0
Hypertensive Urgency	76	76.0
Total	100	100.0

Table 2: Age and Gender distribution in Hypertensive Emergency and Hypertensive Urgency.

Variables	Hypertensive Emergency (n=24)	Hypertensive Urgency (n=76)	Total (n=100)	P value
Age in years				
• <30	1(4.2%)	0(0%)	1(1%)	0.484
• 30-40	3(12.5%)	9(11.8%)	12(12%)	
• 41-50	2(8.3%)	14(18.4%)	16(16%)	
• 51-60	8(33.3%)	17(22.4%)	25(25%)	
• 61-70	6(25%)	24(31.6%)	30(30%)	
• 71-80	2(8.3%)	6(7.9%)	8(8%)	
• >80	2(8.3%)	6(7.9%)	8(8%)	
Gender				
• Female	10(41.7%)	27(35.5%)	37(37%)	0.587
• Male	14(58.3%)	49(64.5%)	63(63%)	

Chi-Square/Fisher Exact Test

Table 3: Clinical presentations of Hypertensive Crisis, Hypertensive Emergency and Hypertensive Urgency

Symptoms	Hypertensive Emergency (n=24)	Hypertensive Urgency (n=76)	Total (n=100)	P value
Easy Fatigability				
• Absent	20(83.3%)	56(73.7%)	76(76%)	0.335
• Present	4(16.7%)	20(26.3%)	24(24%)	
Chest Pain				
• Absent	18(75%)	68(89.5%)	86(86%)	0.075+
• Present	6(25%)	8(10.5%)	14(14%)	
Dyspnea				
• Absent	17(70.8%)	44(57.9%)	61(61%)	0.257
• Present	7(29.2%)	32(42.1%)	39(39%)	
Giddiness				
• Absent	15(62.5%)	67(88.2%)	82(82%)	0.004**
• Present	9(37.5%)	9(11.8%)	18(18%)	
Neuro Deficit				
• Absent	13(54.2%)	76(100.0%)	89(89.0%)	<0.001**
• Present	11(45.8%)	0(0.0%)	11(11.0%)	

Chi-Square/Fisher Exact Test

Table 4: Other symptoms at the time of hospitalisation in patients with Hypertensive Crisis.

	Hypertensive Emergency (n=24)	Hypertensive Urgency (n=76)	Total (n=100)
Present	8(33.3%)	37(48.7%)	43(43%)
Headache	1(4.2%)	18(23.7%)	19(19%)
Palpitation	1(4.2%)	11(14.5%)	12(12%)
Nausea, vomiting	2(8.3%)	8(9.5%)	10(10%)
Pink Frothy sputum	1(4.2%)	0(0%)	1(1%)
Blurring of vision,	3(13.9%)	0(0%)	3(3%)
Absent	16(66.7%)	39(51.4%)	55(55%)

Table 5: Neurological symptoms at the time of hospitalization in patients with Hypertensive Emergency

Neurological symptoms	Hypertensive Emergency (N=24)
Altered sensorium	4(16.7%)
Slurred speech	2(8.3%)
Weakness of one side of the body	2(8.3%)
Generalised tonic clonic seizure	2(8.3%)
Loss of consciousness	4(16.7%)

DISCUSSION

The clinical profile of patients with Hypertensive crisis varies widely. In this study, among 100 patients admitted to this hospital with severely elevated Blood pressure (SBP \geq 180 and DBP \geq 120) only 24% of them, developed end organ damage or Hypertensive Emergencies whereas 76 % were diagnosed as Hypertensive Urgencies. study among 100 patients, 76 patients were diagnosed as Hypertensive Urgencies and 24 patients were diagnosed as Hypertensive Emergencies. All the above-mentioned studies showed that, the percentage of Hypertensive

Urgencies was more common than Hypertensive Emergencies. The present study showed comparable results with the study done by Zampiglione et al.^[8]

In the present study males (63%) were more affected than females (37%) among 100 patients of Hypertensive Crisis. In the above table, first two studies showed female predominance and last two studies showed male predominance, and the present study showed comparable results with AL BANNAY and HUSSAIN et al study.^[9]

In the present study the maximum number of patients fall in the age group of 61-70 years for Hypertensive

Crisis, the present study shows comparable result with study done by Sabina Salk et al.^[10]

The common symptoms among Hypertensive Emergencies were focal neurological deficit (45.8%), giddiness (37.5%), dyspnea (29.2%), chest pain (25%) and easy fatigability (16.7 %). In the present study Focal neurological deficit being common among hypertensive emergency group which is comparable to studies done by Salgre S B et al,^[11] and Martin et al.^[3]

In the present study, among Hypertensive Urgency, common symptoms were dyspnea (42.1%), easy fatigability (26.3%), headache (23.7%) followed by chest pain (10.5%).

In Salgre S B et al,^[11] and Martin et al³ study, common presenting symptoms in Hypertensive Urgency was headache so the present study was not comparable with studies in clinical presentations of Hypertensive Urgency.

Out of the patients with Hypertensive Emergencies 70.8% were already diagnosed with hypertension, of which 50 % were diagnosed for more than 5years duration and only 50 % were on regular antihypertensive medications with good compliance. Similarly 75% of the patients presented with Hypertensive Urgencies were already diagnosed as hypertensives, of which 28.9% were diagnosed for more than 5 year duration, 51.3 % of them had good compliance to antihypertensive medication.

All the above-mentioned studies showed that Hypertensive Crisis occurred more commonly in known hypertensives and the present study is comparable with study done by Zampaglione et al.^[8]

The mean SBP at presentation was 223.20 +/- 19.58 mmHg in patients with Hypertensive Emergency and in Hypertensive Urgency it was 197.36 +/- 18.21 mmHg. The present study was showing comparable result with the study done by Salgre S B et al.^[11]

The mean DBP at presentation was 132.64 +/- 8.85 mmHg in patients with Hypertensive Emergency and in patients with Hypertensive Urgency it was 122.55 +/- 14.92 mmHg.

The present study showing comparable result with the Studies done by Zampaglione et al⁸ and Salagre SB et al,^[11] From these studies, it can be concluded that, higher the SBP and DBP at presentation, more prone for end organ damage.

CONCLUSION

Majority of the patient presented with Hypertensive Crisis were Hypertensive Urgencies. Most common

age group for Hypertensive Crisis was between 5th to 7th decade. In both Hypertensive Urgency and Hypertensive Emergency majority of patients were males. Hypertensive Crisis was most commonly seen in patients with known history of hypertension. 5. Patients with history of diabetes had increased risk for Hypertensive Crisis. Most common presenting symptom of patients with Hypertensive Urgency was dyspnoea. Most common presenting symptom of patients with Hypertensive Emergency was neurological deficit.

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