ORIGINAL RESEARCH PAPER
Volume - 11 | Issue - 02 | February - 2022 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

A CLINICAL STUDY ON PRESENTATION OF HYPERTENSIVE EMERGENCIES IN TERTIARY CARE HOSPITAL

General Medicine

Dr B. Ashok Kumar Reddy* Final year post-graduate, Santhiram medical college and general hospital , Nandyal. *Corresponding Author

Dr B. Sarath Kumar Reddy M.D, Associate professor, Department of General Medicine, Santhiram Medical College and General Hospital, Nandyal.

Dr G. Vijaya Kumar M.D, Head of the department, General Medicine, Santhiram Medical College and General Hospital, Nandyal.

ABSTRACT

BACKGROUND: The clinical profile of hypertensive emergency patients presenting to hospitals in a developing country like ours is unknown. The current study sought to assess the modes of presentation, clinical profile, and spectrum of target organ damage in hypertensive emergency patients.

AIM:

- To evaluate the modes of presentations in patients with hypertensive emergencies.
- To evaluate the modes of clinical profile.
- To evaluate the modes of the spectrum of target organ damage in patients with hypertensive emergencies.

MATERIALS AND METHODS: A six-month hospital-based prospective study was conducted in the Department of General Medicine, Santhiram Medical College, and General Hospital after approval from the Hospital Ethics and Research Committee.

The study population included patients admitted to the hospital with severely elevated blood pressure and clinical evidence or laboratory evidence of acute target organ damage. The clinical profile and laboratory profiles of fifty of these patients were examined.

RESULTS: Males were more likely than females to develop a hypertensive emergency. The most common symptoms were neurological deficit, dyspnea, chest pain, convulsions, and vision loss. The vast majority of the patients had a history of hypertension.

Higher blood pressure levels at presentation were linked to a poor outcome. Hyponatremia and hyperkalemia are two laboratory abnormalities observed in these patients. The most common type of target organ damage observed was intracerebral haemorrhage. In the current study, there was a 22% in-hospital mortality rate.

CONCLUSION: Known hypertensives are more likely to present with acute target organ damage due to a hypertensive emergency. The most common mode of presentation is a neurological deficit. The most common type of target organ damage in the current study was acute intracerebral haemorrhage.

KEYWORDS

INTRODUCTION:

- Individuals of all socioeconomic backgrounds and ages are affected by hypertension.
- A hypertensive emergency is defined as the combination of extremely high blood pressure and physical or laboratory findings indicating acute or ongoing target organ damage.[1]
- A given blood pressure level is not necessarily diagnostic of hypertensive emergency on its own, and clinical decompensation rather than blood pressure level alone should define the situation as emergent (target organ damage present) or urgent (target organ damage absent)[2]Hypertension-induced organ damage includes damage to the brain, heart, kidneys, and eyes[3]. The most common symptoms of hypertension-related acute target organ damage are focal neurological deficits, dyspnea, chest pain, headache, and loss of vision[4].
- Hypertensive emergencies account for more than one-fourth of all medical emergencies and urgencies[5]. A hypertensive emergency can occur due to chronic hypertension, noncompliance with medications, or a new presentation of unrecognised essential hypertension.
- A hypertensive emergency is distinguished by rapid deterioration of target organs and poses an immediate threat to life. Before discovering antihypertensive drugs these conditions were almost always fatal[6].
- It is also seen that the incidence of hypertensive emergencies is increasing[7].

AIMS AND OBJECTIVES:

- To evaluate the modes of presentations in patients with hypertensive emergencies.
- To evaluate the modes of clinical profile.
- To evaluate the modes of the spectrum of target organ damage in patients with hypertensive emergencies.

MATERIALS AND METHODS:

A six-month hospital-based prospective study was conducted in the Department of General Medicine, Santhiram Medical College, and General Hospital after approval from the Hospital Ethics and Research Committee.

The study population included patients admitted to the hospital with severely elevated blood pressure and clinical or laboratory evidence of acute target organ damage. The clinical and laboratory profiles of fifty of these patients were examined.

SAMPLING TECHNIQUE AND SAMPLE SIZE:

After obtaining prior informed consent, all patients who met the inclusion criteria and were admitted to Santhiram medical college and general hospital in Nandyal were chosen for the study. Patients with elevated blood pressure (Systolic blood pressure of 180 or diastolic blood pressure of 110 mmHg), a history suggestive of acute target organ damage, or laboratory evidence of critical target organ damage were eligible for the study.

These patients blood pressure was measured at the time of admission, one hour later, 24 hours later, and at the time of discharge. A thorough clinical examination was performed in these patients, including the respiratory system, cardiovascular system, gastrointestinal tract, and central nervous system.

Inclusion Criteria:

- Patients above 18 years of age.
- Patients who have given informed written consent.
- Any evidence of target organ damage, either clinically or through laboratory findings With a systolic blood pressure of 180mm of Hg or diastolic blood pressure of 110mm of Hg.

Exclusion Criteria:

- Patients less than 18 years of age.
- Patients who didn't give informed and written consent.
- Chronic renal failure, valvular heart diseases, and pregnant women.

Data Analysis:
Patients who presented with an elevated blood pressure of Systolic ≥180 or diastolic blood pressure of ≥110 mmHg, with a history suggestive of acute target organ damage or with laboratory evidence of critical target organ damage, were included in the study.

Blood pressure was recorded in these patients at the time of admission, after one hour, after 24 hours, and at the time of discharge.

RESULTS:
Fifty patients were taken for the present study; 70% of the patients were males, age of presentation being fifth and sixth decade with 28% and 26%, respectively. The mean age of the patients was 59.3 years.

Among the fifty patients studied, 30 patients (60 %) were previously known as hypertensives. Out of the known hypertensives, 22 (73 %) were continuing their antihypertensive medications while eight patients (27 %) had discontinued medications and six patients (12 %) had diabetes mellitus and (36 %) had dyslipidemia.

The fundoscopic examination revealed papilledema in 24% of the patients. The average blood pressure readings in patients discharged from the hospital were 212 mm Hg systolic and 112 mm Hg diastolic**.**

Table 1. Presenting Symptoms

PRESENTATIONS	NUMBER OF PATIENTS	PERCENTAGE
Neurological deficits	25	50
dyspnoea	17	34
Chest pain	15	30
Blurring of vision	1	5

The commonest presenting complaints were neurological deficits in 25 patients (50 %), followed by dyspnoea in 17 (34 %) and chest pain in 15 patients (30 %).

Table 2: Neurological deficits

	FREQUENCY (N=25)	PERCENTAGE
Hemiparesis	20	80.00
Monoparesis	1	4.00
Altered sensorium	24	96.00
Convulsions	3	12.00
Visual deficit	3	12.00

Among patients with neurological deficit, 20 of the patients (80 %) had hemiparesis, and one patient had mono-paresis (four per cent) 24 patients (98 %) were in altered sensorium. Three patients (12 %) presented with convulsions and visual deficits each.

Table 3: Renal Function tests

	FREQUENCY (N = 50)	PERCENTAGE
Elevated serum urea	12	24
Elevated serum creatinine	9	18
Elevated s. urea and s. creatinine	5	10

Serum urea was with levels above 40mg/ dl in 12 (24 %) of patients, and Serum creatinine levels were above 1.4 mg/dl in 9 (18 %) of patients. Serum urea and creatinine were elevated in 5 patients (10 %), and seven patients out of 17 patients had elevated serum urea levels alone.

Table 4: Echocardiography

ECHO FINDINGS	PATIENTS	PERCENTAGE
LV dysfunction	16	50
RWMA	13	62
LVH	8	31
Normal	3	12

Echocardiography done in 26 patients with evidence of cardiac dysfunction showed regional wall motion abnormality in 13 patients (50 %), left ventricular dysfunction in 16 patients (62 %) left ventricular hypertrophy In 8 patients (31 %) and normal echocardi ographic study in 3 patients (12 %).

Table 5:target Organ Involvement

ORGAN INVOLVEMENT	PATIENTS	PERCENTAGE
Intracerebral heamorrage	14	28
Subarachnoid haemorrhage	4	8
Acute ischemic stroke	5	10
Acute myocardial infarction	5	10
Unstable angina	6	12
Left ventricular failure	9	18
Acute MI with LVF	2	4
Hypertensive encephalopathy	1	2
Malignant hypertensionn	3	6

Neurological target organ damage included intracerebral bleeding (28%), subarachnoid haemorrhage (8%), acute ischaemic stroke (10%), cardiac target organ damage were acute myocardial infarction (10%), unstable angina (12%), left ventricular failure (18%), acute myocardial infarction with left ventricular failure (4%) hypertensive encephalopathy (2%) malignant hypertension (6%).

DISCUSSION:
Males outnumbered females in the current study, which focused on patients under 50. Most female patients were postmenopausal, indicating that this age group is more vulnerable to end-organ damage. This is also because postmenopausal female hemodynamics are not significantly different from the male profile in terms of blood pressure [8,9].

The vast majority of patients had been previously diagnosed as hypertensive (60 per cent). Twenty-seven per cent of known hypertensives ignored their hypertensive status and stopped taking antihypertensive medications, increasing their risk of acute target organ damage and hypertensive emergency

Diabetes mellitus and dyslipidemia were also present in the current group of patients. Diabetes mellitus and dyslipidemia were present in 12% and 36% of the patients in the recent study, respectively. Martin et al.[10] conducted a study in which 26 per cent of patients had diabetes mellitus. These risk factors would have exacerbated the patients' pre-existing atherosclerosis and coronary artery disease, predisposing them to acute target organ damage.

The prevalence of arterial hypertension in diabetic patients is higher than in non-diabetic patients (40-50 per cent versus 20%, respectively) [11].
Analysing the presenting symptoms, most patients in the current study (50 per cent) had a neurological deficit, followed by dyspnoea (34 per cent) and chest pain. Thirty per cent This was similar to the findings of Martin et al [10], who discovered neurological deficits, dyspnoea, and chest pain in 48 per cent, 25 per cent, and 18 per cent of their patients, respectively.

In their study, Zampglione et al. [5] found that more patients (27%) presented with chest pain, followed by dyspnea (22%) and neurological deficits (21 per cent).

In the current study, neurological deficits ranged from hemiparesis (80%), altered sensorium (96%), convulsions (12%), and visual deficits (12 per cent). The majority of patients with neurological deficits had hemiparesis.

In 62 per cent of patients, fundus examination revealed changes ranging from hypertensive retinopathy to papilledema. Papilledema was observed in 24% of patients, indicating ongoing target organ damage in these patients. Renal dysfunction manifested as elevated serum urea and creatinine levels were observed in 24% and 18% of patients, respectively. Five patients had renal changes that amounted to hypertensive target organ damage**.**

A study on the complications and survival of 315 patients with malignant phase hypertension conducted by Lip GY et al.[12]discovered a low median survival time in patients with proteinuria and high urea and serum creatinine levels at presentation well as if left ventricular hypertrophy was detected on electrocardiogram.

The highest systolic blood pressure was 280 mm Hg, with a mean systolic blood pressure of 216 ±25 mm Hg. The highest recorded diastolic blood pressure was 180 mmHg, with a mean of 126± 18 mm Hg. In their study, Martin et al.10 found that their patients had a mean systolic blood pressure of 193 ±26 mm Hg and a mean diastolic blood pressure of 129± 12 mm Hg.

Higher blood pressure levels would have contributed to more severe target organ damage in these patients, resulting in an adverse outcome.

CONCLUSION:

- Known hypertensives are more likely to present with acute target organ damage due to a hypertensive emergency.
- Diabetes mellitus and dyslipidemia increase the likelihood of developing hypertensive emergencies.
- A neurological deficit is the most common mode of presentation.
- Higher blood pressure levels at presentation indicate a worse outcome.
- In the current study, the most common type of target organ damage was acute intracerebral haemorrhage

REFERENCES:

1. Singh WG, Aslam N, Hypertensive emergencies – Hypertension an international monograph 2001; 350. IJPC.
2. Elliot WJ, Black HR; Hypertensive Crisis. In Parrills JE, Bone RC (eds): Critical Care medicine: principles of diagnosis and management. St Louis, Mosby Yearbook, 1995 PP 565-567.
3. Joint national committee on prevention detection and treatment of high blood pressure. The seventh report of the Joint national committee on prevention detection and treatment of high blood pressure. JAMA 2003; 289: 2560-2572.
4. Karras et al. lack of relationship between hypertension-associated symptoms and blood pressure in hypertensive emergency department patients. American journal of emergency medicine- vol 23(2) March 2005; 106- 110
5. Zamapaglione et al. Hypertensive urgencies and emergencies.Hypertension1996; 27: 144-147
6. Ventura et al. Desperate disease, desperate measures: Tackling malignant hypertension in the 1950s. Am Heart J 2001; 142: 197 203.
7. Elliot WJ. Hypertensive emergencies. In Critical Care Clinics Vol 17 Number 2 April 2001 W.B.Saunders company.
8. Messerli FH et al. Disparate cardiovascular findings in men and women with essential hypertension. Ann Intern Med 1987; 107: 158-61.
9. Owens JF et al. Menopausal status influences ambulatory blood pressure levels and blood pressure changes during mental stress. Circulation 1993; 88: 2794-802.
10. Martin J et al: Arquivos Brasileiros de Cardiologia - Volume 83, No 2, August 2004
11. Sowers JR et al. Diabetes mellitus and associated hypertension, vascular disease, and nephropathy. An update. Hypertension 1995; 26: 869-79.
12. Lip GY et al. Complication and Survival of 354 patients with malignant phase hypertension. J Hypertens Aug: 13(8) 915-24.