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CLINICAL STUDY OF COMPLICATIONS OF HYPERTENSIVE EMERGENCIES

General Medicine

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ABSTRACT

INTRODUCTION: Hypertensive emergency is defined as severe hypertension more than 220/140mm hg with end organ damage. A number of cardiovascular, pulmonary and neurological symptoms are found to be associated with patients in hypertensive emergency with target organ involvement. Focal neurological deficit, intracranial bleed, non-haemorrhagic infarct, acute myocardial infarct, progressive renal failure, headache being commonest symptoms. The goal of treatment is to reduce BP<25% in 2-6 hrs stabilised to 160/100 mm hg then 25% with in 48hrs.
DURATION OF STUDY: September 2018 – December 2019
SAMPLE SIZE :125 cases of hypertensive emergencies during entire duration of study.
AIMS AND OBJECTIVES: To study the complications of hypertensive emergencies related to cardiovascular, renovascular and neurological system.
METHODOLOGY: Prospective observational descriptive study.
DISCUSSION: Research intended for clinical study of complications of hypertensive emergencies. Most common presentation include stroke (intracranial bleed or non-haemorrhagic infarct), hypertensive heart failure, acute myocardial infarction, progressive renal insufficiency, left ventricular failure.
RESULTS: Study is conducted on 125 patients. Most common complication of hypertensive emergencies is intracranial bleed (32%) followed by non-haemorrhagic infarct (20.8%). Hypertensive heart failure accounts for 12%, progressive renal failure accounts for 13.6%, acute myocardial infarction accounts for 1.6%.
CONCLUSION: Study concluded that non-haemorrhagic infarct is the most common complication of hypertensive emergencies followed by intracranial bleed, TIA.

KEYWORDS

INTRODUCTION:

Hypertensive emergency is defined as severe hypertension more than 220/140 mm Hg with end organ damage. A number of cardiovascular, pulmonary and neurological symptoms are found to be associated with patients in hypertensive emergency with target organ involvement. Focal neurological deficits, dyspnoea, chest pain, headache, loss of vision, are considered as the commonest symptoms of hypertensive emergencies. The primary aim is to reduce BP >25% within 2-6 Hrs stabilized to 160/100mmHg then 25% within 48 Hrs. Immediate admission to ICU for prompt BP, with administration of parenteral titrable agents with continuous monitoring of BP, neurological status, urine output. This account for more than one fourth of all medical urgencies and emergencies. A hypertensive emergency is characterized by rapid deterioration of target-organs and poses an immediate threat to life. It is also seen that the incidence of hypertensive emergencies are increasing. This study is done to find out various modes of presentation and clinical profile of hypertensive emergencies in our hospital. All patients with hypertensive emergencies was associated with one or more of following end organ damage including hypertensive retinopathy, hypertensive encephalopathy, stroke(cerebral infarction or intracerebral subarachnoid haemorrhage transient ischemic attack),acute pulmonary edema, left ventricular failure, acute MI, progressive renal insufficiency. All these conditions were diagnosed clinically and by diagnostic tests.

AIMS AND OBJECTIVES: To study the clinical presentation of hypertensive emergencies related to cardiovascular, neurological and renovascular system.

MATERIALS AND METHODS: This present observational study has been conducted in Department of General Medicine, D.Y Patil Hospital, Nerul, Navi Mumbai. A written signed informed consent has been taken prior to enrolling the subjects in the study.

STUDY DESIGN: Prospective study

STUDY SITE: Emergency, ICU, Department of General Medicine, D.Y Patil Hospital, Nerul, Navi Mumbai

DURATION OF STUDY: September 2018 – December 2019

SAMPLE SIZE: All consecutive number of patients presenting with hypertensive emergencies admitted in ICU, D.Y. Patil Hospital, Nerul, Navi Mumbai fitting the inclusion criteria during the entire duration of study.

SELECTION CRITERIA

Inclusion Criteria:

- Patients aged 18 years or more
- Systolic blood pressure >220 mmHg, Diastolic blood pressure >140 mm Hg.
- Both groups of patients, those with past history of hypertension and those without past history of hypertension

Exclusion Criteria:

- Pregnancy

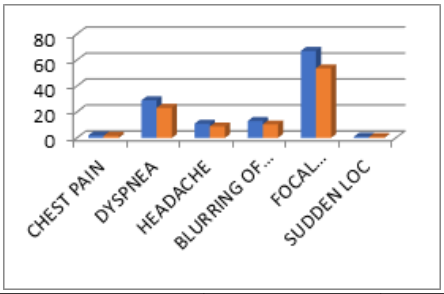
RESULTS AND ANALYSIS:

DISTRIBUTION OF CASES BY NEURO IMAGING: Of the 125 patients studied 40 patients (32%) had Infarction,26 patients (20.8) had Intra Cranial bleed,20 patients (20.8%) had normal study and for the rest 33patients neuro imaging was not done.

Ct/Mri Brain	Frequency (N=125)	Percentage%
Normal	26	20.8
Infarction	40	32
Intra Cranial Bleed	26	20.8
Not Done	33	26.4

DISTRIBUTION OF CASES BY PRESENTING COMPLAINTS: In the present study the presenting symptoms in these patients were neurological deficits including convulsions visual deficits, and cardiac symptoms like chest pain and dyspnoea. The commonest presenting complaints were neurological deficits in 25 patients (50 %) followed by

dyspnea in 17 (34 %) and chest pain in 15 patients (30%).Three (six percent) presented with convulsions and visual deficits each.



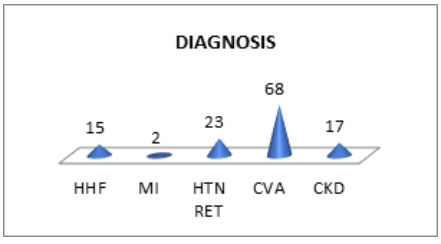
Presenting Complaints	Frequency(N=125)	Percentage %
Chest Pain	2	1.6
Dyspnea	29	23.2
Headache	11	8.8
Blurring Of Vision	13	10.4
Neurological Deficits	67	53.6
Sudden Loss Of Consciousness	1	0.8

DISTRIBUTION OF CASES BY FUNDOSCOPY: Out of the known hypertensives, 24 (19.2%) had hypertensive retinopathy while 101(80.8%) had normal fundoscopy on examination.

Fundoscopy	Frequency (N=125)	Percentage %
Hypertensive Retinopathy	24	19.2
Normal	101	80.8

DISTRIBUTION OF CASES BY DIAGNOSIS: Out of 125 patients in this study,28 patients (22.4%) had Intra cranial bleed,40 patients(32%)had Infarct/TIA,15 patients (12%)had Hypertensive heart failure,23 patients(18.4%) had Hypertensive retinopathy,17 patients (13.6%) had Chronic kidney failure and 2 patients (1.6%)had Myocardial infarction.

Diagnosis	Frequency (N=125)	Percentage%
CVA	68	54.4
Hypertensive Retinopathy	23	18.4
CKD	17	13.6
Hypertensive Heart Failure	15	12
Myocardial Infarction	2	1.6



DISTRIBUTION OF CASES BY OUTCOME: In this study 119 patients (95.2%) were discharged,5 patients expired (4%) and 1 patient (0.8%) was discharged against medical advice.

Outcome	Frequency(N=125)	Percentage%
Discharged	119	95.2
Dead	5	4
Discharged against medical advice	1	0.8

BIOCHEMICAL ANALYSIS:
Blood sugar, Electrolytes,Blood urea/creatinine; Urine routine and microscopy (for proteins/RBCS/pus cells),Lipid profile.

RADIOLOGICAL EXAMINATION
ChestXray,2DECHO, USG Abdomen/pelvis/renal Doppler, CT head plain/contrast RI brain

DISCUSSION:
The present clinical study of hypertensive emergencies in intensive care unit is done in D.Y.Patil hospital,Navimumbai during september2018-december2019 on 125patients.

SEX DISTRIBUTION:
In This study of hypertensive emergencies, we observed the number of males presenting with hypertensive emergencies were more than the number of females.92(73.6%) of the patients were males,33(26.4%) of patients are females. Martin et al in their study on hypertensive crises observed that 55% of patients were females among patients with hypertensive emergencies while males contribute for 45% of study.

AGE DISTRIBUTION:
IN this study we observed the proportions of males were higher when studying the group of morethan50 years of age. Majority of female patients belonged to the postmenopausal age. Among33females ,27 females are of postmenopausal age contributing for 81.8%, remaining18.2% are premenopausal. In study by Zampaglione et al mean age involved is 64+_15. In study by Cerrilo et al mean age involved is 60+_18.In study by Martin et al mean age involved is 54+_18.

PRESENTING COMPLAINTS:
Analyzing the presenting symptoms, the largest group of patients in the present study, presented with a neurological deficit (54.4%) followed by dyspnoea(23.2%), blurringofvision(10.4%), headache(8.8%), chestpain (1.6%). This was similar to the study by Martinetal, whoin their study found presenting symptoms of neurological deficit. Zampglione et al in their study had more patients presenting with chest pain (27%) followed by dyspnoea (22 %) and neurological deficits(21%).In this study neurological deficits varied from hemiparesis (98.5%), altered sensorium (1.5%). In study by Tomero et al most common presentation is chest pain followed by headache, dyspnea.

RENAL FUNCTION TEST:
In This study renal dysfunction in the form of raised serum urea and creatinine were seen in 17 patients (13.6%). A study by . Kasper et al study on hypertensive emergencies revealed 34% renal involvement which include medical renal parenchymal disease (20%), chronic kidney disease (12%),renovascular disease(2%).

RANDOM BLOOD SUGAR:
In this study we observed 19(15.2%) out of 125 patients presented with deranged random blood sugars. Remaining 106patients (84.8%)presented with normal random blood sugar .

FUNDOSCOPY:
In this study we observed fundoscopy revealed hypertensive retinopathy in 24patients (19.2%).In study by Shubhangi et al patients presented with normal fundus is 12% whereas hypertensive retinopathy is 88%(grade1-26%,grade2-34%,grade3-20%,grade4-8%).

COMPUTED TOMOGRAPHY/MAGNETIC RESONANCEIMAGING OF BRAIN:
In this study we observed computed tomography of the brain showed non-haemorrhagic Infarct (32%)as the commonest cause for the neurological deficit followed by intracerebral haemorrhage (20.8%).Normal computed tomography of brain/magnetic resonance imaging of brain is seen in 20.8% of patients. Computed tomography of brain/magnetic resonance imaging of brain is not done in 26.4% of patients.In study by Zampglione et al computed tomography of brain showed non-hemorrhagic infarct (24%) as commonest cause for neurological deficit followed by intracerebral hemorrhage(4.5%).

DIAGNOSIS:
Evaluation for target organ damage in patients in the this study showed CVA(Infarct, intracerebral haemorrhage and TIA)as the commonest cause (54.4%)followed by Hypertensive Retinopathy(18.4%),Chronic Kidney disease(13.6%),Hypertensive Heart failure(12%) and Myocardial Infarction(1.6%).Study by Martin et al shows CVA(56%),left ventricular failure (25 %), and acute myocardial infarction in(8%) their patients.In study by Sobrino et al target organ damage of stroke(42.3%), followed by acute coronary syndrome(33.3%), acute pulmonary edema(19%) is seen.

COMORBIDITIES:
In this study we observed patients presented with diabetes mellitus as the onlycomorbidity.19(15.2%) out of 125 patients presented with diabetes mellitus.

OUTCOME:
In this study we observed in-hospital mortality of 4% (5 patients) and 0.8% (1patient) were discharged against medical advice among these patients, the remaining were discharged.

CONCLUSION:
1.Majority of patients presenting in hypertensive emergency belonged

to the fifth and sixth decades of age.
2. Males have higher chances of developing hypertensive emergencies compared to females.
3.Known hypertensives are at a higher risk of presenting with acute target organ damage associated with hypertensive emergency.
4. Commonest mode of presentation is with a neurological deficit.
5. Acute non-haemorrhagic infarct is the commonest form of target organ damage encountered in the present study.

REFERENCES

1. Kasper, D., Fauci, A., Hauser, S., Longo, D., & Jameson, J. (2015). Harrison's Principles of InternalMedicine. New York: McGraw-Hill Education.
2. Charkraborty S. Hypertensive urgencies and emergencies. In: API Medicine Update 2017. Pp-643-649.
3. 5. Lagi A, Simone Cencetti S. Hypertensive emergencies: a new clinical approach. Clinical Hypertension(2015) 21:20 DOI 10.1186/s40885-015-0027-4
4. 7. 2003 European Society of Hypertension-European Society of Cardiology guidelines for the managementof arterial hypertension. J Hypertens 2003; 21:1011-53.
5. 8. Joint national committee on prevention detection and treatment of high bloodpressure. The seventh report of Joint national committee on prevention detectionand treatment of high blood pressure. JAMA 2003; 289: 2560-2572.
6. 10. Zamapaglione et al. Hypertensive urgencies and emergencies.i. Hypertension1996; 27: 144-147
7. Singh WG, Aslam N, Hypertensive emergencies – Hypertension an internationalmonogragph 2001; 350. IJPC.
8. 25. Martin J et al: Arquivos Brasileiros de Cardiologia - Volume 83, No 2, August2004.
9. 26. Sobrino J et al. prevalence, forms of clinical presentation and treatment of arterialhypertension at an emergency unit. Rev Cli Esp; 187 (2):56-60 June.
10. 32. Cerrillo MR et al hypertensive crises. prevalence and clinical aspects. Rev Cli Esp2002; 202: 255-8
11. 37. Kaplan NM. Hypertensive crisis in: Kaplan NM, ed. clinical hypertension, 8 thi. edition, Lippincot Williams and Wilkins 2002; 339-356.