Original Research

Evaluation of clinical profile of patients with hypotension visiting tertiary care Hospital: A clinical study

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ABSTRACT:
Background: Hypotension is a decrease in systemic blood pressure below accepted low values. Hypotension is commonly encountered problem these days. Hence; the present study was planned for evaluating the clinical profile of hypotension among patients visiting tertiary care center. **Materials & methods:** 189 Hypotensive patients were enrolled in the present study. Complete demographic profile of all the patients was obtained. A master chart was prepared and detailed clinical history and profile of all the patients was recorded. Past medical history and past family history of all the patients was also obtained. Assessment of clinical profile of hypotension was done in separate Microsoft excel sheets. All the results were analyzed by SPSS software. **Results:** Palpitations were found to be present in 53.44 percent of the patients. Rapid breathing and blurred vision was found to be present in 49.74 percent and 47.09 percent of the patients respectively. Cold, pale skin and depression was found to be present in 39.68 percent and 32.27 percent of the patients respectively. **Conclusion:** Hypotension is most commonly asymptomatic. However, if symptoms become apparent, the most common are palpitations, blurred vision or dizziness.
Key words: Clinical, Hypotension, Profile.

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INTRODUCTION

Hypotension is a decrease in systemic blood pressure below accepted low values. While there is not an accepted standard hypotensive value, pressures less than 90/60 are recognized as hypotensive. Hypotension is a relatively benign condition that is under-recognized mainly because it is typically asymptomatic. It only becomes a concern once pumping pressure is not sufficient to perfuse key organs with oxygenated blood.[1-3] Blood pressure is continuously regulated via the autonomic nervous system as a balance of the sympathetic nervous system and the parasympathetic nervous system. The sympathetic nervous system acts to raise blood pressure by increasing heart rate and constricting arterioles. The parasympathetic nervous system lowers blood pressure by decreasing heart rate and relaxing arterioles to increase vessel diameter. Hypotension is commonly encountered problem these days.[4,5] Hence; the present study was planned for evaluating the clinical profile of hypotension among patients visiting tertiary care center.

MATERIALS & METHODS

The present study was conducted in the department of internal medicine of the medical institute and it included assessment of clinical profile of hypotension among patients visiting tertiary care center.

Sample size: 189 Hypotensive patients

Ethical clearance: Obtained from ethical committee of the institution. Written consent was obtained from the all the patients after explaining in detail the entire research protocol.

Criteria for defining hypotension: Systolic/diastolic BP <110 and/or 70 mm Hg

Inclusion criteria: Patients diagnosed as suffering from hypotension, patients within the age group of 30 to 60 years, patients who gave informed consent.

Exclusion criteria: Diabetic patients, patients with positive history of any other systemic illness.

Methodology: Complete demographic profile of all the patients was obtained. A master chart was prepared and detailed clinical history and profile of all the patients was recorded. Past medical history and past family history of all the patients was also obtained. All the patients were divided into various socioeconomic classes as follows based on modified Kuppuswamy as follows: Upper class, middle class and lower class.[5]

Statistical analysis: Assessment of clinical profile of hypotension was done in separate Microsoft excel sheets. All the results were analyzed by SPSS software. Chi-square test was used for assessment of level of significance.

In the present study, a total of 189 hypotensive were analyzed in the present study. 72 patients were between the age group of 40 to 50 years, while 65 patients were between the age group of 50 to 60 years. Mean age of the hypotensive patients of the present study was 48.3 years. 96 patients in the present study were males while the remaining 93 patients were females. 44.44 percent of the patients of the present study belonged to lower socio-economic class. 31.75 percent of the patients belonged to middle socio-economic class. Non-significant results were obtained while assessing the age-wise and gender-wise distribution of patients.

In the present study, palpitations were found to be present in 53.44 percent of the patients. Rapid breathing and blurred vision was found to be present in 49.74 percent and 47.09 percent of the patients respectively. Cold, pale skin and depression was found to be present in 39.68 percent and 32.27 percent of the patients respectively.

RESULTS

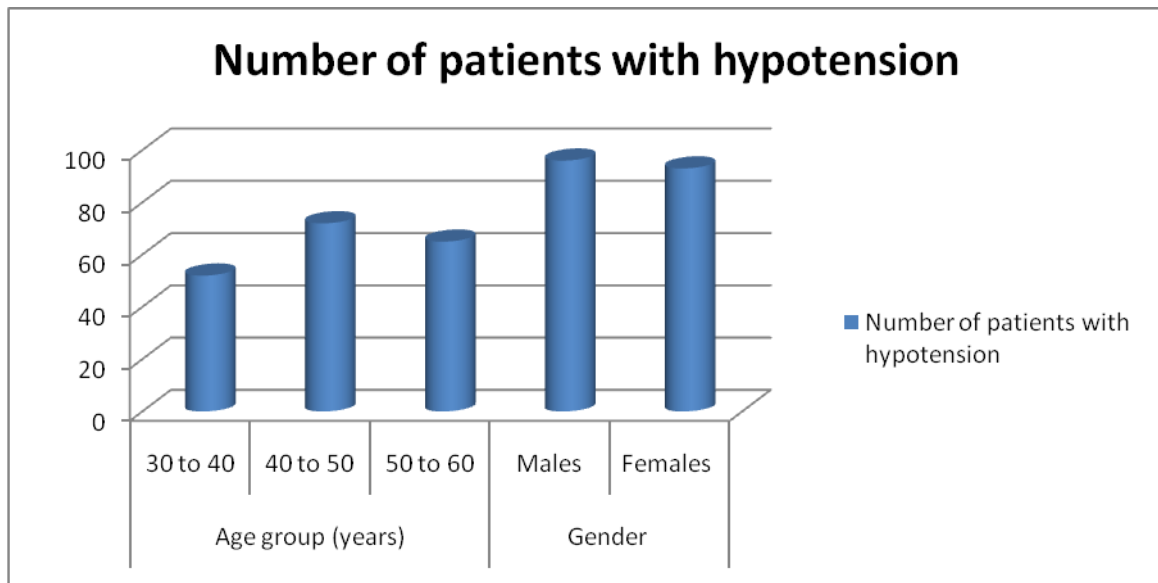**Graph 1:** Age-wise and gender distribution of patients with hypotension

Table 1: Distribution of patients according to socioeconomic status

Socioeconomic status	Number of patients	Percentage	p- value
Upper class	45	23.81	0.46
Middle class	60	31.75	
Lower class	85	44.44	
Total	189	100	

Table 2: Clinical profile of the patients with hypotension

Clinical profile	Number of patients	Percentage
Blurred vision	89	47.09
Cold, pale skin	75	39.68
Depression	61	32.27
Dizziness, nausea	42	22.22
Palpitations	101	53.44
Rapid breathing	94	49.74

Graph 2: Clinical profile of the patients with hypotension
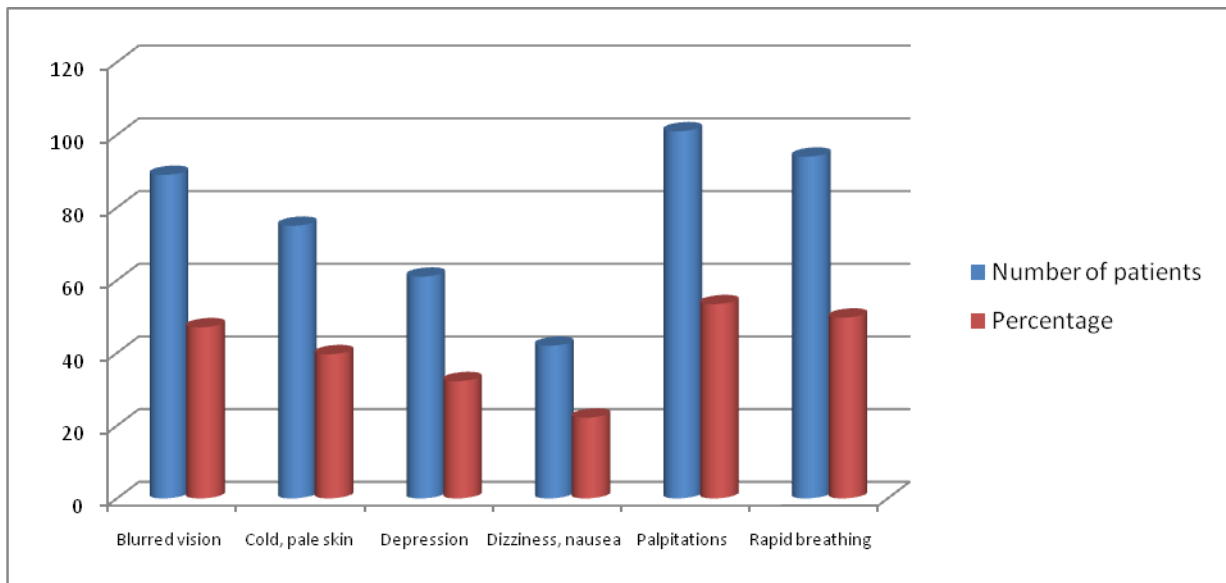
DISCUSSION

A fall in arterial blood pressure results in failure to perfuse the systemic capillary networks. Compensatory reflexes usually prevent this situation and awareness of these mechanisms helps in understanding the causes and management of hypotension.[5, 6]Hypotension leads to symptoms impacting the quality of life of a patient. Hypotension is classified based on the biometric parameters of the blood pressure measurement. It may be absolute with changes in systolic blood pressure to less than 90 mm Hg or mean arterial pressure of less than 65 mm Hg. It may be relative to a decrease in diastolic blood pressure to less than 40 mm Hg. It may be orthostatic with a decrease in systolic pressure or 20 mm Hg or greater or a decrease in diastolic pressure of 10 mm Hg or greater on positional change from lying to standing. It may be profound which is defined as being medication-dependent. In acute conditions, the hypotensive shock is a possible and life-threatening condition.[7, 8]Advanced practice nurses are responsible for diagnosing and treating patients with acute onset hypotension. The potential diagnostic hypotheses for hypotension are related to a wide variety of pathophysiologic processes. Developing the differential diagnosis for acute onset hypotension involves making a series of clinical decisions in a stepwise manner. The clinician bases these decisions on information contained in a subjective and objective database and on recognizing patterns in the central findings.[9, 10] Hence; the present study was planned for evaluating the clinical profile of hypotension among patients visiting tertiary care center.

In the present study, a total of 189 hypotensive were analyzed in the present study. 72 patients were between the age group of 40 to 50 years, while 65 patients were between the age group of 50 to 60 years. Mean age of the hypotensive patients of the present study was 48.3 years. 96 patients in the present study were males while the remaining 93 patients were females. 44.44 percent of the patients of the present study belonged to lower socio-economic class. 31.75 percent of the patients belonged to middle socio-economic class. Non-significant results were obtained while assessing the age-wise and gender-wise distribution of patients.Divisón-Garrote JAdetermined the prevalence of hypotension and factors associated with the presence of this condition in treated hypertensive patients undergoing ambulatory blood pressure monitoring (ABPM). Data were taken from the Spanish ABPM Registry. Office blood pressure (BP) and ABPM were determined using validated devices under standardized conditions. A total of 70,997 hypertensive patients on treatment (mean age 61.8 years, 52.5% men) were included in the study. The prevalence of hypotension was 8.2% with office BP, 12.2% with daytime ABPM, 3.9% with nighttime ABPM, and 6.8% with 24-hour ABPM. Low diastolic BP values were responsible for the majority of cases of hypotension. Some 68% of the hypotension cases detected by daytime ABPM did not correspond to hypotension according to office BP. The variables independently and consistently associated with higher likelihood of office, daytime, and 24 hour-based hypotension were age, female gender, history of ischemic heart disease, and body mass index <30 kg/m(2) (P < .05). In conclusion, in their large cohort of patients in usual daily practice, one in eight treated hypertensive patients are at risk of hypotension according to daytime BP. Two-thirds of them are not adequately identified with office BP. ABPM could be especially helpful for identifying ambulatory hypotension, in particular in patients who are older, women, or with previous ischemic heart disease where antihypertensive treatment should be especially individualized and cautious.[11]

In the present study, palpitations were found to be present in 53.44 percent of the patients. Rapid breathing and blurred vision was found to be present in 49.74 percent and 47.09 percent of the patients respectively. Cold, pale

skin and depression was found to be present in 39.68 percent and 32.27 percent of the patients respectively. In a previous study, the prevalence of hypotension and associated demographic and clinical factors among very old treated hypertensive patients undergoing Ambulatory BP monitoring (ABPM) was assessed by Divisón-Garrote JA et al. Office BP and 24-hour ambulatory BP were determined using validated devices under standardized conditions. Overall, 22.8% of patients had office hypotension, 33.7% daytime hypotension, 9.2% nighttime hypotension, and 20.5% 24-hour ABPM hypotension. Low diastolic BP values were responsible for 90% of cases of hypotension. In addition, 59.1% of the cases of hypotension detected by daytime ABPM did not correspond to hypotension according to office BP. The variables independently associated with office and ABPM hypotension were diabetes, coronary heart disease, and a higher number of antihypertensive medications. One in 3 very elderly treated hypertensive patients attended in usual clinical practice were potentially at risk of having hypotension according to daytime ABPM. More than half of them had masked hypotension; that is, they were not identified if relying on office BP alone.[12]

CONCLUSION

From the above obtained results, the authors concluded thatHypotension is most commonly asymptomatic. However, if symptoms become apparent, the most common are palpitations, blurred vision or dizziness. Therefore; we recommended further studies in future.

REFERENCES

1. Shand BI. Changes in blood rheology induced by lactic acid. Procedings of the University of Otago Medical School 1986;64: 71-2.
2. Yamada H, Doi K, Tsukamoto T, Kiyomoto H, Yamashita K, Yanagita M, Terada Y, Mori K. Low-dose atrial natriuretic peptide for prevention or treatment of acute kidney injury: a systematic review and meta-analysis. Crit Care. 2019 Feb 11;23(1):41.
3. Feng Y, Huang R, Kavanagh J, Li L, Zeng X, Li Y, Fu P. Efficacy and Safety of Dual Blockade of the Renin-Angiotensin-Aldosterone System in Diabetic Kidney Disease: A Meta-Analysis. Am J Cardiovasc Drugs. 2019 Jun;19(3):259-286.
4. Bullock B, Benham MD. StatPearls [Internet]. StatPearls Publishing; Treasure Island (FL): Feb 7, 2019. Bacterial Sepsis.
5. Wani RT. Socioeconomic status scales-modified Kuppuswamy and UdaiPareekh's scale updated for 2019. J Family Med Prim Care. 2019 Jun; 8(6): 1846–1849.
6. Hravnak M1, Boujoukos A.Hypotension.AACN Clin Issues. 1997 Aug;8(3):303-18.
7. Althunayyan SM. Shock Index as a Predictor of Post-Intubation Hypotension and Cardiac Arrest; A Review of the Current Evidence. Bull Emerg Trauma. 2019 Jan;7(1):21-27
8. Sharma S, Bhattacharya PT. Hypotension. [Updated 2019 Jun 20]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2019 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK499961/
9. Raina R, Lam S, Raheja H, Krishnappa V, Hothi D, Davenport A, Chand D, Kapur G, Schaefer F, Sethi SK, McCulloch M, Bagga A, Bunchman T, Warady BA. Pediatricintradialytic hypotension: recommendations from the Pediatric Continuous Renal Replacement Therapy (PCRRT) Workgroup. Pediatr. Nephrol. 2019 May;34(5):925-941.
10. Cohen ME, Consolazio F, Johnson RE. Blood lactate response during moderate exercise in neurocirculatory asthenia, anxiety neurosis or effort syndrome. J Clin Invest 1947;26: 339-42.
11. Divisón-Garrote JA1, Banegas JR2, De la Cruz JJ3, Escobar-Cervantes C4, De la Sierra A et al. Hypotension based on office and ambulatory monitoring blood pressure. Prevalence and clinical profile among a cohort of 70,997 treated hypertensives. J Am SocHypertens. 2016 Sep;10(9):714-23.
12. Divisón-Garrote JA1, Ruilope LM2, de la Sierra A3, de la Cruz JJ4, Vinyoles E5, Gorostidi M et al. Magnitude of Hypotension Based on Office and Ambulatory Blood Pressure Monitoring: Results From a Cohort of 5066 Treated Hypertensive Patients Aged 80 Years and Older. J Am Med Dir Assoc. 2017 May 1;18(5):452.e1-452.e6.