



A CROSS SECTIONAL TO MEASURE THE PREVALENCE RATE OF ORTHOSTATIC HYPOTENSION AMONG HOSPITALIZED PATIENTS IN SELECTED HOSPITALS IN GUJARAT

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ABSTRACT The Researcher main objectives of the study were to measure the prevalence of the orthostatic hypotension among hospitalized patients. Multiple databases were searched focusing on multiple factors are affected for the orthostatic hypotension such as the hypertensive drugs, alcohol consumption, and hospital stay etc. It was concluded through this literature review that orthostatic hypotension is present on hospitalized patients with other factors.

KEYWORDS : Orthostatic Hypotension, Blood Pressure Measurement.

INTRODUCTION:

Another name of the orthostatic hypotension called as postural hypotension. its from the LBP and its happen when standing Position form sitting or lying Positions. cause including some medication like a beta blockers, hypertensive drugs, anti depressants and disease like a Parkinson disease cardiac disease etc. symptoms of the Orthostatic hypotension in that person can feel giddy or lightheaded and even dehydration, faint, weakness, nausea, blur vision.

REVIEW OF LITERATURE:

1. Al-juboori AN, Jubair IS and Abdullah KS conducted a cross sectional study on prevalence of OH among outpatients clinic with common factors in zheen international hospital, Iraq (2016). The main purpose of the study was to evaluate the prevalence of OH among commonest problems which are affected for the OH. Orthostatic hypotension means decrease the diastolic blood pressure 10 mm/hg and decrease the systolic hypotension 20mm/hg within 3 minute of stand up position compared with the sitting position and laying down position. The study was started in 2015 and completed in 2016. In this study mainly 600 patients are selected in this study. 294 females and 306 males and the age limit is 25-80 years. Blood pressure is measured by the standard sphygmomanometer. In that 90 (15%) patients had a history of OH, 42 patients (7%) had history of diabetes mellitus and neurological disorders and 78 patients (13%) had history of ischemic disease and other cardiac disease and hypertension, and 24 patients had history of antihypertensive (4%) and other drugs. The total prevalence rate of the orthostatic hypotension is 15%. Thus the study concluded is, DM, ischemic diseases, cardiac diseases and hypertensive drugs and other and old age this common factors are affected for the OH^[1]
2. Zhou, yu PhD; ke, Su-jie MD; Qiu, xiao-ping MS, conducted research on a systematic review and meta analysis on Prevalence, prognosis and risk factors of OH in diabetic patients (2017). The main objective of the study was quantitatively to estimate the risk factor and prevalence of the OH in patients who are diagnosed with the DM and its prognosis. In this article 21 study analysis are includes, with the 13,772 total number of sample. In that the researcher found the data from the , comprehensive search for the pubmad, national knowledge infrastructure and Enbase ,VIP Chinese journal, SINOMAD and wanfang and other manual searched studies are involved according to the inclusion criteria in the year of 2016. Through the meta analysis data of risk factors and prevalence of the OH was calculated. The study shows prevalence of orthostatic hypotension in diabetes mellitus is 25%. Thus the study concluded that potential risk factors of orthostatic hypotension that is hypertension and neuropathy glycosylated haemoglobin A, were significantly associated with the orthostatic hypotension in DM. And its prognosis of orthostatic hypotension with higher risk of cardiovascular event and total mortality.^[2]
3. Enwonwu Kenekukwu, Ibeh Christian, Modebe Ifeoma conducted a cross sectional study on Prevalence of OH in the ageing in Anambra. Prevalence of OH in the Elderly in Anambra State in the year of 2018. The main goal of the study was to measure the prevalence of the OH in older people who are in community Nigeria in this study 600 older people are involved (60 years). The sample will collected through the multistage sampling method. Blood pressure was measured by the standard mercury sphygmomanometer. The data was collected through the interview and semi structured questionnaire method. Data analysis was calculated by the statically package of SPSS software version 21. The study shows that Total prevalence of orthostatic hypotension was (14.8%) and incidence of the orthostatic hypotension in diabetes, hypertension raised in diastolic supine and raised in systolic supine. Diabetes and hypertension is most common causes of OH. Thus the study concluded that prevalence of the orthostatic hypotension in old adults (60 year) were very high found in hypertension and diabetes^[3]
4. A Illman ,k. Stillier and M Williams conducted a observational and prospective study on The prevalence of OH throughout the physiotherapy treatment in patients with an acute spinal cord injury in the year of 2000 in Royal Adelaide Hospital, spinal injuries and Hampstead Rehabilitation Centre, in South Australia. The main purpose of the study is to measure the incidence OH and its connection between the resulting during the providing physiotherapy treatment and involving this study mainly 14 of 17 consecutive patients are admitted in hospital with diagnosis of acute spinal cord injury. Non invasive measurement method is use for the data collection. In this measurement HR, SBP and SBP and O2 saturation recorded. And the observational data were analysing through the mean values. The results shows that blood pressure changes in orthostatic hypotension in mobilization treatment was 73.6%, and of these treatment ,sign & symptoms of orthostatic hypotension were found in (58.9%) occurrence, perceived treatment noted on (43.2%). Patient who are suffer with tetraplegia had a higher prevalence rate of orthostatic hypotension. Thus the study shows that the orthostatic hypotension and sign & symptoms of OH are common in physiotherapy mobilization of the patients who are suffering from the acute spinal cord injury. Mobilization of the patients and with diagnosis of spinal cord injury and sign and symptoms of SCI^[4]
- 5) Keng-He Kong (2003) A cohort study was conducted to record the incidence and outcome of the OH in stroke patients who are undergoing the rehabilitation centre and establish the clinical variables. 71 patients involved who are admitted in rehabilitation centre for the first attack of stroke, within a 4 week of stroke. 41 males and 30 females. Automatic sphygmomanometer was used to measure BP. BP was measure in laying down position on tilting 90 degree out of 3 days of admission. Statistical analysis was done by the t-test, chi-square test, and standard deviation. The study shows that orthostatic hypotension was present in total 13 patients (52.1%) who had a history of severe hypotension. And 12 patients were had positive sign of the OH and 2 patients experienced with the syncope, and OH is more significant association between older age and severe hemiparesis. Thus the study concluded that OH is most common in stroke patients who are undergoing the rehabilitation center. And suspected in older age people and who have more hemiparesis^[5]
- 6) Qing Olivia Zhu, Choon Seng Gilbert, Chinmaya Shrikant Joshi, Ravi Amran Cuttilan, conducted a on OH: prevalence and associated risk factors among the ambulatory old age people in an Asian population. The study was conducted in singapore. Elderly

- patients were contribute (27%) in this study. Age limit is >60 year. Main target group is community-dwelling, multiethnic . By the sphygmomanometer BP was measured in supine position and sitting position. Total, estimate size is 400 . data analysis by the independent t test and chai square test. results of the study is total 364 participants are involved. the total prevalence of orthostatic hypotension is 11.0%.older age, co morbidities like a kidney diseases and cardiac failure, fatigue, dizziness reports of the past year and loop diuretics are significantly association between the orthostatic hypotension. Thus the study shows that one in ten patients (older) of polyclinic affected by the orthostatic hypotension and which was association between the multiple factors^[6]
- 7) K. Potocka-Plazak I, W. Plazak conducted an experimental study on Orthostatic hypotension in elderly women with CCF in the year of October 2001 in Poland .the main purpose of the study was to assess the incidence of the OH & association symptoms in old age women who are admitted with CHF. there are mainly 2 groups are involved. 1 group 35 women's who are admitted with CHF.(age 75-100 years) and 2 control group considered 15 women's (age 71-95 years) with no any other symptoms or CHF.in that all the subjects are performed by the tilt test.(60degree tilt for the 10 min) under the standardized conditions like a after 12 hour of the administration of medication(duration between 8:00 am to 10:00pm), fasting patients. The study findings suggested that OH was found in 83.3% in Congestive heart failure patients and 43.3% women's manifested association with it. In the control group OH observed in total 53.3%.but none of them particular symptomatic. the CHF patients shows that decreased ability to develop compensatory tachycardia during the period of orthostatic hypotension. Thus the study concluded that reduction of the systolic pressure was more in Congestive heart failure patients and DBP was increases in significant control group^[7]
 - 8) Patricia Mesquita, Deborah Queiroz was conducted a cross sectional study on Prevalence of Orthostatic Hypertension in Elderly Patients with Type 2 Diabetes (2014) in Brazil. The main goal of the study was to estimate the incidence of OH in old age patient with type 2 diabetes mellitus and connection between the echocardiography and metabolic relation. Data collection period was 6 months. There are 4800 patients involved in this study. BP was measured by the automatic devise. Statically analysis done by the t-test, chai square test, ANOVA and other statistical analysis method. The study shows that prevalence of the orthostatic hypotension OH was 20.6%.there is no any significant relation between two groups. Among 68 patients who had a an endocardiographic examination 27% had a history of OH in that left atrial volume index differentiate with the who didn't had orthostatic hypotension.(p=0.0004).thus the study concluded that the prevalence of the OH higher in hypertension and lower atrial index volume^[8]
 - 9) Rahman, S.U., Ahmad, R. was conducted a study on prevalence of the OH among diabetic patients in a community hospital in Peshawar(2010). The main objective of the study was to assess the incidence of the Orthostatic +Hypotension and its relation between the patients who have a diabetes mellitus and patients with the hypertension admitted in a tertiary hospital. In this study 200 indoor patients (diabetic patients) were assessed. BP was measured in laying position and standing position with the using of standardized procedure of the orthostatic hypotension. In this study mainly two groups are involved. Patients having OH were compared with those patients who does not having OH . The results of the study show that 26 patients have orthostatic hypotension and 52% having HTN. Patients having hypertension with OH was more than those without OH. Other parameter shows different result. Thus the study concluded that OH is a more frequent in diabetic patients who are admitted in tertiary care facilities. & diabetic hypertensive patients are additional to have postural dropping in blood pressure with compared to diabetic normotensive patients^[9]
 - 10) Dr. Swarnalatha MD.I and Dr. A. Dinesh was conducted cross sectional study onto measure the prevalence of OH among bus conductor, at dispensary hospital at Tamil nadu state transportation corporation. The purpose of the study was to determine the incidence of the OH among bus conductor. There are two main purpose of the study, 1. To document the incidence of OH among bus conductors. 2. To relate the key predisposing factors for the connection. There are 40 participants included in this study.(age group 30-40). Sample was collected by systematic random sampling technique. after 5-10 minutes blood pressure was measured in laying position. The patient rise and the BP measurements are then repeated while they stand for 3-5 minute. The statistical analyses was done by the spss software. The result shows that significance of (22%) p 0.004 individuals with OH whose timing of years of service had an average of above 17 years with a age group of above (38) p 0.000. The study concluded that is an attempt to findings the incident of OH among bus conductors depends on their duration of resources , whose profession demands prolongation standing position and autonomic stability. Pharmacological medication is < successful for OH than non-pharmacological measurements^[10]
 - 11) Shanshan shen, Ting he was conducted a cross sectional study (2015) on Uncontrolled HTN and OH in relationship between to standing balance in old age hypertensive patients. The main goal of the study was to determine the affiliation between uncontrolled HTN and OH and impairment in the old age hypertensive patients referred to comprehensive geriatric assessment. Total 176 old age patients included who are underwent CGA. CGA separate in to to groups 1) OH group (n=36). 2) no OH group (n=140). By sphygmomanometer BP was measured in the laying position and after sudden standing up position and after 1 to 3 minute of standing up position. The results of the study was uncontrolled hypertension was associate with the standing balance in (p>0.05) hypertensive patients. and BP was down after the postural changes and it was associated with immediate standing up balance.(p<0.005). And patient who have orthostatic hypotension were high risk of sudden standing balance in both side by side tandem stance than without OH.(ratio 3.44,95%).thus the study concluded that uncontrolled HTN ,OH and BP was down after position changes and its connects between the quick standing balance.^[11]
 - 12) Senard JM, Raï S conducted a cross sectional study on Prevalence of OH in Parkinson's disease. The main goal of the study was to measure the incident of the OH and nature of the position changes related to fall in blood pressure with the Parkinson disease. This study was performed on patients who are visiting neuropharmacological unit. 97 patients with Parkinson's disease were participate in this study.(48 women and 43 man).in 2 positions BP was measured. 1 in supine position and after 15 min. and every minute during 10 minute of spontaneous standing up. Blood pressure was measured by the sphygmomanometer. Statistical analysis was done by the determine the association orthostatic hypotension and characteristics and anti Parkinson's drugs. The result of the shows that SBP fall at least 20 mm/hg.(58.2% patients). OH was asymptomatic (38.5%) and postural events in (19.8%) and representative OH was relate the drugs thus the study concluded that orthostatic hypotension in Parkinson's disease is higher and clinical rating scale which could be use to assess the drugs and management of the orthostatic hypotension^[12]
 - 13) Kornelis JJ van Hateren,Marco H Blanker conducted a cross sectional study on OH, diabetes, and falling in old age patients in the year of 2012 in primary care in the Netherlands. The main objective of the study was to measure the incident of the orthostatic hypotension and determine the association between the falling & dwelling older patients with the type 2 diabetes mellitus. Total 352 patients was included who have type 2 diabetes and 211 patients without involving. Data collection was done by the standard structured questionnaire method. BP was measured by the standardized digital monitor. The result shows that prevalence of the orthostatic hypotension was 28% with type 2 DM and 18 % in without type 2 diabetes mellitus. The study concluded that orthostatic hypotension is vastly present in home dwelling aging people with or without type 2 diabetes.^[13]
 - 14) Kannayiram Alagiakrishnan, Ruojin Bu, Peter Hamilton conducted an observational case control study on Comparison of the Assessment of Orthostatic Hypotension Using Peripheral and Central Blood Pressure Measurements(2018).The main objective of the study were first to measure the incident of the OH & investigate the using of PBP and CBP and level of agreement. Second the interrelation between the OH & cardiovascular co morbidities and fall. And third association between the OH with arterial wall and stiffness markers. In this study of subjects aged 50 years and above 50 was conducted. In this study no invasive technology called as sphygmocor used for the change sin CBP between laying and standing position. PBP and CBP both were measured in the bpth position laying and standing position. The

result of the study shows that 71 participants were recruited from the study, 52% were males and 32% had a history of fall and 72% had a history of hypertension. And OH present in (31%) by PBP nad 27% in CBP. AI was not different between with or without central and peripheral orthostatic hypotension. Thus the study concluded that orthostatic hypotension was similar between the PBP and CBP.^[14]

- 15) *Siti Setiati, Bambang Sutrisna, Wiguno Prodjosudjadi conducted study on* The incident of OH and its risk factors among 40 years & above adult in (2004) Indonesia. The main objective of the study was to find out the incident of OH and find out the predictor factors of the orthostatic hypotension among adult population in Indonesia. In this study random sampling was used for the data collection. There are 4436 subjects are involved in this study through the epidemiological survey (age group 40 years). Blood was measured by the standardized sphygmometer. Blood pressure was measured in mainly two positions: supine and sitting position. To determine the predictor of orthostatic hypotension a stepwise logistic regression was used. The result shows that total (12.6%) 561 persons suffered with the OH. Thus the study concluded that age is not a predictor factor for the orthostatic hypotension. And other such as hypertension is a predictor factor & anti-hypertensive medication is a protective factor.^[15]

DISCUSSION:

In this review of literatures 15 reviews have been taken by various studies on prevalence of the orthostatic hypotension. And orthostatic hypotension in different diagnosis with the signs and symptoms, such as type 2 diabetes mellitus, Parkinson's disease, cardiovascular drugs.

CONCLUSION:

Researcher measured prevalence of OH in hospitalized patients, in sitting, standing and lying position.

CONFLICT OF INTEREST: None

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ETHICAL CLEARANCE: The ethical clearance from our institute.