HYPERTENSION AS A PREDICTOR IN-HOSPITAL MORTALITY AMONG PATIENTS HAVING CONGESTIVE HEART FAILURE.

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Abstract;

Background; Hypertension remains an important risk factor which contributes towards the worsening of the outcomes, consisting of cardio-renal anemia syndrome and its impact in heart failure remains to be complex and multifactorial. The current study was done to evaluate the role of hypertension on mortality among patients having congestive heart failure. **Material and methods;** This study included a total of 115 patients with congestive heart failure presenting at Nishtar Hospital Multan. These patients were followed till discharge to document in-hospital mortality during current hospitalization. All the sociodemographic distribution and other relevant information such as age, gender, area of residence, diabetes, hypertension, obesity, smoking, hyperlipidemia and mortality were noted in the proforma and data was entered and analyzed by SPSS version 22 for descriptive statistics and tests of significance. hypertension was cross-tabulated against in-hospital mortality using two by two table and chi-square test was applied at level of significance of 0.05. **Results;** Among our 115 patients with congestive heart failure, 75 (65.2%) were males and 40 (34.8%) were females. Mean age of our patients with CHF was 57.17 ± 11.65 years ranging from 34 to 80 years. Although males were younger than female patients with congestive heart failure but this difference was not statistically significant (p=0.140). Seventy five (65.2%) were from rural areas, 40 (34.8%) were poor, 70 (60.9%) from middle income families and only 5 (4.3%) belonged to rich families. Mean body mass index (BMI) of patients with congestive heart failure was 26.12 ± 2.93 kg/m^2 and 35 (30.4%) were obese. Twenty five (21.7%) were smokers. Forty five (39.1%) had diabetes and 55 (47.8%) had hypertension. In-hospital mortality in patients with congestive heart failure was 12 (10.4%) and of these 12 mortalities, hypertension was noted in 11 (92 %) patients. **Conclusion;** Our study results have documented high frequency of hypertension among patients with congestive heart failure and hypertension was significantly associated with in – hospital mortality.

Keywords; Congestive Heart Failure, hypertension, in-hospital mortality.

Introduction;

Cardiovascular diseases are the leading cause of mortality all over the world [1-3], particularly in developing countries as the mortality rates among developed nations have dropped down significantly due to the availability of the healthcare facilities and advancements in techniques owing to patient care [4-5]. Heart failure is associated with significant medical, financial, psychological and societal burden with high rates of emergency department admissions[6]. In USA, due to the heart failure (as a primary or secondary diagnosis), approximately more than 2.6 million patients get hospitalized every year and increase cost of healthcare budget enormously [7]. Congestive heart failure is a common health issue with high rates of mortality, emergency department/hospital admissions, reduced physical activity, poor productivity, loss of work and poor quality of life of the patients [8-10]. There are other modifiable as well as non-modifiable factors which lead to the worsening of the conditions of the patient and poor prognosis in addition to direct impact of congestive heart failure [11-13]. Anemia is also a major cause of disease morbidity, poor quality of life and productivity, reduced physical activity and is common entity among heart failure patients, hence representing a modifiable risk factor for poor prognosis and adverse clinical outcomes. It is also a strong predictor for the burden of related co-morbidities and for increased severity of the disease.

Hypertension remains an important risk factor which contributes towards the worsening of the outcomes, consisting of cardio-renal anemia syndrome and its impact in heart failure remains to be complex and multifactorial [13-15].

Owing to role of hypertension in congestive heart failure in worsening of the condition and poor prognosis of the patients, this study was conducted to evaluate role of hypertension in CHF in Southern Punjab. This study was done to determine the role of hypertension associated with mortality to generate evidence on this topic as there is limited data on this topic from Pakistan.

Material and methods;

This study included a total of 115 patients with congestive heart failure presenting at Nishtar Hospital, Multan. Congestive Heart failure patients more than 20 years of age were included and CHF was defined as "patients having shortness of breath having Killip class I-IV (class I=no cracles, class II=JVP, class III=pulmonary edema, class IV=cardiogenic shock) and swelling of legs (assessed on clinical judgment by 2-3 minutes pressing of medial malleolus, if pit develops it was taken as positive) for more than 1 month (presence of all) which is consistent with echocardiographic findings (percentage of blood ejected with each beat – less than 50 – 75%" while patients having any malignancy, chronic obstructive pulmonary disease, poor intake and CABG were excluded. These patients were followed till discharge to document in-hospital mortality during current hospitalization. All the sociodemographic distribution and other relevant information such as age, gender, area of residence, diabetes, hypertension, obesity, smoking, hyperlipidemia and mortality were noted in the proforma and data was entered and analyzed by SPSS version 22 for descriptive statistics and tests of significance. Anemia was cross-tabulated against in-hospital mortality using two by two table and chi-square test was applied at level of significance of 0.05.

Results;

Among our 115 patients with congestive heart failure, 75 (65.2%) were males and 40 (34.8%) were females. Mean age of our patients with CHF was 57.17 ± 11.65 years ranging from 34 to 80 years. Although males were younger than female patients with congestive heart failure but this difference was not statistically significant (p=0.140). Seventy five (65.2%) were from rural areas, 40 (34.8%) were poor, 70 (60.9%) from middle income families and only 5 (4.3%) belonged to rich families. Mean body mass index (BMI) of patients with congestive heart failure was 26.12 ± 2.93 kg/m^2 and 35 (30.4%) were obese. Twenty five (21.7%) were smokers. Mean hemoglobin level of these patients was 11.36 ± 2.55 d/dl ranging from 6.6 to 14.7 g/dl and anemia was documented in 60 (52.2%) our patients. Forty five (39.1%) had diabetes and 55 (47.8%) had hypertension. In-hospital mortality in patients with congestive heart failure was 12 (10.4%) and of these 12 mortalities, hypertension was noted in 11 (92 %%) patients (p = 0.005).

Discussion;

Hypertension remains an important risk factor which contributes towards the worsening of the outcomes, consisting of cardio-renal anemia syndrome and its impact in heart failure remains to be complex and multifactorial [16-17]. Among our 115 patients with congestive heart failure, 75 (65.2%) were males and 40 (34.8%) were females. Silverberg et al [18] documented 79 % male patients having congestive heart failure, in compliance with our study results. Dai et al [19] has also reported similar results. Rasheed et al [20] reported 88% male patients with congestive heart failure showing compliance with our findings. Khan et al [21] reported 60 % male gender predominance in patients with CHF which are close to our study results. Nasir et al [22] reported male gender preponderance with 65 % which is close to our study results.

Mean age of our patients with CHF was 57.17 ± 11.65 years ranging from 34 to 80 years. Although males were younger than female patients with congestive heart failure but this difference was not statistically significant (p=0.140). Rasheed et al [20] reported 50.77 ± 7.53 years mean age which is close to our study results. Nasir et al [22] reported 60 ± 13 years mean age which is similar to that of our study results. Vim et al [23] from Iran also reported 61 years mean age of the patients with congestive heart failure (CHF) which is close to our study results.

Mean body mass index (BMI) of patients with congestive heart failure was 26.12 ± 2.93 kg/m^2 and 35 (30.4%) were obese. Twenty five (21.7%) were smokers. Forty five (39.1%) had diabetes and 55 (47.8%) had hypertension and hypertension was significantly associated with in – hospital mortality (p = 0.005). Silverberg et al [18] reported diabetes in 30 %, hypertension in 64% and smoking in 40 % patients. These findings are close to our study results. Dai et al [19] reported similar results.

Conclusion;

Our study results have documented high frequency of hypertension among patients with congestive heart failure. In-hospital mortality was significantly associated with hypertension.

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