

## The Brief Study on AHF at Government Hospital Madhya Pradesh Chhatarpur District; Treatment Outcomes among Patients

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### Abstract

**Background:** Acute Heart failure is very serious condition it required hospital and emergency ward. The aim of this critical Review to evaluate treatment and outcomes and predict a poor treatment outcome in acute heart failure patients at City Chhatarpur Madhya Pradesh.

**Methods:** A randomized prospective study is designed on the basis of data were collection by using questionnaire as a tool. Outcomes variables were assessed at the time patient discharge from the Chhatarpur Hospital. Multivariate and Bivariate used as tool logistic analysis were used to determine factors that show in Hospital mortality. P Value<0.05 was significant statistically.

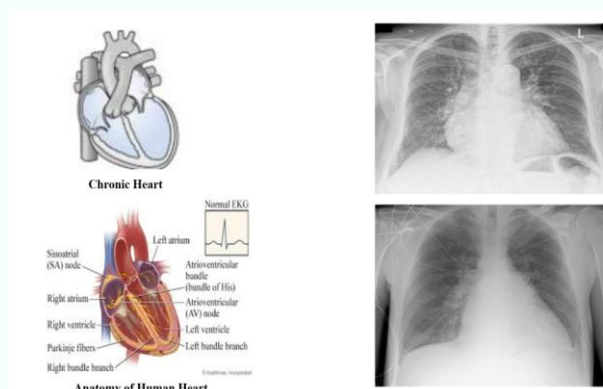
**Results:** Out of the 200 patients, the median age of patients with acute heart failure 40 years (IQR = 23 to 50) and median hospital stay was 4.0 days (IQR = 5.0 to 7.0). The leading precipitating factor and underlying disease at the time of admission were pneumonia (33.5%) and chronic rheumatic heart disease (55.5%), respectively. The in hospital mortality was found to be 24.2%. Smoking (adjusted odds ratio (AOR) = 5.7, p = 0.009), diabetes mellitus (AOR = 10.2, p = 0.008), pulmonary hypertension (AOR = 4.3, p = 0.027), and the presence of adverse drug events (AOR = 4.2, p =0.009) were predictors of in-hospital mortality.

**Conclusion:** High in-hospital mortality was observed among acute heart failure patients admitted to a Government Chhatarpur Hospital. Smoking, diabetes mellitus, pulmonary and the presence of adverse drug events were predictors of in-hospital mortality.

**Abbreviations:** AHF: Acute heart failure, PDT: Patient Drug Therapy

**Keywords:** Acute heart failure, In-hospital mortality, Predictor of mortality, Chhatarpur

### Pictorial Abstract:



## 1. INTRODUCTION

Acute heart failure (AHF) is a rapid onset of new or worsening of signs and symptoms of heart failure (HF) that is associated with elevated plasma levels of natriuretic peptides. AHF syndromes manifest as new on set 'de novo' or recurrence of acute decompensate heart failure (ADHF) requiring emergency treatment and hospitalization. The incidences of AHF vary in the different part of the world. Its increasing incidence is due to an increasing aging, population, complications arising from cardiovascular diseases like acute coronary syndrome (ACS) and increasing prevalence of lifestyle- related risk factors. AHF patients who attended at hospitals in Africa are young and have severe symptoms due to late presentation. Thus, we should address the young people who are affected by the burden of an acute attack of HF. These younger age group had a significant impact on the economy of the society Adherence to medication predicts health outcomes. Failure to adhere to HF medication was associated with poor treatment outcomes. Patients should receive appropriate therapy as early as possible to achieve good treatment outcomes. Evaluating reasons for hospitalization in AHF is important to give due attention to precipitating factors. The study conducted by Blecker Set.al has shown hospitalized AHF patients didn't receive appropriate therapy besides worsening, AHF was common in hospitalized patients and it was associated with higher mortality rates.



**Figure1:** Acute heart failure (AHF)

Limited studies and literatures are available in India and other developing countries that describe the clinical characteristics, management, and treatment outcome of AHF

patients. Therefore, the present study could provide valuable insights to the patient's treatment outcome and predictors of in- hospital mortality among patients hospitalized with AHF in Chhatarpur Madhya Pradesh India.

## 2. METHODS

Study design and setting a hospital-based prospective observational study design was used. The study was conducted from April 20 to August 12, 2019, through a structured data abstraction tool. This study was conducted at Chhatarpur Government Hospital, Madhya Pradesh India. It was multispecialty Hospital in whole district. It have 800 beds and serves about 520,000 to 122 450 approximately patients in year in our patients and in patients respectively the emergency Department provides the service to about 43,000 patients in year on average 88 patients per day approximately. All patients admitted to the hospital with diagnosis of Acute Heart failure during the Study period were recruited

### 2.1. Data Collection

The data abstraction tool included socio-demographic characteristics, clinical features, laboratory data, precipitating factors, underlying diseases, co-morbidity, imaging studies, treatments given and hospital stay. The treatment outcome was assessed at the time of discharge from the hospital. Ethical clearance was obtained from the Ethical Review Committee of School of Pharmacy, NTR Pharmacy College (Ref. no ERB/MP/20/09/2019). Permission was also obtained from the Department of Internal Medicine, School of Medicine, College of Health Sciences, Chiara University. Informed oral consent was obtained from patients and for those whose age was < 18 years consent as well as assent was obtained from guardians.

### 2.2. Data Analysis

Findings were presented as mean  $\pm$  (SD) for normal distributed, otherwise median (inter-quartile range) for non-normal distributed variables. Categorical variables were reported as percentages and frequency Tables. A chi-square test was used for categorical variables. Bivariate and multivariate logistic regression was used to analyze factors that predict poor treatment outcomes, and variables whose p-values < 0.2 in the univariate analysis were included in the multivariate model. The level of significance was chosen at p-value  $\leq$ 0.05 and results were

reported as 95% confidence intervals. For all statistical analysis Statistical Package for Social Sciences (SPSS version 20) was used.

### 2.3 Data Quality Assurance

One day training was given for data collectors on the importance, objectives, and method of data collection. There was on-going supervision by the principal investigator. A pre-test was done on 20 consecutive patients to assure clarity, avoidance of ambiguity, comprehensiveness and content uniformity.

### 2.4. Operational Definitions

Acute heart failure: sign and symptoms of new-onset of HF and/or decompensation or worsening of chronic stable HF; Adverse drug events: - any injury occurring at the time of involved PDT [Patient Drug Therapy] outcomes in form unsuitable and from appropriate care ; suboptimal care vice versa .

### 2.5. Guidelines on the Basis of Evidence

Trending Approaches of recurring health management problems that aimed at low

**Table:** Socio-demographic characteristics of acute failure patient admitted to Government specialized Hospital, Chhatarpur between April 20 to August 12, 2017 (n= 200)

Variable	Description	Frequency (%)
Residence	Urban	120 (71.0)
	Rural	49 (29.0)
Education	No formal education	30 (17.8)
	Primary school	71 (42.0)
	Secondary school	30 (17.8)
	Higher education	38 (22.5)
Marital status	Married	104 (61.5)
	Single	54 (32.0)
	Divorced	7 (4.2)
	Widowed	4 (2.4)
Gender	Female	92 (54.4)
	Male	77 (45.6)
Smoking	Yes	No
	No	No
Alcohol intake	Yes	15 (8.9)
	No	No
Alcohol intake	Yes	16 (9.5)
	No	153 (90.5) (4.2)
	Widowed	4 (2.4)
Gender	Female	92 (54.4)
	Male	77 (45.6)
Smoking	Yes	9 (5.3)

### 4. LIMITATIONS

The present study has the following limitations. This Critical Review Designed and Study is carried in one center with small sample size respectively. In addition, measurements on biomarkers and laboratory values like BNP,

Practice variability to improving health outcomes.

### 2.6. Smoker

Those who are current smokers and had a history of smoking in the last 2 month only; in appropriate dose: - defined according to Indian Society of Cardiology of Acute Heart failure in the first 72 hours as a reference

### 3. RESULTS

Socio-demographic characteristics from a total of 200 AHF patients admitted to the emergency and medical wards of Chhatarpur Government Specialized Hospital between April 20 to August 12, 2019; 20 patients declined to participate and a total of 200 patients who were diagnosed with AHF were included in the study. Of these, 120 (80.0%) patients are urban residents; 104 (40.5%) were married; and 92 (54.4%) of the patients were females. of the 200 patients, nine (6.3%) were smokers and 19(7.5%) of the patients were readmitted during the study period (Table 1).

NTproBNP, high sensitive C-reactive protein and uric acid were not available in this study that could be used significantly to predict the outcome of Acute Heart failure Besides measurement on cardiac troponin, creatine kinase-MB and BUN were not obtained fully.

## 5. CONCLUSION

High in-hospital mortality rate (22.2%) was observed among acute heart failure patients admitted to a Government Hospital in Chhatarpur. Chronic RHD and pneumonia were the leading underlying disease and precipitating factors found in patients admitted with AHF, respectively. Smoking, diabetes mellitus, pulmonary hypertension and the presence of adverse drug events were predictors of poor treatment outcomes. Due attention should be given to co-morbid diseases while patients presented with AHF syndromes. Clinicians should also pay more attention to the management of adverse drug events.

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