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RESEARCH ARTICLE

TREATMENT OUTCOME OF HEART FAILURE PATIENTS ADMITTED IN KEMISSIE GENERAL HOSPITAL, NORTHEAST ETHIOPIA: RETROSPECTIVE STUDY

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Abbreviations

HF: heart failure;
NYHA: New York Heart Association;
SPSS: Statistical package for social sciences

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ABSTRACT

Background: Heart failure is the inability of the heart to maintain adequate circulation to meet tissue needs for oxygen and nutrient. Heart failure is a public agenda due to increase of its prevalence, significant morbidity, high mortality and rapidly expanding health care cost worldwide.

Objective: To assess treatment outcome of heart failure patients admitted in kemissie general hospital from January 1, 2017 to May 28, 2019.

Method: Institutional based two years and five months retrospective cross sectional study was conducted from January 1, 2017 to May 28, 2019. All heart failure patients card which had clear outcome were included in the study. The data source was hospital medical records to collect necessary variables. The data was analyzed by using SPSS and described in frequency tables and graphs.

Result: 300 heart failure patient cards were retrieved. Among these heart failure patients 33 (11%) were died and 267(89%) of them were improved at discharge. Among died patients 17 (5.7%) of their serum of creatinine level was not documented. From those died 27(9%) were New York heart association class four.

Conclusion: High numbers of heart failure patients were died. Therefore health workers should strictly follow their patients and proper documentation also mandatory. In-depth further research also recommended by using primary data.

INTRODUCTION

Heart failure is major public health problem throughout the worldwide. The available data suggest that the morbidity due to HF is great in many parts of the world and there are different risk factors (Khatibzadeh *et al.*, 2013). The most commonly reported etiologies of HF are ischemic heart disease, hypertension, cardiomyopathies, rheumatic heart disease, valvular heart disease and congenital heart disease (Agbor *et al.*, 2018; Callender *et al.*, 2014; Tantchou *et al.*, 2011; Damasceno *et al.*, 2012). Around 26,000,000 people living with HF worldwide. Furthermore, HF create stresses on patients, families, health care providers and healthcare systems (Ponikowski *et al.*, 2014). HF responsible for more than 30% of hospital admission in specialized cardiovascular units and 3%–7% in general internal medicine ward (Kengue *et al.*, 2018). HF is a frequent disease and become severe condition in Africa continent but limited advanced diagnostic procedure like echocardiography to confirm the diagnosis and its etiology so that it was the reason for 5.77% of all hospital admissions and overall mortality was 9.03% (Kingue *et al.*, 2005). In Ethiopia HF is a common problem with high morbidity and mortality as 71% of patients who died from heart failure were died within four years of diagnosis and majority of HF patients had sever deficit of knowledge related to heart failure and

behaviors of self-care (Zeru, 2018; Sewagegn *et al.*, 2015). In our study area there is no studies on treatment outcome of HF so that we tried to investigate outcome of HF in Kemissie general hospital in order to indicate measures to be taken based on the result.

METHODS AND MATERIALS

Study design, setting and period: A retrospective cross-sectional study design was conducted in Kemissie general hospital which is located at a distance of 332km in Northeast direction of Addis Ababa from January 1, 2017 to May 28, 2019.

Subjects: All HF patients card which had clear outcome from January 1, 2017 to May 28, 2019 were included in the study. Patients whose diagnoses of HF were not definitive were excluded from the study.

Data collection instruments and procedures: The data source for the study was hospital medical record review (history & summary of patient card) record. Data was collected by using data collection format prepared to include all the necessary variables on the patient card.

Training was given for data collectors and supervisor regarding the study, the questionnaire and data collection procedure by investigators. First all HF cases was counted from log book. Then by using these card numbers charts of the patients were retrieved from card room.

Data analysis procedures: The collected data was entered, cleaned and analyzed by using SPSS version 23 software and described by using tables and graphs.

Ethical issues: Ethical clearance was obtained from Wollo University, college of medicine and health sciences, department of comprehensive nursing research committee. Official letter from department of comprehensive nursing was written to Kemissie general hospital. All files and medical records were reviewed in the archive room of hospital to ensure confidentiality.

RESULTS

Socio-demographic characteristics: The study shows more than half of clients' ages were falling 15-44 age group, 171 (57%). Regarding their sex 174 (58%) were females. See table 1 for more detail.

Table 1. Socio-demographic characteristics of heart failure patients admitted in kemissie general hospital from January 1, 2017 to May 28, 2019 (n=300)

Variables	Response	Frequency	Percent
Age in years	15-44	171	57
	45-64	84	28
	≥65	45	15
Sex	Male	126	42
	Female	174	58
Residence	Urban	166	55.3
	Rural	134	44.7
Region	Amhara	287	95.7
	Afar	13	4.3

Table 2. Outcome of HF patients with regard to age, sex, residence, NYHA class, Serum creatinine level and length of stay admitted in kemissie general hospital from January 1, 2017 to May 28, 2019 (n=300)

Variables	Response	Outcome	
		Death	Improved
Age in years	15-44	20(6.7%)	151 (50.3%)
	45-64	7(2.3%)	77(25.7%)
	≥65	6(2%)	39(13%)
	Total	33(11%)	267(89%)
Sex	Male	16(5.3%)	110(36.7%)
	Female	17(5.7%)	157(52.3%)
	Total	33(11%)	267(89%)
Residence	Urban	19(6.3%)	147(49%)
	Rural	14(4.7%)	120(40%)
	Total	33(11%)	267(89%)
NYHA class	One	-	3(1%)
	Two	1(0.3)	14(4.7%)
	Three	5(1.7)	22(7.3%)
	Four	27(9)	228(76%)
Serum creatinine level	Total	33(11%)	267(89%)
	<1.2	12(4%)	144(48%)
	1.2-1.5	-	-
	1.6-2.5	4(1.3%)	23(7.7%)
	>2.5	-	-
Length of stay	Not documented	17(5.7%)	100(33.3%)
	Total	33(11%)	267(89%)
	< 48hr	14(4.7%)	40(13.3%)
	2-5 days	13(4.3%)	98(32.7%)
	5-14days	5(1.7%)	112(37.3%)
>14	1(0.3%)	17(5.7%)	
Total	33(11%)	267(89%)	

NYHA classification of HF: Majority of the patients 255(85%) were class 4 as shown in Figure 1.

Outcome of HF admitted patients: A total of 300 HF patients were admitted in Kemissie general hospital from January 1, 2017 to May 28, 2019. Among these HF patients 33 (11%) were died and 267(89%) of them were improved at discharge. Age specific outcome of HF study subjects 15-44 year death accounts 20(6.7%). Regarding to "NYHA class" outcome of HF patient, class four, of 27(9%) were died and the rest "NYHA class" 228(76%) showed clinical improvement. This accounts the majority of deaths and clinical improvement when compared among other "NYHA class". See table 2 for more detail

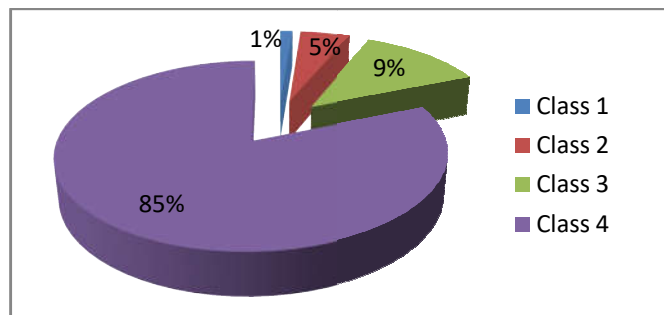


Figure 1. The NYHA classification of HF patients admitted in Kemissie general hospital from January 1, 2017 to May 28, 2019 (n=300)

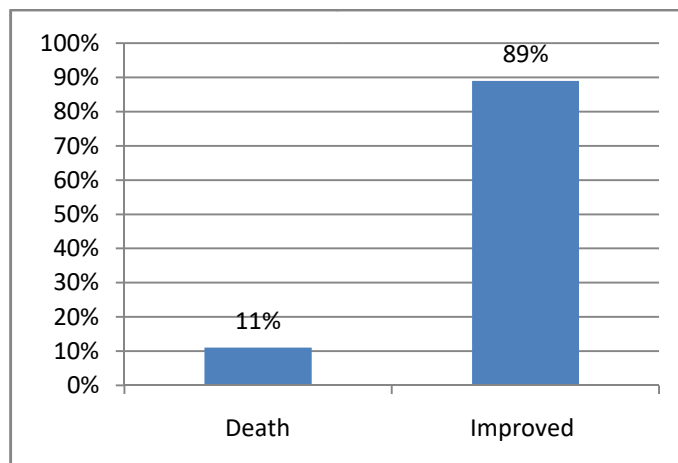


Figure 2. Outcome of HF patients admitted in kemissie general hospital from January 1, 2017 to May 28, 2019 (n=300)

DISCUSSION

Heart failure has been one of the most difficult diseases to treat in modern day of life. It is important to treat heart failure at the earliest stage after detection as much as possible and also follow the progress of the patient. As there is no cure for this disease, treatment is focused on improving the patients' quality of life by reducing hospital readmissions and preventing death of patients. In the current study among 300 HF patients 33 (11%) were died in Kemissie general hospital from 2017-2019. This showed that presence of big problem concerning to hospital care of patients that needs immediate attention. This finding in line with the study carried out in Canada and tertiary care hospital which were reported as a mortality rate of 11.1% and 11.2% heart failure patients respectively (Kaul *et al.*, 2013; Poffo *et al.*, 2017). But this finding lower than study conducted from 9 countries in which 159 of 1006 patients (15.8%) died

without completing a 6-month assessment (Damasceno et al., 2012). This difference might be attributed to the difference in setting of the study, sampling technique, sample size between different studies and life style of the heart failure patients. Again the present study slightly lower than a study done by retrospectively cohort study design in specialist and non-specialist services which was recorded as 13% inpatient deaths (Parmar et al., 2015). On the other hand this study higher than a study conducted in the united state in which 3.4% of mortality among hospital heart failure patients (Kaul et al., 2013). The reason for this difference might be explained by better life style of patients and advanced hospital care in the united state as compared to our study context.

Conclusion and Recommendation

High numbers of HF patients were died in the current study so that health care workers should strictly follow their patient and proper documentation also recommended. In addition to this in-depth further wide study should be conducted by using primary data to identify risk factors; behavioral factors and other determinant factors for the outcome of HF. Qualitative study also recommended.

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Conflicts of interest: The authors declare that they have no competing interests.

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