Clinical features and treatment strategies of heart failure

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Abstract

The aim of this study was to identified prevalence of heart failure and all risk factors related to it involve hypertension, obesity, diabetics, peripheral blood vessels and renal disorders in else to determine the most suitable medical treatment. The study conducted 80 patients aged between 25-80 years admitted in the intensive care unit in Rzgary hospital and teaching hospital in Erbil, northern Iraq for the period from December 15th 2010 to September 1st 2011. Result revealed that heart failure is significantly increasing in prevalence with an aging population. The study has been shown that males are more vulnerable 57.5% compared with females 42.5%, especially in ages of 51-60 years that recorded highest percentage terms accounted for 36.2% with medium to low occupation state were 48.7% and 32.5% respectively, while the high occupation state was about 18.7%. The major risk factors those increase incidence of heart failure were smoking, hypertension, form 38% and 35% respectively, followed by obesity by 29% and peripheral vascular disease which form 24% then while hypercholesterolemia and diabetes form 21% and 20%, finally renal disease incidence was 9%. Although there are now many effective treatments, angiotensin-converting-enzyme inhibitors 64% and beta blockers 51% are essential disease-modifying treatments, improving symptoms, reducing hospital admissions and patients with persistent symptoms, angiotensin-receptor blockers and aldosterone antagonists have additional benefits.

Keywords: Heart failure, Incidence, Prevalence, Factors related.

Introduction

Heart failure is one of the most prevalent cardiovascular disorders and considered the main cause of hospitalization especially elderly patients (Weintraub *et al*., 2010; McMurray and Pfeffer, 2005). Heart failure include a group of disorders of the heart and blood vessels and considered as a major cause of morbidity and mortality around worldwide and may lead to poor quality life supply (Stewart *et al*., 2002; Khalid *et al*., 2011; St. Paul, 2010). The heart attack depends on the level of medical product of the heart and peripheral resistance systemic career with the degree of disability such as heart failure with hypertension or heart failure with diabetes and heart failure with renal dysfunction (Ho *et al*., 1993; Harrington and Schoenfelder, 2013). Symptoms are shortness of breath at rest and lack of ability to exercise physical activity, coughing night, edema, nausea, vomiting, fatigue unexplained and weakness especially in the elderly (Stewart *et al*., 2002; Gheorghiade *et al*., 2006). In the developed countries the rate of the patient's age 75 years and 2.3% of the population suffer from heart failure at ages 70-80 years the ratio is 20-30%, in the US heart failure affects nearly five million people every year up nearly 500,000 new cases and more than 50% re-admission to hospital patients, especially after six months of treatment.

There is no significant difference in incidence between women and men, but be tougher in women, despite their ability to survive longer than men (Taha *et al*., 2011; Ibrahim *et al*., 1995; Shlipak and Massie *et al*., 2004). The diagnosis of heart depends on clinical laboratory tests and blood pressure measurement. Laboratory tests routine, such as measurement of electrolytes in the blood, nitrogen blood urea and creatinine, glucose, calcium, cholesterol, complete blood count, urinalysis, thyroid function and confirmed the research on it is one of the cases that lead to the asleep patient in the hospital, especially for the elderly over 65 years old (Fonarow *et al*., 2007; Yehia *et al*., 2000; Satish *et al*., 2002). Treatment involves drug treating symptoms and prevent the progression of the disease and essential treatments are angiotensin-converting inhibiter and beta-blockers which improve sings, reduce hospital admissions, and increase the period of survival.

Antihypertensive drugs improve blood flow and reduces the work effort on the heart and reduce the risk of irregular heart and reduces the symptoms of heart failure. Recommended sodium intake of food in all patients who suffer from heart failure or patients with heart failure with diabetes or obesity, in addition to paying special attention

to the management of nutrition in patients with severe cases of heart failure and weight loss is intentional or muscle damage should be mostly considered also important in the journal supplements, drug therapy of heart failure has progressed in the last two decades and became more complicated the simple measures of bed rest, salt restriction, digitalis and diuretics. The uses of angiotensin-converting enzyme (ACE) inhibitor therapy made a breakthrough in the management of heart failure, this pharmacologic agent that not only improves patients symptoms and hemodynamics, but also prolongs survival. Furthermore (Vasan *et al.*, 1995; Salem *et al.*, 1964)

Materials and methods

The study conducted in the intensive care unit in a Rzgary hospital and teaching hospital in Erbil, northern Iraq for the period from December 15th 2010 to September 1st 2011 and involving 80 patients aged between 25-80 years in our research used a questionnaire, which included age, sex, occupation status, smoking, high blood pressure, diabetes, high cholesterol and body mass index and were followed up patients through clinical laboratory test like complete blood count and kidney function test as well as a planning ECG and note the changes and radiography of the chest. Risk factor for heart failure were record, hypertension was defined as the presence of the systolic BP>140 mmHg and/or diastolic BP>90 mmHg, or patients were receiving antihypertensive drugs while patients were receiving insulin or an oral hypoglycemic agent diagnosed as diabetes mellitus. The data to calculate body mass index (weight in Kg / height in m^2), participates were classified as normal weight if their BMI was less than 25, overweight if their BMI was from 25 to 29 and obese if their BMI was 30 or greater. laboratory diagnosis of triglyceride and total cholesterol level as having a cholesterol level of 240 mg/dl or greater or being on high cholesterol medication and determine the most suitable medical treatment.

Results and Discussion

Heart failure is a complex cardio-vascular disorder with a variety of etiologies and heterogeneity with respect to the clinical presentation of the patient and It is significantly increasing in prevalence with an aging population and is associated with high short and long-term mortality rate. Table (1) shows that males are more vulnerable where registered 46 (57.5%) compared with 34 females (42.5%). Patient within age of 51-60 years recorded highest percentage terms accounted for 29(36.2%) followed by ages between 41-50 years 26(32.5%) as that (Weintraub *et al.*, 2010) found that most of the patients 65 years and older, heart failure is of most cases and the most expensive medically. While Salem

et al. (1964) founded one-third of all admissions were due to cardiovascular diseases, including the14.6% who were in congestive heart failure. This is a significant finding that ought to influence medical teaching and planning in Iraq. Khalid *et al.* (2011) Showed heart failure elevated in patient at young age according to occupation state (Table 2) the incidence of heart failure was elevated in patients with the medium average occupation state and low 39(48.7%) and 26(32.5%) respectively, lowest rate with high occupation state 15(18.7%). There are different risk factors (Figure 1) increase prevalence of heart failure, where was smoking, hypertension who form 38% and 35% respectively, and this appear hypertension is a disease of an ageing population and this agreement with Vasan *et al.* (1995). Gheorghiade *et al.* (2006) recorded smoking is a major cause of coronary heart disease and lead to heart attack and combined with family of heart disease. Obesity form 29%, Satish *et al.* (2002) confirmed increased body-mass index was associated with an increased risk of heart failure. United States, strategies to promote optimal body weight may reduce the population burden of heart failure. Other risk factors recorded vascular disease, hyper-cholesterolemia and diabetes mellitus form 24%, 21% and 20% respectively. Taha *et al.* (2011) reported hypercholesterolemia and diabetes mellitus contribute to many forms of many cardiovascular disease including peripheral arterial disease, cardiomyopathy and congestive heart failure. Finally renal disease incidence, which form less than 9% renal disorders with heart failure increase time of treatment and stay and higher post-discharge mortality (Vasan *et al.*, 1995). Although there are now many effective treatments in (Table 3), angiotensin- converting- enzyme inhibitors form 64% and beta blockers 51% are the essential disease–modifying treatments, improving symptoms and reducing hospital admissions. Khalid *et al.* (2011) showed the most medical frequently therapy for heart failure used angiotensin-converting-enzyme inhibitors form 75.5% and beta blockers 77.8% and diuretics 58.7%. Digoxin was another's medical therapy used33% others recorded treatment with digoxin did not decrease overall mortality among patients with heart failure and depressed left ventricular systolic function, although it did reduce hospitalizations slightly (Fonarow *et al.*, 2007; Gheorghiade *et al.*, 2006). These treatments are now preferred to calcium channel blocker, although this drug can still be useful at an earlier stage of heart failure. Many new pharmacological, device, and surgical treatments for heart failure

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are currently under evaluation in clinical trials, and other approaches.

Conclusions

Heart failure associated mostly with age population especially in male. The major risk factors include hypertension, obesity, diabetes, hyper-cholesterolemia and renal disease. The most medical therapy used was angiotensin-converting-enzyme inhibitors and beta blockers.

Recommendations

To prevent development of heart failure through better understanding of risk factors mechanisms and genetic predisposition; newer pharmacologic agents that address remodeling and apoptosis, gene therapy that correct molecular defects and generate healthy contractile machinery.

Table (1): Percentage of heart failure according to age and gender.

Age	Male	Female	Total
30-40	5	2	8.75%
41-50	11	15	26(32.5%)
51-60	16	13	29(36.2%)
61-70	9	3	12(15%)
71-80	5	1	6(7.5%)
Total	46(57.5%)	34(42.5%)	80(100%)

Table (2): Percentage of heart failure according to occupation level.

Age	Male	Female	Total
High	7	8	15(18.7%)
Medium	23	16	39(48.7%)
Low	16	10	26(32.5%)
Total	46(57.5%)	34(42.5%)	80(100%)

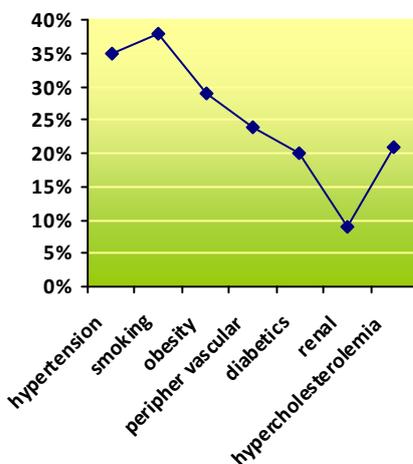**Figure (1): Profile of risk factors related to heart failure.**

Table (3): Medical treatment of heart failure.

Drug	Percent
ACE inhibitors	64%
Beta blocker	51%
Diuretic	49%
Digoxin	33%
Calcium channel blockers	23%

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