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Study Of Pharmacotherapy For The Congestive Heart Failure

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ABSTRACT

Congestive heart failure (CHF)is the inability of cardiac structure or function to deliver inadequate blood to the metabolic tissue, in-spite of normal filling pressure (only with rate of high filling pressure).Types of heart failureis Left sided heart failure which is the most common types of heart failure, Right sided heart failure , Diastolic heart failure, Systolic heart failure. The main causes of CHF is coronary artery disease (20%), cardio myopathy (15%) Arrhythmia, unhealthy lifestyle habits, such as an unhealthy diet, smoking, heavy alcohol use and lack of physical activity

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can increase your risk of heart failure. The aim of this study was to promote the role 0f pharmacist in rationalizing drug therapy, to check drug indication, doses, dosage and duration of therapy. Total 20 cases Congestive Heart Failure were collected from cardiology ward at Lady Reading Hospital Peshawar. Congestive heart failure in Peshawar was recorded more than the other cities out of 20 patients 5 patients were from Peshawar (25%).The age of majority of the patient was above 45 years.. In current study the highest ratio of (CHF) were in aged of 45–60 years patients (45%) in aged of 61-75% was (30%) In male patients the congestive heart failure was more than (60 %) and in female more than (40%). Pharmacological treatment of CHF are Angiotensin converting enzymes inhibitor , Angiotensin receptor blocker, Ivabradine , Digoxin and Other digitalis glycoside, Renin inhibitors, Diuretics. Some potential interaction between Aspirin and enoxaparin with a percentage of (35%). Similaris the case with aspirin and clopidogrel35%. Spironolactone and Furosemide (25%), Aspirinand Candesartan (30%) Ceftizoxime and Digoxin (35%) Ceftizoxime and Warfarin (5%), Digoxin and Metformin (5%), Further more, to the majority of the patient practice of poly pharmacy was also noticed including more than three anti hypertensive's like Angiotensin converting enzyme (ACE) inhibitors, loop diuretics, spironolactone and carvedilol were prescribed to the patient combine so in such situation it is recommended to the physician to thoroughly monitored the B.P and heart rhythm. Some of the drugs like digoxin and warfarin which are Therapeutic drug monitoring (TDM) drugs and leads to potential ADRs if there proper monitoring is not conducted. In these 20cases different parameters were studied which showed that 80 %means 16 out of 20 cases received rational the rapy according to standard pharmaco therapy and to the prescribed therapy . the patients respond well . Irrational therapy was received in 4 cases (20%) out of 20 due to poor response of the patient. The irrational drug therapy was due to improper dosages and frequency . The overall study was based on clinical practice hence it is the responsibility of pharmacist in concerned ward to council and educate the patient about prescribed regimen, dosage .The most serious life threating complications associated with congestive heart failure are kidney damage or failure , irregular heartbeat , sudden cardiac arrest and liver damage . This was concluded that majority of the patient observed in hospital were suffering from heartfailure with major cause of left ventricular failure (80%) as well as diastolic dysfunction (20%).

INTRODUCTION

Cardiac failure may be defined as inability of cardiac structure or function to deliver inadequate blood to the metabolic tissue, in spite of normal filling pressure(only with rate of high filling pressure)[1]. For the purpose of these course of action, cardiac pressure is defined, practically, as a condition where patient have classical symptom (e.g. Fatigue breathlessness and ankle swelling) and sign (e.g. high jugular venous pressures, displace apex beat and pulmonary crackle) occurring from the defect of

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heart structure or performance. The identification of cardiac can be complicated. Numerous symptoms of HF are not distinguished and, as a result, of poor diagnostic value a lot of the sign HF occurred from retentiono[2]

In common, the etiology of congestive heart failure (CHF) is comparable in younger an older patient, but in elder individual CHF is highly multifactorial. Like in younger patient, coronary heart disease and hypertension are the most familiar cause of CHF, its is for more than 70% of cases [3]. Hypertensive heart disease represented by a more brutal Hypertensive hypertrophic cardiomyopathy condition, which is most commonly in elder women and is frequently occurred by intense calcification of the mitral valves annulus [4].These patients often obvious rigorous diastolic dysfunction and they might reveal vibrant left ventricular out flow tract barrier identical to that in typical hypertrophic cardiomyopathy.[5]

In US Aabout 5million populace are affected from cardiac failure. Approximately 550,000 new cases detected every year [06]. In develop countries about 1-2% of adult populace have HF. More than 10% having age 70 years or elder have incidence of Heart failure [6] . Constantly with the increase incidence and considerable mortality related with this condition, adults elder than age 65 years CHF is presently the primary signal for hospital admittance. There be 875,000 hospitalization within the USA, In 1993 with a first discharge listed of diagnosis of CHF.' 78 % of the patients were 65 year of age or elder, and 50% of the cases were with more than 75 year of ages[7].

Heart failure is a wide pathophysiological state in which diverse off setting mechanism and adaptive alteration bring into play [8]. Not a single model haditable to completely clarify theses pathophysiologic mechanism. Clinically define model to a certain extent for including cardiorenal, neurohumoral & hemodynamic mechanisms. Of these mechanisms primarily are gifted to renovate cardiovascular performance to the usual homeostatic range and the patient are without symptom. However, the prolong sensation of these structure can lead us to end organ hurt along with the deterioration of left ventricular(LV) modification and consequent cardiac off setting [9].

Spironolactone and eplerenone square receptors that quandary aldosterone furthermore, different corticosteroids, and are best portrayed as MRAs. Despite the fact that patients in the Eplerenone in Mild Patients Hospitalization what's more, Survival Study in Heart Failure (EMPHASIS-HF) [10]

METHODOLOGY

clerkship was done in Lady reading hospital Peshawar. Data was collected from patients according to prescribed clinical pharmacy patient medication profile form. The cases were diagnosed by the respective consultants of the wards. The study was conducted as following pattern.

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STUDYDESIGN

Our study design was prospective cross sectional

STUDYSETTING

The study was handled at lady reading hospital which tertiary care hospital of the district Peshawar and we have round at Pead's ward for two hours on daily basis and collect the cases.

STUDYDURATION

When our internship was started we were stay for 45 days in the Outpatient department (OPD) pharmacy of the hospital where we performd ifferent work like counting, checking of expiry medicine, refrigerator monitoring, prescription cracking, and printing of the trolley and dispensing then the remaining 20 days at the allied surgical pharmacy.

DATACOLLECTION TECHNIQUE

The data collection is two types which is given below Inclusion

i. Majority of the patients were having comorbidity
ii. Male and female both were present Exclusion
i. None of the patient age is abovethan10 years' old
ii. None of the OPD patient is present

DATAANALYSIS

MS excel were used to summarize the data

ETHICAL APPROVAL

The lady reading hospital ethical committee approved to be the part of the lady reading hospital

RESULTS

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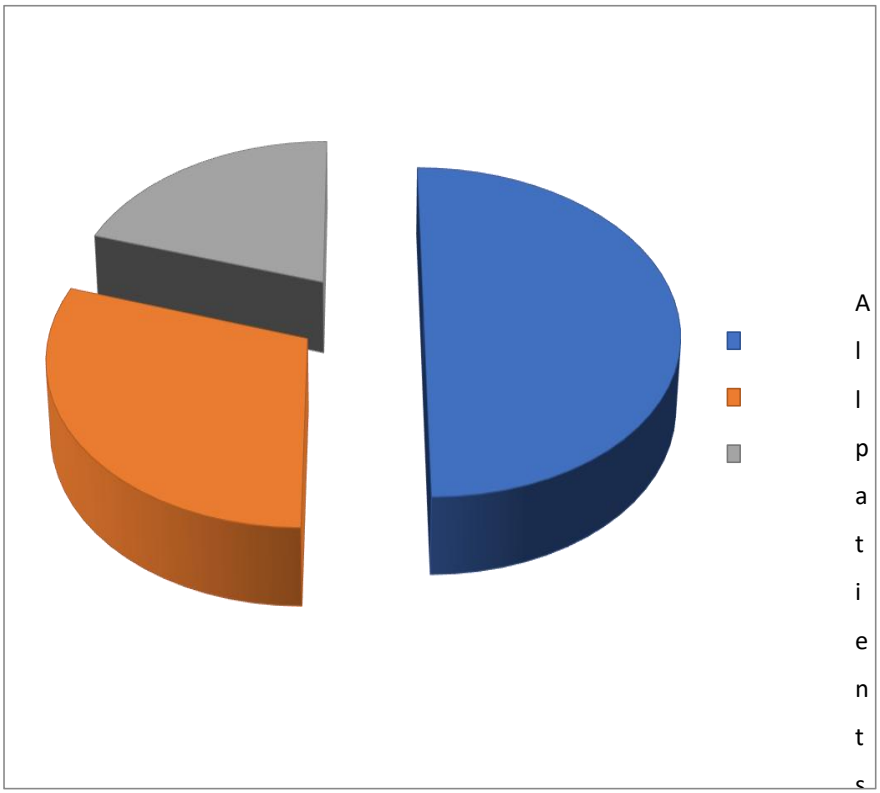


Figure1 Patients Demographic Data.

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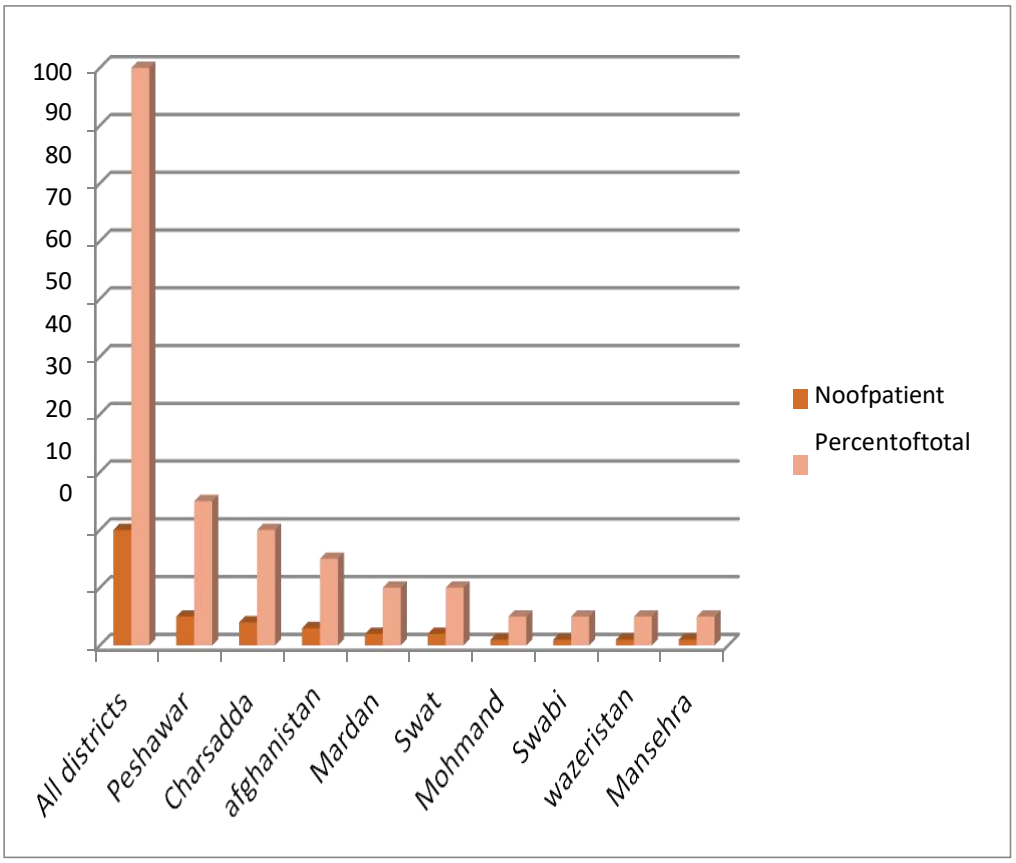


Figure 2 District wise distribution of ptients.

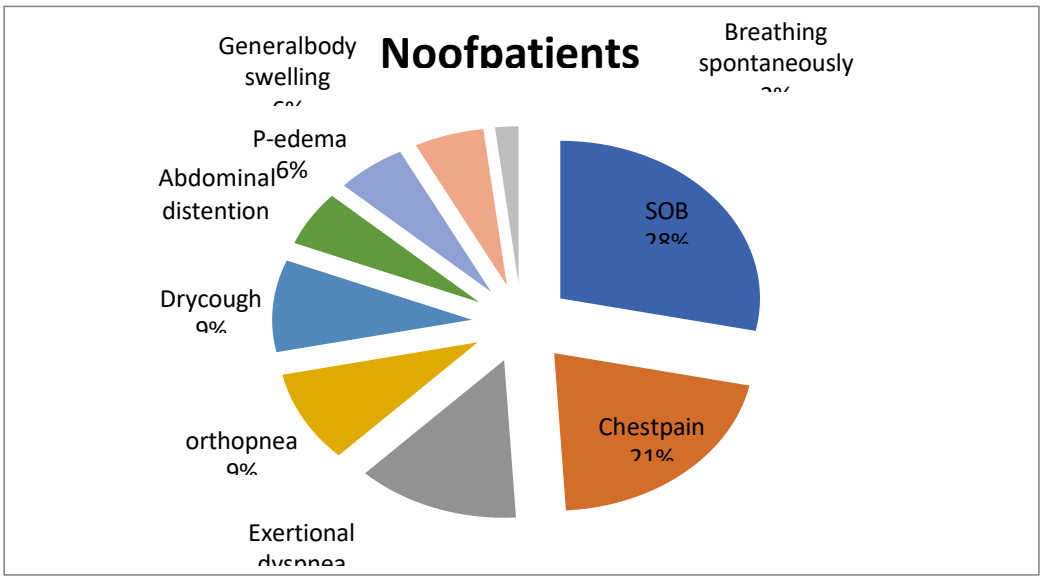


Figure 4 Cause of hospitalization

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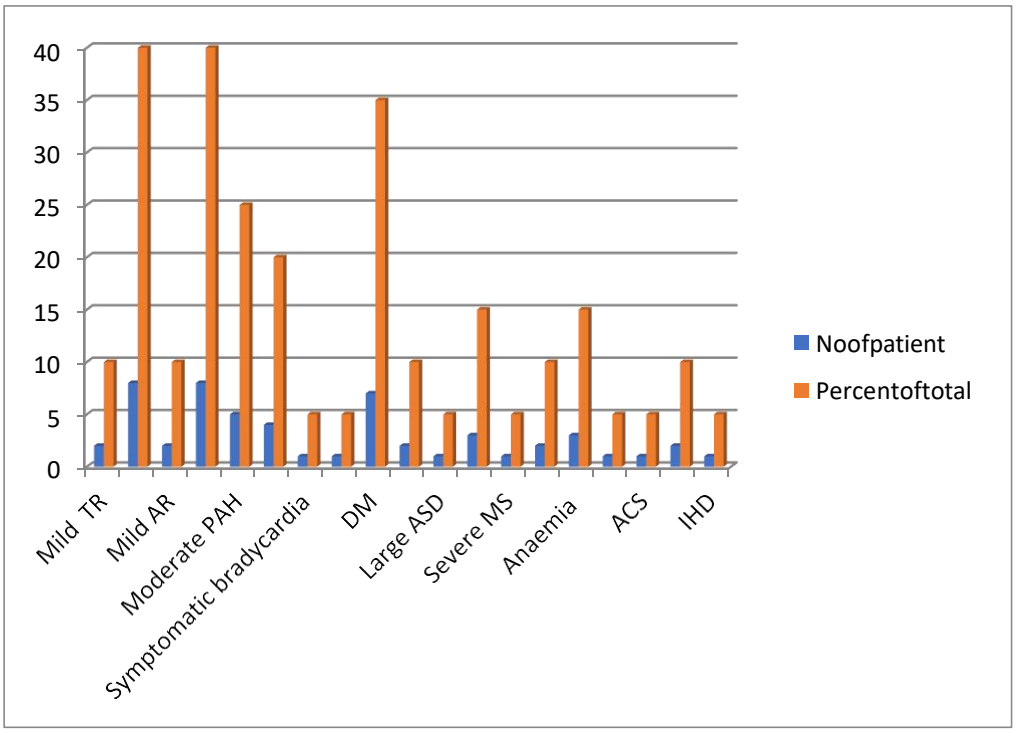


Figure 4: Concurrent Diseases

Table1: ***Drugs Interaction Of Each Drug***

Drug Interaction	Occurance	Percentage
Clopidogrel+aspirin	6	30
Aspirin+enoxaparin	7	35
Aspirin+furosemide	3	15
Aspirin+spironolactone	3	15
Omeprazole+clopidogrel	4	20
Aspirin+ramipril	2	10
Bisoprolol+aspirin	4	20
Furosemide+albuterol	2	10
Aspirin+losartan	2	10
Aspirin+carvedilol	2	10
Carvedilol+losartan	2	10
Spironolactone+digoxin	2	10
Spironolactone+furosemide	2	10

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Enoxaparin+clopidogrel	**2**	**10**
Spironolactone+furosemide	**2**	**10**
Ceftizoxime+digoxin	**2**	**10**
Bisoprolol+spironolactone	**2**	**10**
Aspirin+enalapril	**2**	**10**
Candesartan+enalapril	**1**	***5***
Enalapril+furosemide	**1**	***5***
Aspirin+candesartan	**1**	***5***
Candesartan+furosemide	**1**	***5***
Aspirin+dobutamine	**1**	***5***
Furosemide+dobutamine	**1**	***5***
Spironolactone+ramipril	**1**	***5***
Calciumcarbonate +rosuvastatin	**1**	***5***
Vit-D+calciumcarbonate	**1**	***5***
Ranolazine+candesartan	**1**	***5***
Ramipril+furosemide	**1**	***5***
Ranolazine+rosuvastatin	**1**	***5***
Bisoprolol+furosemide	**1**	***5***
Furosemide+digoxin	**1**	***5***
Azithromycin+digoxin	**1**	***5***
Aspirin+albuterol	**1**	***5***
Escitalopram+warfarin	**1**	***5***
Azithromycin+warfarin	**1**	***5***
Ceftizoxime+warfarin	**1**	***5***
Acetaminophen+warfarin	**1**	***5***
Heparin+warfarin	**1**	***5***
Vit-K+warfarin	**1**	***5***
Rosuvastatin+warfarin	**1**	***5***

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Ipratropium+orphenadrine	1	5
Dimenhydrinate +orphenadrine	1	5
Albuterol+dimenhydrinate	1	5
Digoxin +albuterol	1	5
Ceftrixin+calciumgluconate	1	5
Digoxin +clarithromycin	1	5
Digoxin+metformin	1	5
Furosemide+losartan	1	5
Metoclopramide+dopamine	1	5
Enoxaparin+losartan	1	5

Discussion

I have collected 20 cases on my standard proforma, the components contain are Chief complaint, medical lab test, Diagnosis, concurrent disease, compliance about current drug use, side effect, ADRs, Drug interaction and drug related problems. For the evaluation of histories, I have followed the British national formulary(BNF), drug.com and Medscape standard online software. In 20 cases there were 12 male that is 60% and 8 female with 40%. According to literature CHF is more contain in female, but during this study male are more than female with CHF.

Women face a 20% increased risk of developing heart failure or dying within five years after their first severe heart attack compared with men, according to new research published today in the American Heart Association's flagship journal Circulation (Alice K. Jacobs, Jeffrey L. Anderson and Jonathan L. Halperin).

It is interesting thatleft ventricle failure (LVF) is more than other types of HF, such as diastolic dysfunction. District wise distribution Peshawar is at high rate of 25%, Charsadda, Afghanistan , Mardan , swat, Mohmand , with the rate of 20%, 15%, 10%, 10% and 5% respectively. As well as age concern the most prevalence factor to be measured were 38- 45 years with 15%, 46-60 year age with 45%, between 61-75 years ages with 30%, 76-80 years with 0% and between 81-100 years ages with rate of 10%. Also it is noticed that 45 year age is the starting age for HF and increasing the age chances of HF increases.(Luo, C., Ramachandran, D., Ware, D.L. *et al.* Modeling left ventricular diastolic dysfunction)

As well as concern about drug interaction of the most importance, and measured in about 18 histories out of 20. There were total of 52 drug interaction found, including the interaction of the rapeutic drug monitoring (TDM) drugs liked igoxin and heparin etc.The major drug interaction were noticed with aspirin and enoxaparin (35%) both enhance anticoagulation can be prescribed as indicated for unstable

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angina, non-Q-wave MI, and STEMI, clopidogrel and aspirin (30%) both have synergistic effect and increase in both dose have major toxicity. 20% interaction were noticed with aspirin +bisoprolol and Omeprazol + clopidogril, 15% noticed with Aspirin + furosemide&Aspirin+spironolactone. Also it is noted that majority of interaction were found with aspirin. Compliance from the patient were good and no patient were found to miss a dose. Dose adjustment were found in two cases with diabetic nephropathy patient.(McMurray, J.J., et al., Effects of can desartan in patients with chronic heart failure and reduced left-ventricular systolic function taking angiotensin-converting-enzyme inhibitors: the CHARM-Added trial. The Lancet, 2003.)

The over all summary of the discussion was that, the data was collected and then discussed from 20 cases presenting that some of the patients were getting rational therapy because little bit patient respond well and show improvement in health, but polypharmacy is ever present in some of cases. Many of the cases in which some irrationality was seen is necessary to be solved by following standard prescription parameters to avoid any loss to patienthealth. (Cohn,J.N.andG.Tognoni,Arandomizedtrialoftheangiotensin-receptor blocker valsartan in chronic heart failure. New England Journal of Medicine, 2001.

Conclusion

During the study, various cases were studied related to Congestive Heart failure (CHF) we have come to the conclusion that generally therapy was good, rational and patient response was also encouraging. Although the reisstillafew proble minthe treatment prescribed y the pharmacotherapy in response of Polypharmacy, Drug-druginteraction. All cases were study and evaluated for patients of Congestive heart failure . The drug related problem were observed which includedrug-druginteraction which werefound someof thepatient case histories about 30% of drug-drug interactions werefound in total cases for the better result for congestive heart failure it can be obtained by resolving some problems like drug- drug interaction , by avoiding poly pharmacy , reduce duplication of drugs.

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