



Prescription Trend of Challenging Problems in Cardiac Patients of Larkana Pakistan

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ABSTRACT

Global mortality and burden of disease from cardiovascular disease is borne by low and middle income countries which are about 85 %. Pakistanis are inherent to develop challenging problems like hypertension, diabetes and dyslipidemia because of being ethnic group strongest causal risk factor for CAD in Pakistani population. It is necessary to document whether patients of above diseases are prescribed correct medications. To Document the prescription trends of some challenging problems like Diabetes Mellitus, Hypertension and Dyslipidemia among Known Cardiac Patients. A prospective and prescription based study was conducted. This study was conducted at cardiac outpatient department (OPD) of Chandka medical college hospital (CMCH) Larkana. A total 500 consecutive patients with known ischemic heart disease and diabetes mellitus presented to outpatient department were included in the study via purposive sampling. No age restriction for patients of both sexes (male and female) will be monitored at OPD Chandka Medical College Hospital. Patients presented with cardiac symptoms are excluded after work up. Out of total 500 patients 288 were males (57.60%) and 212 (42.40%) were females, 3.2% of peoples were Hypertensive out of which 270(57.9%) were males and 42 % (196) were females, 31.2% of patients were having other Miscellaneous which was related to cardiac problems out of which 104(66.66%) were males and were females 52(33.33%). 8.40% of patients were diabetic out of which 20(48.7%) were males and 22(51.2 %) were females, 54.2% of patients were Dyslipidemic patients out of which 164(60.5%) were males and 107(39.4%) were females. 100% (500) were being on treatment of their relative disease including hypertension, diabetes mellitus and dyslipidemia. Experience at government hospital of cardiac outpatient department all hypertensive, diabetic and Dyslipidemic patients were receiving appropriate treatment including Anti-hypertensive, Anti-diabetic, and Dyslipidemic medications.

Keywords: Diabetes, Dyslipidemia, Larkana Pakistan, Hypertension and Prescription trend.

INTRODUCTION

Hypertension is defined as when the systolic blood pressure is more than and equal to 140mmHg and when diastolic blood pressure is more than 80 mmHg. Blood pressure is defined as the pressure exerted by the blood on the walls of blood vessels this is known as blood pressure. Heart beats about 60-70 times per minutes at rest, But when the heart beats blood pressure is highest pumping the blood this is known as systolic blood pressure and when heart is at rest there is fall in blood pressure this is known as diastolic pressure.^{1,2} Diabetes mellitus is a term which demonstrates the metabolic disorder of multiple aetiology characterized by hyperglycemia with the disturbances of fats, protein, carbohydrates metabolism due to improper secretion of insulin or resistance of insulin or from both. Damage, failure and dysfunction of various organs are due to the long term effects of diabetes. Diabetes is characterized by following symptoms like polydipsia, polyurea, blurring, weight loss and polyphagia. Ketoacidosis occurs in Type 1 diabetes and it's a most severe conditions or non-Ketotichypers molar state which occurs in type 2 diabetes leading to stupor, coma and death when effective treatment is not been given or taken. Sometimes diabetic patients do not show symptoms so functional changes

and pathological changes can be present for long time which are due to the consequently hyperglycemia so it can worsen the condition of patient before even the diagnosis is made, Often symptoms Retinopathy leading to potential blindness, renal failure caused by nephropathy, foot ulcers risking amputations, abnormal sexual function, Charcot joints and neuropathy are the long term symptoms caused by the diabetes mellitus. Cardiovascular risk is very high in patients with diabetes also peripheral vascular and cerebrovascular disease can be caused with diabetes, Beta cells destruction of the pancreas with insulin deficiency is a pathological process which leads diabetes and also insulin action resistance causing carbohydrate abnormality, fats abnormality protein abnormality because of insulin action is not proper on the targeted tissues or because of not having appropriate amount of insulin change in diagnostic value for fasting plasma/blood glucose concentrations.³ Lowering the fasting plasma glucose concentration is the major recommendation in the diagnostic criteria for diabetes mellitus which is 7.0mmol l⁻¹ which is about 126 mg dl⁻¹ or more and also former level should be 7.8 mmol l⁻¹ (140 mg dl⁻¹) or more. 6.1 mmol l⁻¹ (110 mg dl⁻¹) or more is for whole blood and from the former 6.7 mmol l⁻¹ (120 mg dl⁻¹). In 1980 WHO published the first classification of diabetes¹² and in 1985 modified form of



diabetes mellitus were published.⁴ These classifications of diabetes mellitus are for glucose intolerance having two statistical risk classes. Insulin dependent diabetes mellitus which in shortcut abbreviated as IDDM and non-insulin dependent diabetes mellitus which in shortcut abbreviated as NIDDM these two major classes which were proposed by the expert committee in 1980. Later the two classes type 1 and type 2 were omitted by the study group report with retention of IDDM and NIDDM and a new class was introduced known as Malnutrition-related Diabetes Mellitus (MRDM), Other types of diabetes were also included in 1890 and 1985 reports which were impaired glucoses tolerance IGT and gestational diabetes mellitus GDM. Which were presented or reflected in 1991 at the International Nomenclature of Diseases (IND) and also in 1992 at the tenth revision of international classification of disease (ICD-10 in 1992. All of these classifications the most widely used and accepted classification of diabetes mellitus is the 1985 classification because it demonstrated difference between aetiological classification and clinical classification and clinical useful when the specific cause and aetiology was not known. This classification of diabetes mellitus gave both clinical descriptive criteria and complementary aetiological classification.⁵ Margaret Mcdonald et al (2009)⁶ studies the established risk factors for cardiovascular diseases in the patients which are affected by diabetes, dyslipidemia and hypertension aging sixty five or more, among older patients strategies for risk reduction include decline of CVD morbidity and mortality by controlling these risk factors for CVD and from past decade these risk factors had increased the prevalence and suboptimal risk factors control rates. From nationally represented data patients aging sixty five or more were included out of which 76.6% were women's having more prevalence as compared to men 63.0% by hypertension and when treated pharmacologically lower rates of control were found in women 60.3% , while in prevalence of dyslipidemia men have less awareness of their conditions compared to women's about (59.1% vs. 71.1%), 21.2% of older adults were affected by diabetes and pharmacologically they were treated about 50.9%. M.G.Rajanandhet al (2012)⁷ studies the pattern of prescription of cardiovascular agents or drugs at tertiary care hospital of kanchipuram district India, in this prospective study, prescriptions related with cardiovascular were included. 215 prescriptions were taken for assessment from august 2010 to march 2011 in Sri Ramasamy Memorial Medical College Hospital and Research Centre. From Essential list of drugs given by WHO these prescription were evaluated. 120 drugs out of 215 prescriptions were found used repeatedly from the essential list of drugs given by WHO, results revealing that those drugs were in accordance with WHO which were prescribed in single dose formulation but fingers were raised on fixed dose combination each patient was given 5 to 9 drugs by using poly pharmacy pattern. Careful precautions should be taken into account when there are more than three cardiac conditions in elder patients to

minimize poly pharmacy.⁸ S.Kaur et al (2013) studies that globally hypertension is most common disease bearing the risk factor for CVD and renal diseases Most commonly prescribed antihypertensive agents were angiotensin converting enzymes inhibitors which were about 33.6% then comes calcium channel blockers which were about 30.5% then comes beta blockers which were about 13.7% then comes angiotensin receptors blockers which were about 11.5% then comes diuretics which were about 9.2% as Mono therapy and first line drugs, 55.29% were the prescriptions for of combination therapy with the most important and used again and again combination was of angiotensin converting enzymes inhibitors and calcium channel blockers. 70% of co-morbid was diabetes from essential list of drugs given by WHO according to those drugs were prescribed. The less prescribed drug among all the antihypertensive agents was thiazide.⁹

Research Methodology

A prospective and prescription based study that was conducted in outpatient department of Chandka medical college hospital Larkana Pakistan. A total of 500 patients were selected by random sampling method from an approved well designed structured proforma and study was started from march 2012 to november 2013 after the approval of board of advanced studies and research. No age restriction with confirmed diagnosis of cardiac problems with any one disease at least like Hypertension, Diabetes and Dyslipidemia containing prescription was included in the study. Pregnant women were excluded from the study. Information is arranged in simple frequency tables and results are given on the percentages basis. Percentage distribution is been taken with the help of SPSS 20.00.

RESULTS AND DISCUSSION

Experience at tertiary care outpatient department all hypertensive, diabetic and Dyslipidemic patients were receiving appropriate treatment including Anti-diabetic, Anti-hypertensive and Dyslipidemic drugs. Total 1019 drugs were prescribed from those 852 were used for Antihypertensive treatment having 83.61%. 139 drugs were used for Anti Dyslipidemic treatment having 13.64%, 28 drugs were used for Anti-Diabetic treatment having 2.74%. Out of total 500 patients 57.60% (288 males) and 42.40% (212 females), 93.2% patients were Hypertensive having 57.9% (270 males) and 42% (196 females), 31.2% patients were Miscellaneous which were related to cardiac problems having 66.66% (104 males) and 33.33% (52 females). From miscellaneous patients 51.20% patients were present with ischemic heart disease with 80% (64 males) and 20% (16 females). 6.41% patients having dilated cardiac myopathy with 60% (6 males) 40% (4 females). 23.07% patients were suffering from vascular heart disease with 50% (18 males) and 50% (18 females). 3.84% patients of NSTEMI having 100% (6 females). 2.56% patients of aortic regurgitation having 50% (2 males) and 50% (2 females). 2.56% patients of tetralogy of fallot having 50% (2 males) and 50% (2 females). 2.56% patients



of MSMR having 100% (4 females). 1.20% patients of acute coronary syndrome having 100 % (2 males), 1.20% patients of ventricular septal defect having 100 % (2 males). 1.20% patients of hepatitis c having 100% (2 males). 1.20% patients of hypothyroidism having 100% (2 males). 1.20% patients of IHMP having 100% (2 males), 1.20% patients of vulvular having 100% (2males). 20.80% patients with optimal blood pressure having 65.38% (68 males) and 34.61% (36 females),12.80% patients with normal blood pressure having 71.87 % (46 males) and 28.12% (18 females), 8.40% patients with high normal blood pressure having 52.38% (22 males) and 47.61% (20 females), 32.80% patients with grade 1 blood pressure having 60.97 % (100 males) and 39.02% (64 females), 12.80% patients with grade 2 blood pressure having 37.50% (24 males) and 62.50% (40 females), 4.80% patients with grade 3 blood pressure having 41.66% (10 males) and 62.50% (14 females). 7.60% patients with unidentified BP having 52.63% (20 males) and 47.36% (18 females). 8.40% patients were diabetic out of which 48.7% (20 males) and 51.2% (22 females). 54.2% patients were Dyslipidemic having 60.5% (164 males) and 39.4% (107 females).

A study was shown to have more use of statins about 59.9% of all dyslipidemia medications used in their study period, compared to current study the use of statins in dyslipidemia prescription medication was about 13.64% showing mostly usage of statins, the major statin used in this study was Rosuvastatin which was about 33.8% and Somatostatin about 19.4% of all dyslipidemic prescription medications. In type 2 diabetes mellitus Metformin was predominantly used as a Antidiabetic prescription medication about 73% of all diabetic medications, comparing with this study the use of Metformin was as a first line therapy which was about 25% of all diabetic patients. In hypertensive patients the use of beta blockers was predominant, comparing with current study diuretics were used primarily as the anti-hypertensive prescription medication at tertiary care hospital in Larkana.¹⁰ In another study suggesting that there were total number of 192 hypertensive patients compromising about 87 males having 45.4% and 105 females about 54.6%, in comparison with my study, 466 patients were suffering from hypertension from those patients a total of 270 patients were males with 57.9% and patients were females with 42% showing that in tertiary care hospital Larkana the hypertension was more common or prevalent in male gender in comparison with female gender. The age of the patients below 30 years of age were about 15 patients with 7.8%, and from 30 years to 60 years of age, there were 135 patients about 70.3% and patients aging more than 60 years there were about 42 patients having 21.8%, in comparison with my study patients below the age group of 30 were about 10.8% overall having 54 patients. Patients having the age group of between 30 to 60 years old they were about 352 with 70%, patients who were aged more than 60 years of above they were about 94 patients with 18.8% overall as compared to my study which shows an increase in the no of patients with the

respective age groups.¹¹ A study was showing that 40-50% of patients who were hypertensive were suffering from the risk of other cardiovascular factors which includes metabolic syndrome, diabetes, dyslipidemia smoking and glucose intolerance because of these factors treating them was very difficult task specially on mono therapy for that more than two drugs were used and at time and more than three drugs were also used to attain treatment goals, compared to my studies hypertensive patients were having other co morbid like dyslipidemia, diabetes, ischemic heart disease, vascular heart disease, dilated cardiomyopathy, tetralogy of fallot, aortic regurgitation, vascular Septal disease, ischemic heart myopathy, acute coronary syndrome, they were given poly pharmacy because of that mono therapy for these patients was avoided in order to attain treatment goals.¹² In another study, data of 492 patients were collected, from those 492 patients, there were about 334 males having 67.88% and females were about 158 having 32.11%, and they were divided into their age group basis which includes 126 patients with 25.6% were related with the age group between 20-44 years old and 294 patient with 59.75% were related with the age group between 45-65 years old and 72 patients with 14.6% were related with the age group between 65-80 years old. Compared to my study patients with the age group between 20 to 44 years old were about 156 patients with 31.2% and the patients with the age group between the 45 to 60 years old were about 260 patients having 52% and the patients who were having age above 65 years old to 80 years of age group, they were about 58 patients having 11.6%.¹⁵ In another study it was shown that the mortality was decreased when metformin was used as compared to others drugs who are used for anti-diabetic treatment therapy, in comparison with my study the drug which was mostly used in the treatment of diabetes was metformin and metformin is considered as best treatment for diabetes mellitus because of being a first line therapy.¹³ Another study was showing that those patients who were hypertensive as well as diabetics they should be considered on fixed dose combination, because fixed dose combination will minimize the chance of noncompliance with medications, and it was also beneficial in those patients who were having ischemic heart disease and dyslipidemia. In comparison with my study those patients who were having ischemic heart disease and also those suffering from dyslipidemia, they were given fixed dose combinations in order to attain compliance with medications and also to those patients who were diabetics they were also given fixed dose combinations.¹⁴

Table 1: Gender wise distribution

Gender	Number of patients	Percentage
Male	212	42.40%
Female	288	57.60%
Total	500	100%

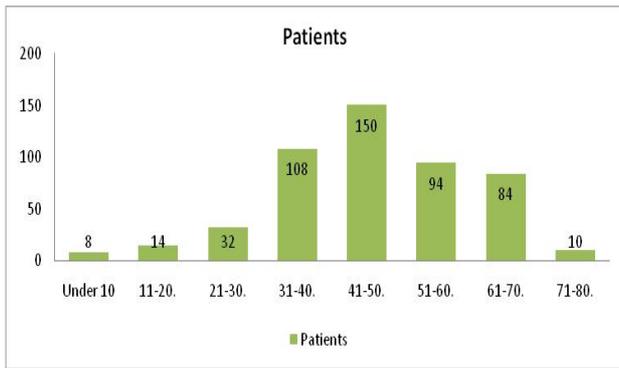


Figure 1: Graphical representation of patients with ages

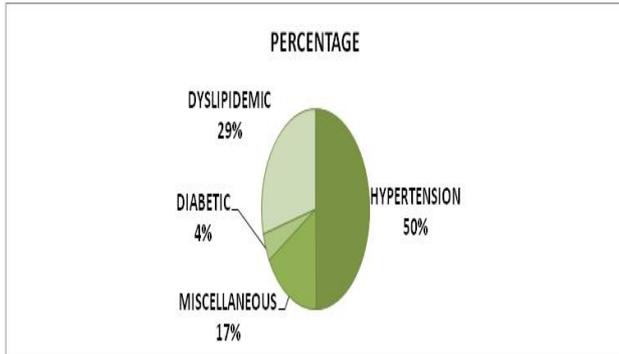
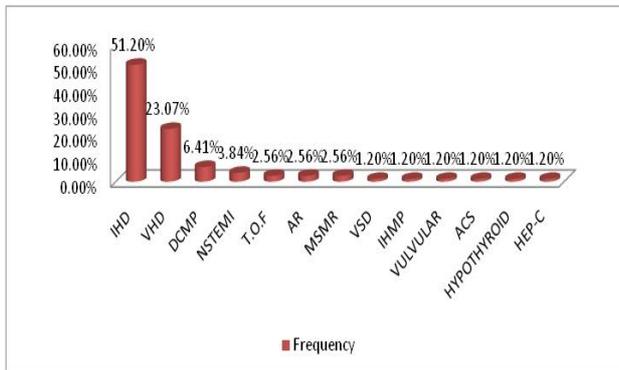


Figure 2: Disease wise distribution



IHD(ischemic heart disease)VHD(vascular heart disease)DCMP(dilated cardiomyopathy) NSTEMI(non S elevation myocardial infarction)T.O.F(tetralogy of fallot)AR (aortic regurgitation)VSD(vascular septal disease)MSMR(mitral stenosis and mitral regurgitation) IHMP(ischemic heart myopathy)ACS(acute coronary syndrome)

Figure 3: Types of Cardiac problems with percentage

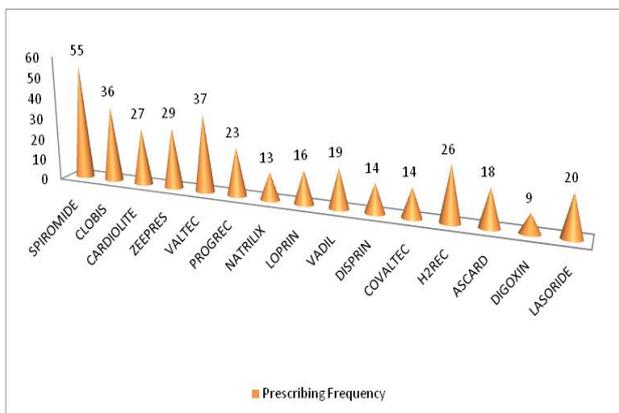


Figure 4: Prescribing frequency of Antihypertensive drugs

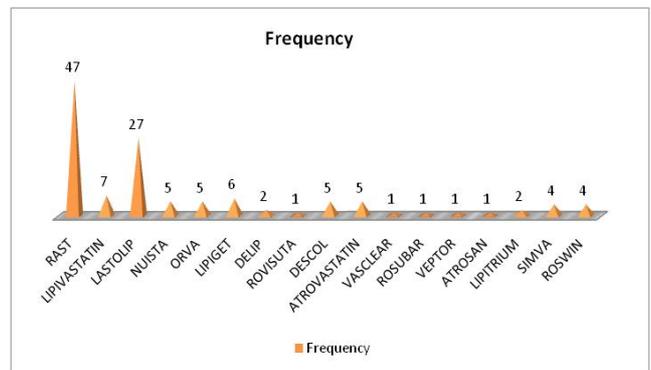


Figure 5: Prescribing frequency of Dyslipidemic drugs

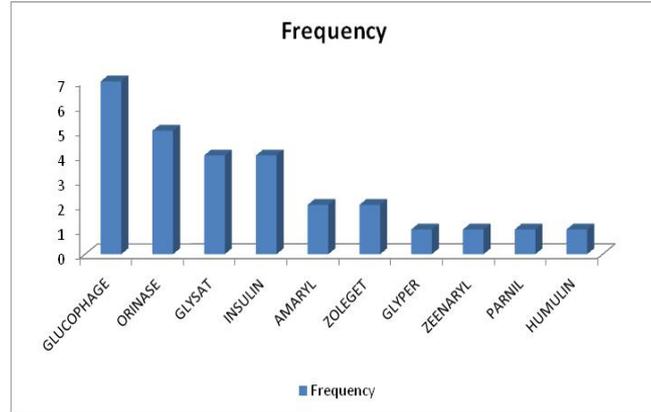


Figure 6: Prescribing frequency of Antidiabetic Drugs

CONCLUSION

ECG should be checked for both new and old patients but special care should be taken while checking new patients in order to attain excellent diagnostic parameters with maximum rational effects of drugs at tertiary care hospital in Larkana. Always prescription should be checked and read carefully because there can be chances that sometimes during overlook of prescription many important drugs can be missed by naked eye, for that it should be checked carefully and treatment followed by diagnosis should be done by following standard protocols. Samples should be given appropriately so that patients should get his/her treatment effective and cured; there are chances that if full treatment with samples is not given then due to socio economic conditions of a patients he/she will not be cured properly because at tertiary care hospital in Larkana mostly patients which are coming are of poor background. Their random sugar and fasting sugar must be checked in order to get desired results from patients, because it will clearly state the physical condition of a patient and extent of disease so for that these laboratory findings should be done properly Most important of all according to WHO guidelines names of the drugs should be written on generic basis in prescription but in my study all the brand names were written on the prescription.

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