WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 7.523
Volume 6, Issue 3, 87-95. Research Article ISSN 2277–7105

PRESCRIBING TREND OF DRUGS UTILIZED IN THE ISCHEMIC HEART DISEASE(IHD) MANAGEMENT IN A TERTIARY CARE HOSPITAL IN KARACHI.

Dr. Maqsood Ahmed Khan*[1], Prof. Dr Ali Akber Sial[1], Syed Imran Ali[1], Zaib-un-isa[1], Dr. Rasheeda Fatima[1], Dr. Meena Mairaj[2], Dr. Aisha Khan[2] and Dr. Maryam Ahsan[2]

[1]Faculty of Pharmacy Ziauddin University

[2]Department of Pharmacy practice ziauddin university

Associate Professor, D-4 Bhittai Colony Korangi Karachi, Sindh, Pakistan.

Article Received on
28 Dec. 2016,

Revised on 18 Jan. 2017,
Accepted on 08 Feb. 2017

DOI: 10.20959/wjpr20173-7815

***Corresponding Author,**
Dr. Maqsood Khan
Faculty of Pharmacy
Ziauddin University
Associate Professor, D-4
Bhittai Colony Korangi
Karachi, Sindh, Pakistan.

ABSTRACT

Aims: The study aim was to analyse the prescribing trend of drugs utilized in the ischemic heart disease(IHD). **Settings and Design:** study consist of retrospective patient files reviews and analysis of patients with IHD who met the inclusion criteria. Study conducted in Tertiary Care Hospital in Karachi. **Materials and Methods:** patients' data who fulfill the inclusive criteria condition collected in specially designed case record forms. Patient data such as, demographics, risk factors procedures and investigations performed during the hospital stay were collected. **Statistical Analysis Used:** Descriptive statistics were used to determine frequencies and percentages of characteristics, risk factors and medication used. SPSS version 15 were used to Perform analysis. **Results:** Age groups 51-60years (38.66%) were found to be more likely to IHD. In this study, we finds that. (Aspirin and Clopidogrel) antiplatelet,(nitrglycerine as antiangina,(metoprolol) as (beta blocker antihypertensive), atorvastatin as lipid lowering agent and enoxaparin as anticoagulant agent were mostly prescribed in this hospital. **Conclusions:** Aspirin , Clopidogrel (antiplateleta), nitrglycerine as antiangina, metoprolol as beta blocker (antihypertensive) and atorvastatin as lipid lowering agent and enoxaparin as antcoagulant agent were frequently prescribed in this hospital and data were analyzed based on different focused updates of ACC/AHA guidelines for the management of patients with stable ischemic heart disease.

KEYWORDS: *Clopidogrel, Aspirin, coronary artery disease, prescription pattern.*

INTRODUCTION

Cardiovascular disease (CVD) ranked as one of the fundamental health concern, usually affects most of individuals globally and a main source of morbidity and mortality. It has been recognized by World Health Organization(WHO) leading cause of death as well. The reported incidence of CVD deaths found was approximately17.5 million with incorporation of 30% global deaths in 2008. About more than 80% of CVD deaths occur each year in low- and middle-income countries such as Bangladesh.[1] WHO estimated that almost 20 million inhabitants may undergo for cardiac disorder and stroke by year 2015.[2] By 2020, the estimated prevalence recorded every third person of above age 45 years will suffer from hypertension in Pakistan, also ranked 4th most heavily populated country in terms of diabetic patients. Pakistani women are at a higher risk of cardiovascular disease due to the lack of leisure activities, high salt intake and dietary fats.[3] Similarly, it has been noticed that ischemic heart disease (IHD) is primary issue of mortality in high-income countries throughout world. IHD is a common manifestation of cardiac events caused by lack of oxygen supply to the myocardium.[4]

This inadequate act may lead to acute myocardial infarction acute myocardial infarction (AMI), fatal arrhythmia or most probably heart failure (Moran et al). Emerging data on the occurrence of IHD is available in developing countries like India and other Asian regions.[5] It is considered the most costly therapy in terms of several factors including hospitalizations, consultancy and lost productivity due to premature death.[6]

This study was performed to determine the disease burden of ischemic heart disease in karachi and the prescribing trend. Since incidence of cardiovascular diseases is increasing in the under-developed and developing countries and deaths due to ischemic heart disease can be minimized by adjusting the risk factors, it is important to know about the magnitude of these factors in our patient population with ischemic heart disease.

METHODOLOGY

study design

This study was a retrospective study and study was performed in a 100 beds tertiary care hospital attached with a medical college situated in Karachi. Study permission was taken from the hospital administration.

Patients

Adult patients possessed (≥18 years age) hospitalized with a diagnosis of IHD were included in the study.

Sample size

Over all we assessed 700 documents of cardiovascular ailment patients, from which we isolated the IHD patient's records. From isolated IHD records we chose the most significant 75 IHD patients documents.

Retrospective Selection

Patient's records including demographic characteristics, laboratory and diagnosis, medication and hospital stay was taken from the patient record file. The patient records were reviewed by 4 trained individuals, who used a structured form to record the required information, and the most relevant of these were evaluated.

Study time period

This one-year, retrospective, a tertiary care university teaching hospital-based study was conducted between August 2014-June 2015.

Statistical Analysis

At first every one of the information were organized in the excel sheet and particular coding were utilized for every factors. Frequencies, percentages, means, medians were controlled by utilizing descriptive statistical investigation of SPSS version 15.

RESULTS

Table 1 shows the demography characteristics of the patients. The data was collected to evaluate the demography, and treatment pattern of ischemic heart disease. Over all we evaluated 700 files of cardiovascular disease patients. In this study, we evaluated 75 patients with ischemic heart disease.

Demography

Age

The age of patients was 58.48 ±10.81years old. Patients were categorized in to seven age groups ranging from ≥18 years to ≤90 years. IHD was more frequent in the age group of 51-60 years and it is 38.66%. Table 1 summarized the age wise distribution of patient with IHD disease.

Gender

Over all 75 patients were evaluated in this study, with 59(78.66%) males and 16(21.33%) females in these patients 17(22.66%) patients were smoker and 58(77.3%) patient were nonsmoker which shows that smoking is more frequent in males than females. shortness of breath and Chest pain were the most commonly found symptom of patient. Detail of the occupation of the patients are summarized in table 1.

Diseases associated risk factors for IHD

Table 2 summarized the disease associated risk factors for IHD. The presence of risk factors were separately evaluated for male and female patients. Hypertension and diabetes were more frequent in man (23(38.98%), 3(5.08%) compared to females (5(31.25%),1(6.25%). In this study bicomorbid condition of hypertension and diabetes were more prevalent in male than female. Family history and smoking was more prevalent in males than females patients.

Interventional procedures

Angiography was carried out in 100% of patients admitted with IHD. Percutaneous Coronary Intervention and Coronary artery bypass graft Surgery (CABG) were carried out in 67(89.33%) and 6(8%).

Medication used in the management of IHD. Table 3 represents the drug categories used during management of ischemic heart disease were beta blocking agents, anti angina drug. angiotensin II receptors blocking agent, ACE inhibitors, diuretics, ca channel blocking agent, antiplatelet, anticoagulant and lipid lowering agent. mostly prescribed drugs used for the management of IHD were antiplatelet (asprin 100%,clopidogril 97.33%), anticoagulant (enoxaparin 50.66%), lipid lowering agent (atorvastatin 54.66%, rosuvastatin 46.66%), beta blocking agent(metoprolol 36%), antiangina (nitroglycerine 46.66%), angiotensin II receptors blocking agent(Losartan 20%).

Table 1: Demographic characteristics.

Age	frequency	percentage
20- 30	1	1.33%
31-40	4	5.33%
41-50	12	16%
51-60	29	38.66%
61-70	21	28%
71-80	6	8%
81-90	2	2.66%

GENDER	FREQUENCY	PERCENTAGE %
MALE	59	78.66%
FEMALE	16	21.33%
SMOKING	**FREQUENCY**	**PERCENTAGE %**
SMOKING	17	22.66%
NON- SMOKING	58	77.33%
OCCUPATION	**FREQUENCY**	**PERCENTAGE %**
None	28	37.33%
Buisnessman/women	11	14.66%
Housewife	10	13.33%
Retired	14	18.66%
Wapda/ Government	3	4%
Private	3	4%
Doctor	2	2.66%
Banker	1	1.33%
Proffessor	1	1.33%
Shop keeper	1	1.33%
Lawyer	1	1.33%
SYMPTOMS	**FREQUENCY**	**PERCENTAGE %**
Chest pain	35	46.66%
Chest pain, Shortness of breath	11	14.66%
Chest pain, anxiety	2	2.66%
Shortness of breath, palpitition, sweating	0	0%
Chest pain, shortness of breath, dyspnea	1	1.33%
Shortness of breath, anxiety	1	1.33%
Chest pain, fever, anxiety	2	2.66%
Chest pain, nausea, vomitting	5	6.66%
Chest pain, nausea, vomitting, shortness of breath	3	4%
Chest pain, dyspnea	3	4%
Chest pain, sweating, palpitition	2	2.66%
Chest pain, anxiety, palpitition	3	4%
chest pain, high BP, shortness of breath	3	4%
Chest pain, shortness of breath, anxiety, palpitition	4	5.33%

Table 2: Diseases associated risk factors for IHD.

RISK FACTORS	Male n=59(78.66%)	Female n=16(21.33%)	Over all n=75
Hypertension	23(38.98%)	5(31.25%)	28(37.33%)
Diabetes	3(5.08%)	1(6.25%)	4(5.33%)
Hypertension & diabetes	18(30.51%)	7(43.75%)	25(33.33%)
Family history	10(16.95%)	5(31.25%)	15(20%)
Smoking	16(27.12%)	0	16(27.12%)

Table 3: Cardiac drugs.

CARDIAC DRUGS	FREQUENCY	%
betablocking agent		
Metoprolol	27	36

Bisoprolol	24	32
Atenolol	5	6.66
antiangina		
Nitroglycerine	35	46.66
Isosorbide	16	21.33
GlycerylTrinitrate	8	10.66
angiotensin receptors II bloking agent		
valsartan	9	12
Losartan	15	
ACE inhibitors		
Lisinopril	10	13.33
Ramipril	5	6.66
Captopril	5	6.66
diuretic		
Spironlactone	9	12
furosemide	14	18.66
Amiloride HCL	15	20
calcium channel bloker/antihypertensive		
Amlodipine	5	6.66
Diltiazem	3	4
ANTIPLATLET		
Aspirin	75	100
Clopidogrel	73	97.33
Tirofiban	25	33.33
ANTICOAGULANT		
Enoxaparin	38	50.66
Heparin	1	1.33
LIPID LOWERING DRUG		
Rosuvastatin	35	46.66
Atorvastatin	41	54.66
Simvastatin	3	4

DISCUSSION

Comparative significance of coronary heart disease differ in degree across regions and from one country to another country. The disease is more frequent in westernized society, adults over the age of 60 years were majorly effected , but it is an emerging disease in developing countries as well.[7]

In this study, asprin and clopidogril were mostly prescribed. According to 2009 focused Updates of ACC/AHA guidelines for the management of patients with ST-elevation myocardial infarction, patients with definite or likely UA/ NSTEMI selected for an invasive approach should receive dual-antiplatelet therapy. Aspirin should be initiated on presentation and Clopidogrel is approved as a second antiplatelet agent.as anticoagulant the mostly prescribed drug was Enoxaparin (50.66%) and heparin (1.33%). Treatment of CAD with

Aspirin is proved to be effective and inexpensive. Although, the use of Aspirin for patients with ACS is recommended by many clinical guideline [8] In a study conducted by Kessler C et al 2012[9] and highlighted that the use of asprin in combination with clopidogril is less expensive than any other agent with clopidogril according to another study conducted by Ho WK et al 2004 [10] who explained that the posibility of serious vascular events myocardial infarction, stroke or cardiovascular death is reduced by approximately 20% in a broad range of high-risk patients and due to its comparative safety, economical and cost-effectiveness aspirin remains the first-line antiplatelet drug. clopidogrel reduces the risk of serious vascular events by approximately 10% as compared to aspirin alone and patients with non-ST-segment elevation acute coronary syndrome the combination of aspirin and clopidogrel reduces the risk by approximately 20%. In this study the mostly prescribed antihypertensive therapy was beta blocker (metoprolol 36%). The (2014) American Heart Association (AHA)/American College of Cardiology (ACC)/American Society of Hypertension (ASH) guideline statement now elevates beta-blockers (BB) to the similar level of suggestion as other classes of hypertension drugs in the treatment of patients who have hypertension and ischemic heart disease.[11] In our study the mostly prescribed lipid lowering agent was atorvastatin 54.66% and the result is supported by the ACC/AHA 2014 guideline which recommend the use of statin for decreasing chlestrol.[12] The results are according to the guideline. In the present study the mostly prescribed antianginal drug was nitroglycerine the current guideline of 2014 ACC/AHA.[13] recommend the use of nitroglycerine for the treatment of unstable angina and no stelevetation myocardial infarction.In the present study the mostly prescribed anticoagulant was enoxaparin which is according to the ACC/AHA 2014[13] guideline also recommend the use of enoxaparin as an anticoagulant therapy for the management of coagulation in nonST elevation ACS patient.

CONCLUSION

Aspirin and Clopidogrel(antiplateleta), nitrglycerine as antiangina, metoprolol as beta blocker (antihypertensive) and atorvastatin as lipid lowering agent and enoxaparin as antcoagulant agent were frequently prescribed in this hospital and facts were studied according to updates of 2014 ACC/AHA guidelines for the cure of patients with stable ischemic heart disease.

REFERENCES

1. Bangladesh Bureau of Statistics. Available at: http://www.bbs.gov.bd/. Accessed January, 2009.
2. Abdul MuhitCardiovascular disease prevalence and prescription patterns at a tertiary level hospital in BangladeshJournal of Applied Pharmaceutical Science, 2012; 02(03): 80-84.
3. *Yaseen F. Association of resistin& interleukin 6 in ischemic heart disease and diabetic patients*. *Pak J Med Dent*., 2014**;** 3(1): 17-22.
4. Andrew E. Moran et al Assessing the Global Burden of Ischemic Heart Disease Part 1: Methods for a Systematic Review of the Global Epidemiology of Ischemic Heart Disease in 1990 and 2010 Global Heart, 2012; 7(4).
5. Gurung Ram Bahadur, Pant Pankaj, Pokharel Baburam, Koju Rajendra, Bedi TRS.5 Review of Ischemic Heart Disease Patients admitted in Dhulikhel Hospital NHJ, 2010; 7(1).
6. Cynthia Robitaille1 et al Surveillance of ischemic heart disease should include physician billing claims: population-basedevidence from administrative health data acrossseven Canadian provincesBMC Cardiovascular Disorders, 2013; 13: 88.
7. Shahid Hafeez, Asim Javed, Azhar Mahmood Kayani Clinical profile of patients presenting with acute ST elevation myocardial infarction J Pak Med Assoc, 2010; 60(3).
8. Pranay Wal, Ankita Wal, Vandana R. Nair, A. K. Rai, and Umeshwar Pandey Management of coronary artery disease in a Tertiary Care Hospital J Basic Clin Pharm. March 2013-May 2013; 4(2): 31–35.
9. Kessler C, Thomas K, Kao J. Antiplatelet therapy for secondary prevention of acute coronary syndrome, transient ischemic attack and noncardioembolic stroke in an era of cost containment. J Investig Med., 2012; 60(5): 792-800. doi: 10.2310/JIM.0b013e31824e9a50.
10. Ho WK, Hankey GJ, Eikelboom JW Prevention of coronary heart disease with aspirin and clopidogrel: efficacy, safety, costs and cost-effectiveness Expert Opin Pharmacother. 2004 Mar; 5(3): 493-503.
11. Agbor-Etang BB, Setaro JF. Management of Hypertension in Patients with Ischemic Heart Disease. Curr Cardiol Rep, 2015 Dec; 17(12): 119. doi: 10.1007/s11886-015-0662-0.
12. Thomas M. Maddox, MD, MSc; William B. Borden, ; Fengming Tang; Salim S. Virani; Implications of the 2013 ACC/AHA Cholesterol Guidelines for Adults in Contemporary

Cardiovascular Practice Insights From the NCDR PINNACLE Registry JACC journal, 2014; 64(21).

13. http://circ.ahajournals.org/content/early/2014/07/25/CIR.0000000000000095.