



IJPPR

INTERNATIONAL JOURNAL OF PHARMACY & PHARMACEUTICAL RESEARCH
An official Publication of Human Journals

ISSN 2349-7203




Human Journals

Research Article


July 2023 Vol.:27, Issue:4

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Retrospective Study on Prescribing of Antiplatelets and Anticoagulants in Cardiovascular Disease Patients



IJPPR
INTERNATIONAL JOURNAL OF PHARMACY & PHARMACEUTICAL RESEARCH
An official Publication of Human Journals



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Submitted: 23 June 2023
Accepted: 12 July 2023
Published: 30 July 2023



HUMAN JOURNALS

ijppr.humanjournals.com

Keywords: Interspecific hybridization, Intervarietal hybridization, *Cicer arietinum*, *Cicer reticulatum*, Variability

ABSTRACT

Objective: To determine the prescribing pattern of antiplatelets and anticoagulants in cardiovascular disease patients with or without comorbidities and drug interaction between drugs used to treat cardiovascular disease and other drugs prescribed.

Method: A retrospective observational study design was conducted. Records of patients admitted with cardiovascular diseases were included. Patient characteristics like current life style, comorbidities. Data is collected from inpatient case sheet, case records, medication chart and laboratory reports.

RESULT: Total of 100 patients undergone antiplatelet and anticoagulant therapy were enrolled in the study based on study criteria. The cases were categorised based on gender, age, types of disease and medicines used. Out of 100 patients, 14 patients were having a single disease condition, 46 patients were having a two disease condition, 38 patients were having a combination of three diseases and 3 patients were having a combination of four cardiac and cerebrovascular disease.

CONCLUSION: The present study concludes that the incidence of Cardiovascular disease and increase with increase in age. Majority of the patients were in the age group of 61-70 years. The incidence of Cardiovascular disease were more common in male patients than in female patients. Dyslipidemia was found to associated with Cardiovascular diseases. There were more patients with 2-3 Cardiovascular disease conditions and most patients were having ACS+MI+HTN. Aspirin was the commonly prescribed Antiplatelet and LMWH was the commonly prescribed Anticoagulant.

INTRODUCTION

Cardiovascular disorder is a group of disorders of heart and blood vessels. It is the leading cause of death globally contributing to 17.9 million death each year (32% of all death). It is usually associated with build-up of fatty deposits inside the arteries (atherosclerosis) and an increased risk of clots. Common cardiovascular diseases include Hypertension, Myocardial Infarction, Angina Pectoris, atrial Fibrillation, Rheumatic Heart Disease, Aortic Stenosis, Cardiac Heart Failure etc. Hypertension—or elevated blood pressure—is a serious medical condition that significantly increases the risks of heart, brain, kidney and other diseases. Acute coronary syndromes including unstable angina and myocardial infarction involve rupture of an atherosclerotic plaque with subsequent platelet adherence, activation and aggregation, and the activation of the clotting cascade. Ultimately, a clot forms composed of fibrin and platelets. There is demonstration of myocardial cell necrosis due to significant and sustained ischaemia in MI. Angina pectoris is acute cardiac pain caused due to myocardial ischemia. Atrial fibrillation is supraventricular tachyarrhythmia characterized by uncordinated atrial activity and defective mechanical function. Heart failure is a chronic, progressive condition in which the heart muscle is unable to pump enough blood to meet the body's needs for blood and oxygen. Aortic stenosis (AS) is a narrowing of the aortic valve, obstructing blood flow from the left ventricle to the ascending aorta during systole. Rheumatic heart disease (RHD) is a life-threatening heart condition that results from damage to heart valves caused by one or several episodes of rheumatic fever, an autoimmune inflammatory reaction to infection with streptococcal bacteria. Antiplatelet and anticoagulant therapy significantly bring down the percentage of morbidity and mortality in CVD patients.

METHODS AND MATERIALS

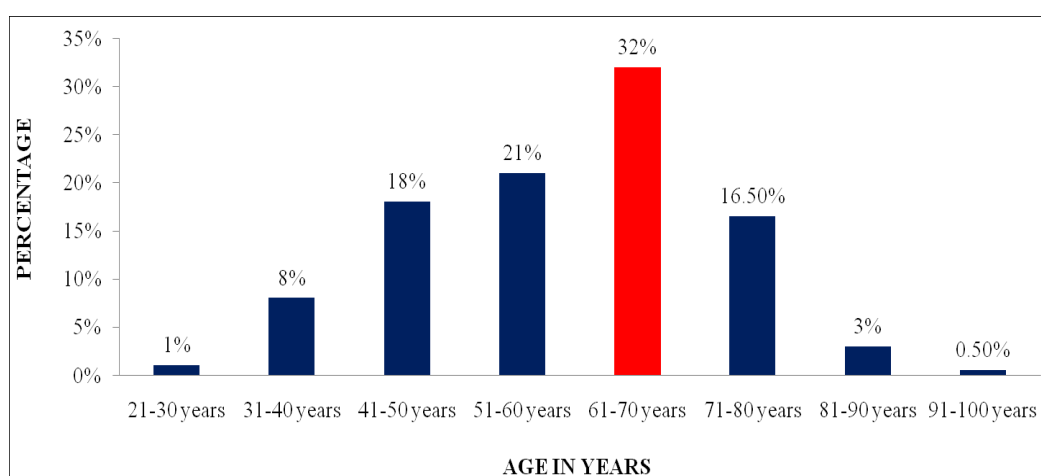
A Retrospective study was conducted in PVS HOSPITAL (P) Ltd. after getting the approval from Research Monitoring Committee. Case records of Cardiovascular patients admitted in the hospital during the period of 5 years. An assessment of the patient's characteristics like current lifestyle, and comorbidities were done. Data was collected from inpatient case sheets, case records, medication charts, and laboratory reports. Patients having cardiovascular diseases receiving antiplatelet drugs and anticoagulants with comorbidities and complications have been included in the study. A data collection form (Annexure 1) was used to record the drug therapy in patients with cardiovascular diseases.

RESULTS AND DISCUSSION

This study was conducted in PVS Hospital (P)Ltd, Calicut. A total of 100 patients undergoing antiplatelet and anticoagulant therapy were enrolled in the study based on study criteria. The cases were categorized based on gender, age, types of disease and medicines used.

AGE WISE DISTRIBUTION

These results were in concordance with studies conducted by Ahmed(2020) And Laxman Wagle *et al.*,(2017).



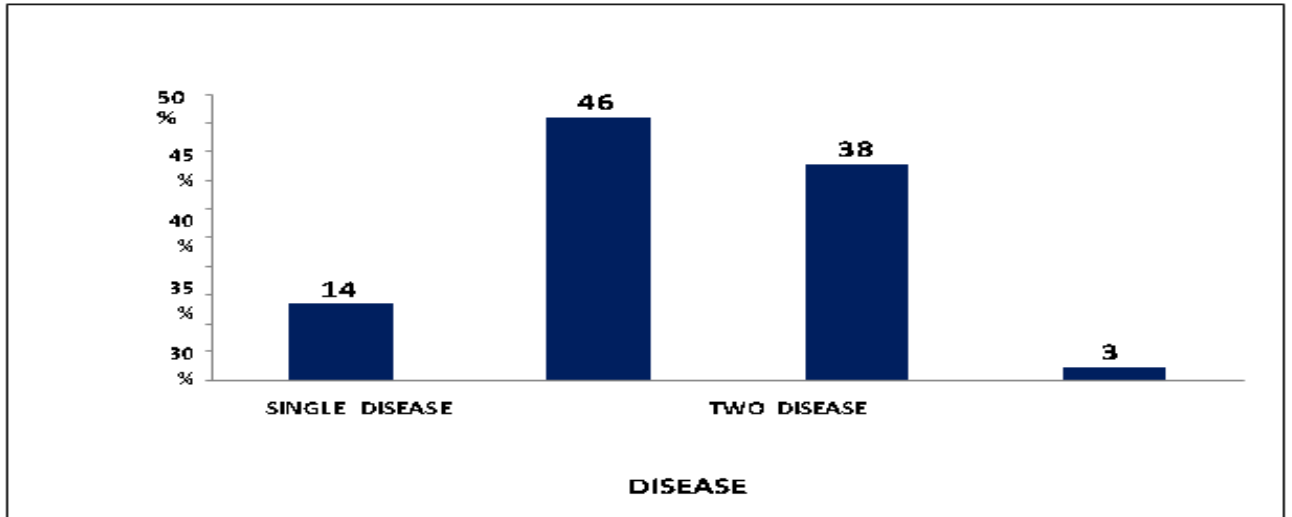
GENDER WISE DISTRIBUTION

GENDER	NO. OF PATIENTS	PERCENTAGE
Male	65	65%
Female	35	35%

The result was similar to the study conducted by Pramod B *et al.*, and Mohammed Saleem *et al.*

DISEASE WISE CATEGORIZATION

Out of 100 patients, 14 patients were having a single disease condition, 46 patients were having a two-disease condition, 38 patients were having a combination of three diseases and 3 patients were having a combination of four cardiac and cerebrovascular diseases.



CATEGORIZATION BASED ON CARDIOVASCULAR DISEASE

PATIENT CATEGORIZED BASED ON A SINGLE CARDIOVASCULAR DISEASE CONDITION

SL NO	DISEASE	NO.OF PATIENTS	PERCENTAGE(%)
1	Coronary Artery Disease	4	28.5%
2	Hypertension	3	21.4%
3	Angina	2	14.2%
4	Arrhythmia	1	7.1%
5	Artrial Fibrillation Alone	1	7.1%
6	Left ventricular Dysfunction	1	7.1%
7	CCF only	2	14.2%

PATIENT-BASED ON TWO CARDIOVASCULAR DISEASES

DISEASE	NO.OF PATIENTS	PERCENTAGE(%)
ACS+MI	12	26%
IHD+HYPERTENTION	9	19.5%
IHD+LVD	6	13%
IHD+AF	6	13%
DCM+LVD	2	4.3%
DCM+HTN	2	4.3%
DCM+IHD	2	4.3%
ACS+Angina pectoris	2	3%
AF + RHD	1	2.1%
Angina pectoris + RHD	1	2.1%
AF+HTN	1	2.1%
Angina + HTN	2	4.3%

PATIENT-BASED ON THREE CARDIOVASCULAR DISEASE CONDITION

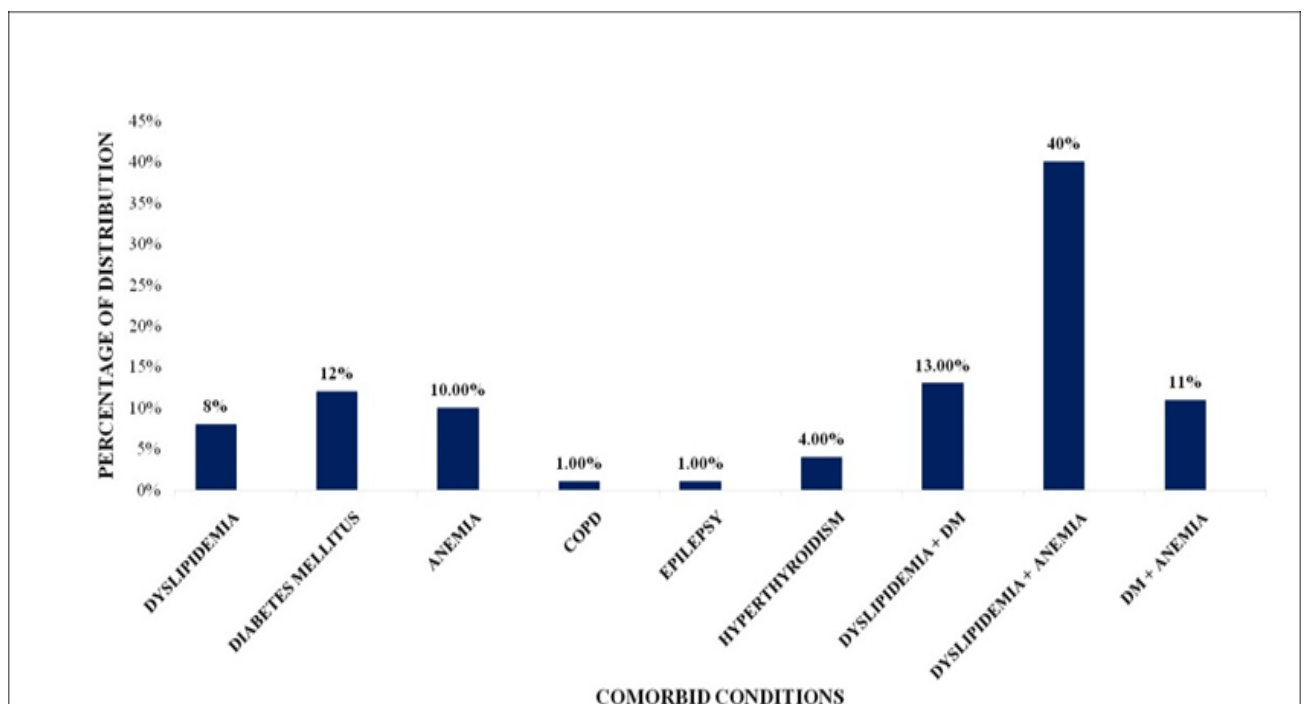
DISEASE	NO.OF PATIENTS	PERCENTAGE (%)
ACS+MI+HTN	15	39.4%
CCF+IHD+HTN	9	23.6%
IHD+LVD+HTN	5	13.1%
IHD+LVD+AF	5	13.1%
DCM+LVD+ANGINA	2	5.2%
IHD+HTN+MI	1	2.6%
CCF+IHD+ANGINA	1	2.6%

PATIENT CATEGORIZATION BASED ON FOUR CARDIOVASCULAR DISEASE CONDITIONS

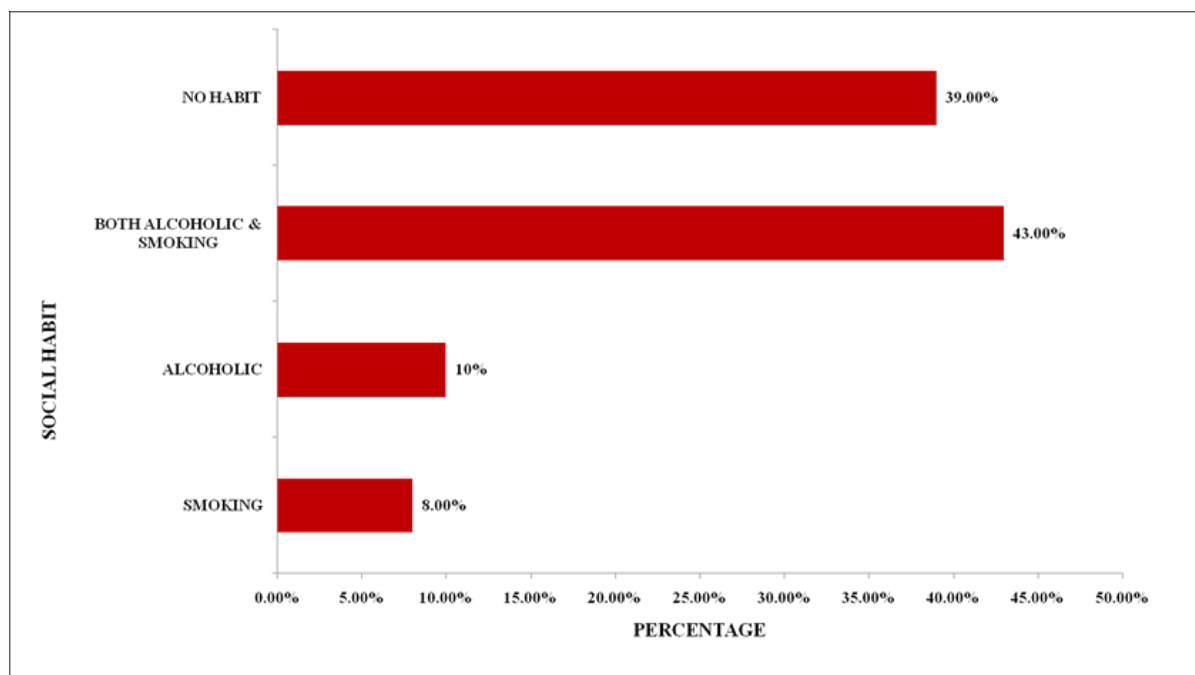
DISEASE	NO. OF PATIENTS	PERCENTAGE (%)
CCF+IHD+LVD+HTN	3	100%

DISTRIBUTION BASED ON COMORBID CONDITIONS

Out of 100 patients, 61 (61%) patients were having dyslipidemia as the common comorbid condition along with cardiovascular diseases.



DISTRIBUTION BASED ON SOCIAL HABIT

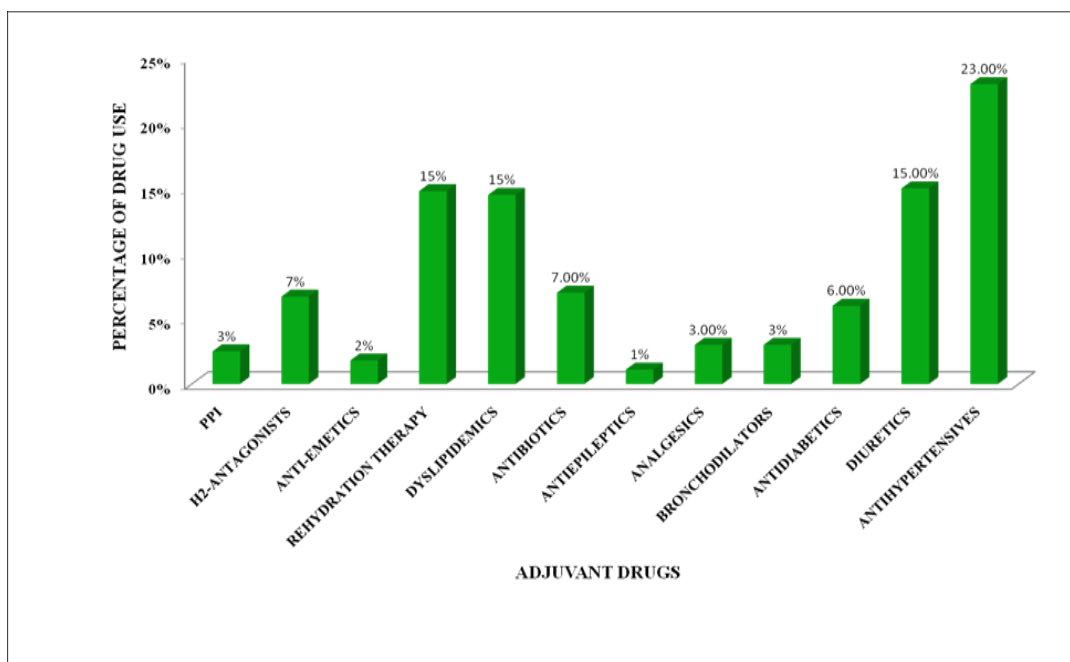


COMBINATION	NO. OF PATIENTS	PERCENTAGE (%)
Aspirin alone	17	17%
Clopidogrel alone	4	4%
Aspirin+Clopidogrel	37	37%
Aspirin+Ticagrelor	1	1%
Aspirin+LMWH	3	3%
Aspirin+ Clopidogrel+LMWH	34	34%
Aspirin+Clopidogrel+Acenocoumarol	4	4%

COMMONLY PRESCRIBED COMBINATION

ADJUVANT MEDICATIONS

Antiplatelet and anticoagulant therapy include antiplatelet and anticoagulant medicines accompanied by adjuvant and supplementary therapeutic measures. These additional medicines other than the antiplatelet and anticoagulant medicines are for reducing the symptoms and conditions seen in the patient. In 100 prescriptions we found 627 drugs were prescribed as adjuvant medications.



DRUG INTERACTION

DRUG	INTERACTION	SEVERITY	NO. OF PATIENTS	PERCENTAGE
Clopidogrel	Atorvastatine	Moderate	6	21%
Clopidogrel	Pantaprazole	Moderate	9	32%
Aspirin	Telmisartan	Moderate	5	17%
Clopidogrel	Escitalpram	Moderate	1	3%
Aspirin	Escitalpram	Moderate	2	7%
Aspirin	Amlodipin	Moderate	2	7%
Prazosin	Aspirin	Moderate	1	3%
Aspirin	Insulin	Moderate	2	7%
Dabigatran	Pantaprazole	Moderate	1	3%
Aspirin	Glimpride	Moderate	1	3%
Clopidogrel	Amiadarone	Moderate	1	3%
Aspirin	Losartan	Moderate	1	3%
Aspirin	Furosemide	Moderate	1	3%

DISCUSSION

- In our study was found that prevalence of CVD was higher in age group 61-70.
- Incidence was higher in male (65%) as compared to females (35%).
- Dyslipidemia was found to be the most common comorbid condition associated with CVD.
- Patient who had both alcoholic and smoking habits had higher incidence of CVD (43%).
- Antiplatelets were most commonly prescribed for inpatients.
- Dual antiplatelet therapy (aspirin+clopidogrel) was prescribed for most patients (37%).
- Aspirin was most commonly prescribed antiplatelet drug(17%)
- LMWH most commonly prescribed anti-coagulant.
- Atorvastatin and Pantoprazole when administrated with clopidogrel showed most number of interactions.

ACKNOWLEDGEMENT

We are thankful to our guide and responsible members of our institute for all the support and assistance offered during the period of our study.

CONCLUSION

A Retrospective study was conducted to study the prescribing patterns of Antiplatelets and Anticoagulants for patients with Cardiovascular disease. The present study concludes that the incidence of Cardiovascular disease increases with increase in age. Majority of the patients were in the age group of 61-70 years. The incidence of Cardiovascular disease were more common in male patients than in female patients. Dyslipidemia was found to be associated with Cardiovascular diseases. There were more patients with 2-3 Cardiovascular disease condition and most patients were having ACS+MI+HTN. Aspirin was the commonly prescribed Antiplatelet and LMWH was the commonly prescribed Anticoagulant. Our study also concludes that Combination therapy was beneficial over Monotherapy.

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