



Prescription Trends for Stable Angina Management in a Tertiary Care Hospital

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KEYWORDS

Stable angina, prescription trends, tertiary care hospital, anti-anginal therapy, cardiovascular management

ABSTRACT:

Background: Stable angina is a common manifestation of coronary artery disease, requiring optimal medical management to prevent complications and improve patient outcomes. Understanding prescription patterns in a tertiary care setting can help evaluate adherence to clinical guidelines and identify areas for improvement.

Objective: This study aims to analyze the prescription trends for stable angina management in a tertiary care hospital, assessing the utilization of anti-angina agents, antiplatelet therapy, lipid-lowering drugs, and other adjunctive medications.

Methods: A cross-sectional study was conducted by reviewing medical records of stable angina patients receiving treatment at a tertiary care hospital. Data on demographic characteristics, prescribed medications, and adherence to guideline-based therapy were collected and analyzed.

Results: The study findings indicate that Anti-Platelet agents, β -blockers and calcium channel blockers were the most frequently prescribed anti-angina agents, followed by nitrates. While statins were prescribed in most cases for lipid control. A proportion of patients received additional agents such as ACE inhibitors or ARBs for cardiovascular risk reduction.

Conclusion: The prescription trends observed in this study align with established treatment guidelines for stable angina. However, variations in prescribing patterns highlight the need for continuous evaluation and reinforcement of evidence-based practices to optimize patient care. Further research is needed to assess long-term outcomes associated with different treatment strategies.

1. Introduction

Angina pectoris, also referred to as angina, is a medical ailment that causes a brief decrease in blood flow to the heart muscle, which results in chest pain or discomfort. Usually brought on by constricted or blocked coronary arteries, it happens when the heart muscle (myocardium) does not receive enough oxygen-rich blood (coronary artery diseases). The fundamental cause is an imbalance in oxygen supply and demand brought on by vasospasm or atherosclerosis. The incidence rate of cardiovascular diseases (CVDs) remain a leading cause of mortality in the country. In 2016, 27% of deaths in India were

attributed to CVDs, accounting for 45% of deaths in the 40-69 year age group. A study analyzing data from 2017–2018 reported that 4.16% of older males and 3.55% of older females in India had been diagnosed with heart diseases. Additionally, 4.69% of older males and 7.02% of older females exhibited symptom-based angina.

TYPES OF ANGINA PECTORIS:

Angina pectoris is classified into several types based on its characteristics, severity, and triggers. Here are the main types of angina pectoris:



1. Stable Angina:

- Predictable pattern of chest pain or discomfort
- Triggered by physical exertion or emotional stress
- Relieved by rest or medication (e.g., nitroglycerin)

2. Unstable Angina:

- Unpredictable pattern of chest pain or discomfort
- May occur at rest or with minimal exertion
- May signal an impending heart attack

3. Variant Angina (Prinzmetal's Angina):

- Caused by coronary artery spasm
- Typically occurs at rest, often between midnight and early morning
- May be relieved by calcium channel blockers

4. Microvascular Angina:

- Caused by dysfunction of the small blood vessels (microvasculature) in the heart
- May present with chest pain or shortness of breath
- Often diagnosed using cardiac catheterization or other tests

5. Nocturnal Angina:

- Occurs at night, often waking the person from sleep
- May be related to sleep apnea, acid reflux, or other conditions

6. Decubitus Angina:

- Occurs when lying down or in a specific position
- May be related to heart failure or other conditions

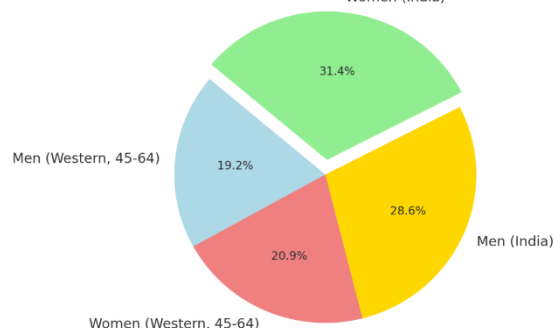
Each type of angina has distinct characteristics, and accurate diagnosis is crucial for effective treatment and management.

EPIDEMIOLOGY

In Western countries, between 30,000 and 40,000 people per million suffer from chronic stable angina. For both men and women, prevalence rises with age. According to the estimations, the prevalence is 4–7% for men and 5–7% for women aged 45–64. According to India's epidemiology, the prevalence rate of angina pectoris in

middle-aged and older persons is approximately 8.6%, with a slightly greater percentage among women.

Prevalence of Chronic Stable Angina by Demographic Group
Women (India)



Here is a pie chart showing the prevalence of chronic stable angina among different demographic groups in Western countries and India. It highlights the higher prevalence among Indian women.

2. Objectives

This study aims to analyze the prescription trends for stable angina management in a tertiary care hospital, assessing the utilization of anti-angina agents, antiplatelet therapy, lipid-lowering drugs, and other adjunctive medications

INCLUSION AND EXCLUSION:

Patients over 35 years old were chosen at random from hospital outpatient departments, with equal preference given to both sexes. Patients with post-bypass angina, Prinzmetal angina, and unstable angina were not included.

3. Methods

Data from the prescriptions of patients with stable angina in tertiary care hospitals was gathered for a cross-sectional study between January and April of 2024. The primary study parameter was the prescribing patterns for stable angina, and 200 prescriptions were gathered and examined for the medications prescribed. Each patient's medication profile, which included all prescription information, and medical service file, which included information on the type of visits, hospital test results, and medication instructions, were examined. Additionally, patients were questioned verbally to obtain more information. SPSS 20 was used to perform the statistical



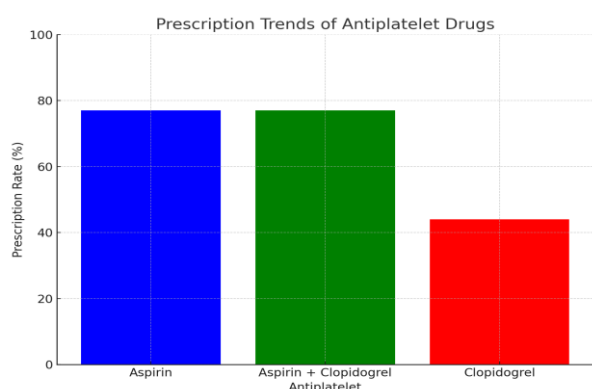
analysis of the data, and the findings are displayed as pie and bar charts.

4. Results

The overall graphical presentation of drugs according to their percentages is represented

Antiplatelet Drugs

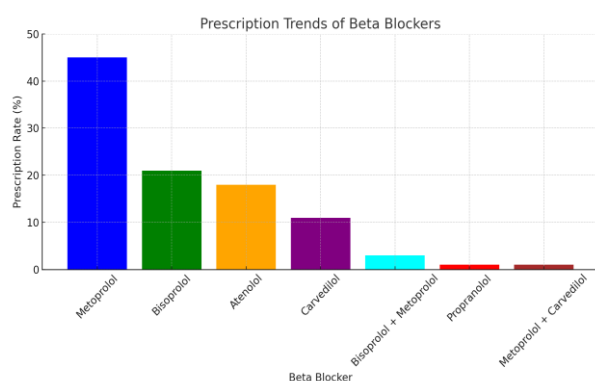
Aspirin is at the top of prescription with trend of (77%). While combination of aspirin and clopidogril also showed almost equal trend with a percentage of (77%). Clopidogril is the least prescribed Antiplatelet with (44%)



Beta Blockers (BB)

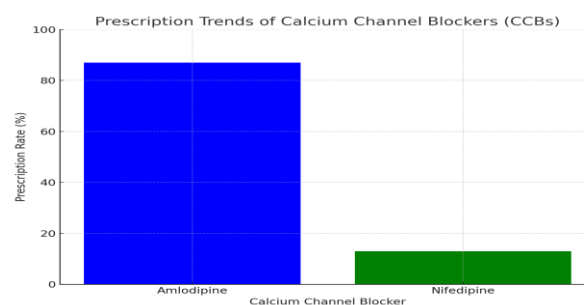
Metoprolol (45%) is the drug of choice in this class while Bisoprolol (21%) is the second most prescribed drug. Atenolol (18%) is the third most choice of physicians; Carvedilol (11%) is forth on rank. In combination Bisoprolol and metoprolol showed (3%) trend of prescription. Propranolol individually and in combination of metoprolol and carvedilol showed same trends of prescribing i.e. (1%)

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Calcium Channel Blockers (CCBs)

Calcium channel blockers are usually prescribed in co-morbid conditions in which beta blockers cannot be prescribed like COPD, patients on Digoxin therapy etc. Compared with beta blockers Calcium channel blockers are of less use. CCBs are prescribed in percentages as Amlodipine (87%) and Nifedipine with percentage of (13%)

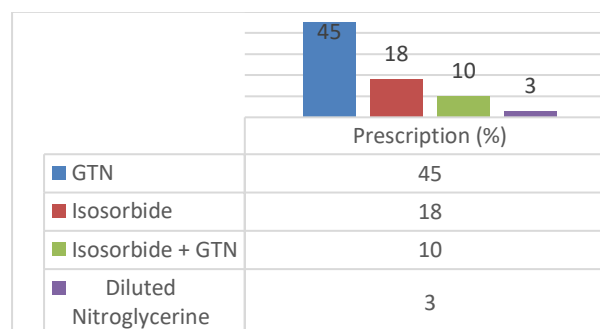


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Vasodilators

Among vasodilators class (45%) GTN is prescribed, while Isosorbide is prescribed (18%), combination of Isosorbide mononitrate and GTN is also being prescribed 10% while diluted Nitroglycerine was prescribed (3%)

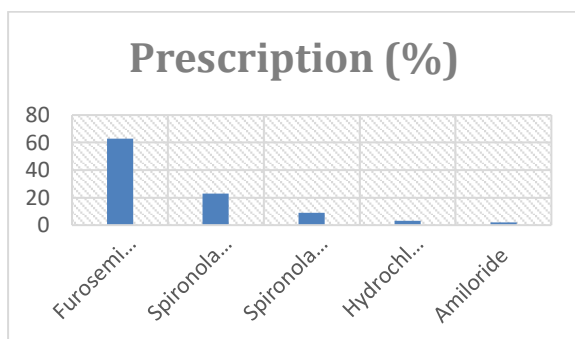


Diuretics

Diuretics are the backbone of treatment in maximum patients with cardiovascular diseases. The Frequency of drugs among this class is, Furosemide (63%),

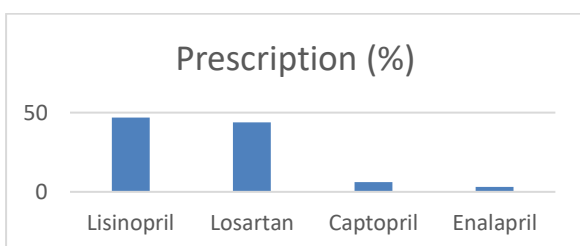


Spirolactone (23%), and Combination of Spirolactone with Furosemide is also surpassing many sole drugs with percentage of (9%), Hydrochlorothiazide 3% and Amiloride with (2%)



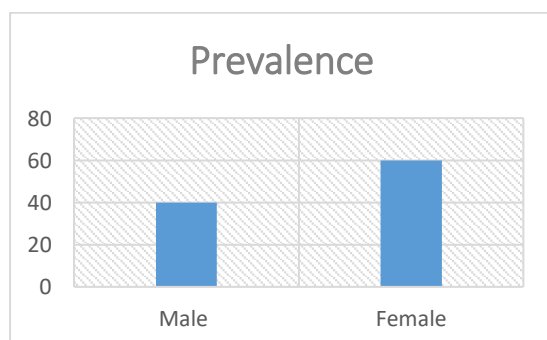
ACE Inhibitors/Angiotensin Receptor Blockers

Drugs under this class are further combination of two subclasses, however collectively the percentage of drugs of this class is Lisinopril (47%), Losartan (44%), Captopril 6% and Enalapril with percentage of (3%)



Prevalence of Stable Angina in Male vs. Females

In Literature, Studies revealed that men are at more risk of stable angina than women, while prognosis of disease is more severe and complex in females than males. The study-designed data graphically shows that in population of tertiary care hospital women are more vulnerable to occurrence of angina than men. The percentage of women is (60 %) which is more than that of men i.e. (40 %).



CONCLUSION:

Antiplatelet drugs, of which aspirin is the most commonly recommended, are the class of medications most commonly prescribed for stable angina at tertiary care hospitals. In contrast to the usual recommendations, women are more likely to develop stable angina as they age. At least one beta blocker should be included in the treatment for best results and safe medication use. In comparison to calcium channel blockers, beta-blockers have the same effects and are linked to less side effects.

In randomized trials of patients who have stable angina, (8%) of patients show withdrawal effects. Patients were less likely to discontinue β -blockers than calcium channel blockers.[18]The main objective is to prevent the patients for myocardial infarction, thrombolytic events and death, to improve the quality of life, to relief patients and alleviate the symptoms of disease. Males above 35 with increased serum lipids level should regularly check their B.P and should avoid fatty diet. By the opinion of experts of American college of cardiology/American heart association writing committee, evaluate the patients every 4 to 6 months during first year of treatment. If condition of patient is stable, annual assessment is organized and when angina symptoms become complicated, then appointment should take from relevant physician who will decide frequency of visit according to severity of disease. However, for this purpose, there should be no communication gap between physician and patient and proper counseling of patient is very important to improve life style.

REFERENCES:

1. Zanger DR, Solomon AJ, Gersh BJ. Contemporary management of angina: Part II. Medical management of chronic stable angina. *Am Fam Physician*. 2000;61(1):129-138. aafp.org
2. Hamra M, Taggart C, Cruden N. Managing stable angina in primary care. *Practitioner*. 2018;262(1819):17-22.thepractitioner.co.uk
3. Rousan TA, Thadani U. Stable angina medical therapy management. *Eur Cardiol*. 2019;14(1):50-56.
4. Fox K, et al. Guidelines on the management of stable angina pectoris: executive summary. *Eur Heart J*. 2006;27(11):1341-1381.



5. National Institute for Health and Care Excellence. Stable angina: management. NICE Clinical Guideline CG126. 2011.nice.org.uk
6. Medical treatment of stable angina: a tailored therapeutic approach. *Int J Cardiol.* 2016;220:445-453.internationaljournalofcardiology.com
7. Optimising prescribing for chronic stable angina. South West London Integrated Medicines Optimisation Committee. 2017.swlimo.southwestlondon.icb.nhs.uk
8. Stable angina guidelines. Cheshire Formulary. 2016. cheshireformulary.nhs.uk
9. Management of stable angina: a treatment strategy mnemonic. *Nurse Pract.* 2022;47(2):14-20.npjjournal.org
10. Pattern of medicine prescription in stable angina at a tertiary care hospital. *World J Pharm Med Res.* 2020;6(12):101-105. wjpmr.com
11. Prescribing pattern in coronary artery disease: a prospective study. *RRJ.* 2015;3(1):1-5. rroj.com
12. Antianginal. Wikipedia. 2024. en.wikipedia.org
13. Everything to know about stable angina. Health.com. 2024. health.com
14. Heart attack medication for prevention and ongoing management. Verywell Health. 2024. verywellhealth.com
15. Chronic coronary syndrome (previously known as stable angina). Barnsley Clinical Commissioning Group. 2022
16. Fox, K., Komajda, M., Ford, I., Robertson, M., Böhm, M., Borer, J. S., Ferrari, R. Effect of ivabradine in patients with left-ventricular systolic dysfunction: a pooled analysis of individual patient data from the BEAUTIFUL and SHIFT trials. *European heart journal*, 2013; 34(29): 2263-2270.
17. Tobin, K. J. Stable angina pectoris: what does the current clinical evidence tell us? *Journal of the American Osteopathic Association*, 2010; 110(7): 364.