



Analyzing incidents of angina pectoris retrospectively in a tertiary care hospital

¹Kavya Gangireddy, ²Ameena Ayesha Shaik and ³Meghana Kasana

¹⁻³Pharm D, Intern of Chalapathi Institute of Pharmaceutical Sciences, Chalapathi Nagar, Lam, Guntur, Andhra Pradesh, India

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Corresponding Author: Kavya Gangireddy

Abstract

Background: Angina pectoris, characterized by chest pain or discomfort, poses a significant health burden, especially in the elderly population. This retrospective cohort study aimed to analyze 100 cases of angina pectoris in a tertiary care hospital, focusing on risk factors and medication patterns.

Methods: It is a retrospective cohort study. Data were collected over six months in a tertiary care hospital, including patient demographics, angina types, and associated risk factors. Statistical analysis was conducted to identify patterns and trends in drug utilization.

Results: The study revealed a male predilection (73%) with the majority in the 61-70 age group (40%). Stable angina was prevalent (75%), and hypertension (61%) emerged as the primary risk factor, followed by high cholesterol (50%) and diabetes (45%). Smoking and alcohol intake were reported in 23% and 24% of cases, respectively. Most patients (98%) exhibited two or more risk factors. Antiplatelet therapy, predominantly Clopidogrel (89%) and Aspirin (87%), was common. Atenolol (79%), Amlodipine (83%), and Isosorbide dinitrate (82%) were prevalent among prescribed drugs. Dual antiplatelet therapy (Clopidogrel + Aspirin) was notable in 78% of cases.

Conclusion: The study underscores the predominance of stable angina, male gender as a significant risk factor, and a high prevalence of comorbidities. Antiplatelet therapy, especially dual therapy, emerged as a key pharmacological intervention. Addressing lifestyle factors and implementing preventive measures are crucial to mitigate the rising incidence of angina in the population.

Keywords: Angina pectoris, risk factors, drug utilization, coronary artery disease

Introduction

Angina pectoris is defined as a prolonged substernal chest pain, pressure, or discomfort that is relieved by rest and/or nitro-glycerine. It is typically exacerbated by exertion, anxiety, or other forms of mental or emotional strain. The pain or discomfort may radiate down the arms, up the neck, into the lower jaw, the epigastrium, and maybe even into the back. It often takes ten to fifteen minutes. Occasionally, people describe it as hurting or burning. In women and the elderly, angina may present more atypically or as an equal of anginal pain [1]. Angina symptoms include dizziness, palpitations, dyspnea, and weakness. Angina pectoris is thought to affect 10 million Americans, with over 500 000 new instances being identified in this nation each year. Three varieties of angina exist. stable angina. The most prevalent type of angina is stable angina. It usually happens after exertion or activity and goes away with rest or angina medication. Angina instability (a critical health condition). When at rest, unstable angina might strike at any time. On the other hand, the angina is becoming more severe and less

physically taxing to experience. It is typically more intense and lasts longer than stable angina—at least 20 minutes. Prinzmetal angina is a kind of angina [2]. Prinzmetal angina, another name for variant angina, is not caused by coronary artery disease. It is caused by a cardiac spasm in an artery that temporarily reduces blood flow. The main sign of angina variation is excruciating chest pain.

Approximately half of every case of angina occur in older adults (> 65 years of age). Older patients may not be able to use traditional antianginal therapies since they have more advanced coronary artery disease. In both men and women, angina prevalence rises with age. Women usually have coronary artery disease later in life than males do. Patients with angina are more likely to have common comorbidities include diabetes, hypertension, peripheral vascular disease, chronic obstructive pulmonary disease, and congestive heart failure.

With a high rate of death and morbidity, angina pectoris is a prevalent medical illness that typically requires medication to treat symptoms [2]. Drug Utilization Evaluation (DUE) is

a continuous, approved, and systemic process for quality improvement that aims to- Examine prescribing and/or drug use patterns; provide clinicians and other relevant groups feedback on results; develop standards and criteria that describe the best way to use drugs; and encourage appropriate drug use through interventions such as education [2-3]. For this reason, it's employed in our initiative to help hospitals use medications more sensibly [4-6]. For each patient, rational drug usage means prescribing a medication with a good track record at the right dosage and providing accurate information about how often and how long to take therapy. Therefore, using medications inappropriately poses a risk to patients and may result in longer hospital stays and higher therapy costs [4]. To guarantee the safe and efficient use of pharmaceuticals, it is necessary to periodically assess the drug use trends in a health care facility. Risk factor evaluation is a scientific method used to determine the potential risks associated with a drug, activity, way of life, or natural event [5].

We will assess risk variables in this study to identify the underlying cause of angina pectoris in the patients we have chosen for our hospital in an effort to stop more cases of the same complaints.

Materials and Methods

A total of 100 Anginal Pectoris cases from a tertiary care hospital's cardiology department participated in a retrospective cohort research. Prescriptions are collected as part of the study. The prescriptions were gathered from the tertiary care hospital's cardiology and intensive care unit, as well as the medical record department. For the course of six months. Patients diagnosed with angina pectoris above the age of eighteen, as well as those who are prepared to give their agreement, are the inclusion requirements. Patients younger than eighteen years of age are excluded. Ladies who are nursing or pregnant. Retrospective data collection was done on the study's data from the appropriate hospital departments. For analysis, prescription data collecting was entered into an Excel spreadsheet. The pattern of drug use and duration of therapy, primarily with prescribed medicines, are noted in addition to other important factors.

The majority of prescription drugs, drug use patterns, the prevalence of angina risk factors in the population, and the variety of types of angina that exist were noted. The patient or family members disclosed their smoking and alcohol consumption histories. Blood pressure greater than 140 mm Hg at the systolic and/or 90 mm Hg at the diastolic levels is referred to as hypertension, following WHO recommendation. Antihypertensive individuals participated in the trial. Diabetics were defined as those who had a fasting blood glucose level of more than or equal to 7.0 mmol/L or who were using anti-diabetic medication. Dyslipidemia is defined as total blood cholesterol of 200 mg/dl or above with declining HDL cholesterol of 40 mg/dl or less. Being obese was defined as having a body mass index (BMI) of more than 30 kg/m². Angina is more common in all first-degree relatives if there is a family history of coronary heart disease (CAD).

Statistical analysis: All of the data was gathered, entered into several Excel sheets according to its parameters, and then examined by creating a table to determine the results of each parameter, such as gender, age groups, and others. Retrospective design was used for the study. One hundred patients with angina pectoris who were all over the age of eighteen were chosen to be part of the study population. Both sexes were represented in the study population: 27 women and 73 men. Women who were pregnant or nursing, as well as patients under the age of 18, were not included in the study population. Prescriptions were gathered from the hospital's various departments. The data that was collected, which were then input into Microsoft Excel. The right tests were used in the analysis.

Results

The retrospective study included 100 patients. The Table 1 provides a comprehensive overview of key parameters related to a population, particularly focusing on individuals with coronary artery disease (CAD). The gender distribution indicates a predominant representation of males at 73%, with females comprising the remaining 27%. Age-wise, the majority falls within the 51-70 age group, constituting a significant 73% of the population. The prevalence of stable angina is notably high at 75%, while unstable angina and variant angina are observed in 24% and 1% of cases, respectively. Examining risk factors, the table reveals a diverse range of contributors to CAD. Diabetes mellitus is prevalent in 45% of the population, high cholesterol levels in 50%, and hypertension in 61%. Lifestyle factors such as smoking and alcohol consumption are reported in 23% and 24% of cases, respectively, while obesity affects 38% of individuals. Genetical history of CAD is present in 15% of cases. The distribution of risk factors is further detailed, with 2% having a single risk factor, 25% having two, 65% having three, and 8% having more than three risk factors. This comprehensive breakdown provides valuable insights into the demographic composition and risk profile of individuals with CAD, aiding in a more nuanced understanding of the population under consideration.

Table 2 In this medication profile, the majority of patients are prescribed Clopidogrel (89%), followed closely by Aspirin (87%). Atenolol is administered to 79% of the individuals, while Metoprolol is prescribed to a smaller percentage, constituting 20% of the cases. Amlodipine and Isosorbide dinitrate are prevalent among the patients, with 83% and 82% respectively. Atorvastatin is prescribed to 39% of the individuals. Regarding antiplatelet therapy, a significant portion of patients is on Clopidogrel (12%) or Aspirin (10%) alone. Notably, a substantial number of individuals (78%) are on a dual antiplatelet regimen, receiving both Clopidogrel and Aspirin concurrently. In terms of specific doses, the majority of patients on Clopidogrel are taking 75mg/day (85%), with a smaller percentage on a higher dose of 150mg/day (4%). As for Aspirin, a predominant number of patients are on a daily dose of 75mg (84%), while only a few are prescribed a higher dose of 150mg/day (3%).

Table 1: Risk Factors

Parameters	N(%)
Gender/Sex	
Male	73(73%)
Female	27(27%)
Age Group	
20-30	1(1%)
31-40	4(4%)
41-50	20(20%)
51-60	33(33%)
61-70	40(40%)
71-80	2(2%)
Type Of Angina	
Stable angina	75(75%)
Unstable angina	24(24%)
Variant angina	1(1%)
RISK FACTORS	
Diabetes mellitus	45(45%)
High cholesterol level	50(50%)
Smoking	23(23%)
Alcohol	24(24%)
Obesity	38(38%)
Family History of CAD	15(15%)
Hypertension	61(61%)
No. Of Risk Factors	
One risk factor	2(2%)
Two risk factors	25(25%)
Three risk factors	65(65%)
Over three	8(8%)

Table 2: Medications in Angina pectoris patients

Medications	N (%)
Clopidogrel	89(89%)
Aspirin	87(87%)
Atenolol	79(79%)
Metoprolol	20(20%)
Amlodipine	83(83%)
Atorvastatin	39(39%)
Isosorbide dinitrate	82(82%)
Antiplatelet Therapy	
Clopidogrel	12(12%)
Aspirin	10(10%)
Clopidogrel + Aspirin	78(78%)
DOSE OF Clopidogrel	
Clopidogrel 75mg/day	85(85%)
Clopidogrel 150mg/day	4(4%)
DOSE OF ASPIRIN	
Aspirin 75 mg per day	84(84%)
Aspirin 150 mg per day	3(3%)

Discussion:

The retrospective study included 100 patients. There were 27 girls (27%) and 73 males (73%) in the study population. A maximum of 40% of patients are in the age range of 61 to 70 years old. In each gender, male and female There were the most cases in this age range. A minimum of one percent of the patients belonged to the 20-30 age range. Three age groups – 41-50, 51-60, and 61-70 saw a greater frequency of angina, suggesting that angina incidence rises with patient age. Stable angina accounted for 75% of all cases of angina in the study population. One-fourth experienced unstable angina. In the population, variant angina was less common than angina (1%). Results from the study done by M.N. Krishna *et al.* [6] were similar.

Males experienced a higher prevalence of stable, unstable, and variant anginas than females. Of the 75 patients with stable angina, 53 (70.05%) were men and 22 (28.95%) were women. Out of the 24 patients suffering from unstable angina, 17 (70.83%) were male and 7 (29.17%) were female. Similar findings were reported in the research by Amsterdam EA *et al.* [7]. Stable angina was the most common kind in both males and females. Variant angina was found in one male participant and non-existent in the female population in the research population. This indicates that one of the main risk factors for angina is being a man.

The study population's most common risk factor was determined to be hypertension (61%) followed by diabetes mellitus (45%) and elevated cholesterol levels (50%). Of the participants in the study, 24% were alcoholics and 23% were smokers. Similar findings were reported in the research project led by M.N. Krishna *et al.* (2006) [6]. There were just two risk variables that applied to men. 38% of people were fat and 15% of people had CAD in their families. There were two or more cardiac risk factors in 98% of the study group, indicating a higher prevalence of risk factors in the community. The patient's most favored drug was antiplatelet therapy. Anti-anginal medications were also employed, including betablockers (Atenolol, Metoprolol), calcium channel blockers (Amlodipine), and nitrates (Isosorbide dinitrate). Patients also received anticoagulants and statins. The two antiplatelet drugs that were most frequently used were Clopidogrel and Aspirin. Ten percent of the population took aspirin alone, while twelve percent of the population used clopidogrel alone. In 78% of cases, the combination of aspirin and clopidogrel was administered. Out of the 89 patients who were taking clopidogrel, 85 received 75 mg of the medication daily, and 4 received 150 mg. Out of the 87 individuals who took aspirin, 84 received 75 mg daily and 3 received 150 mg daily.

Conclusion

It was discovered that stable angina predominated in the community more than unstable and variable angina. It was shown that compared to women, men were more likely to get angina. Males were shown to be more likely to be affected by any of the three forms of angina. This indicates that having a male gender is a significant angina pectoris risk factor. Roughly 50% of the patients had high blood pressure, diabetes, obesity, and high cholesterol. Stress, a change in lifestyle, and inadequate nutrition are all contributing to this. It was shown that hypertension was the most common risk factor for angina, followed by diabetes mellitus and high cholesterol. In first-degree relatives, the risk of angina is increased by a family history of CAD. In 98% of cases, there were several risk factors. Antiplatelet medicine was the most recommended treatment. The two antiplatelet medications that were most often utilized were aspirin and clopidogrel. Individual medication therapy was not preferred as combination therapy. Pharmacological treatment for angina was linked to numerous adverse effects. The population has a significant prevalence of angina risk factors, according to the current study. Because of the changes in lifestyle that come with growing urbanization, the incidence of angina is expected to rise substantially. There is an urgent need to educate the public

on the risk factors, encourage a healthy diet, and encourage physical activity. Guidelines for screening and preventive therapy programs must be developed in order to recognize and handle those who pose a significant risk of repeat incidents.

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