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KNOWLEDGE, ATTITUDE AND PRACTICES AMONG CORONARY ARTERY DISEASE PATIENTS IN SOUTH INDIA - A DESCRIPTIVE CROSS-SECTIONAL STUDY

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ABSTRACT

Background: Coronary artery disease (CAD) is a leading cause of morbidity and mortality worldwide. Effective management of CAD requires adherence to prescribed medications and lifestyle modifications, yet knowledge, attitude, and practices (KAP) regarding CAD management among patients remain variable**.** This study aims to assess treatment patterns, medication safety, and awareness regarding CAD medications in a tertiary care hospital in Tamil Nadu, India. **Methods:** This was a cross sectional descriptive study done over six months in SRM Medical College Hospital and Research Centre, Kattankulathur. One hundred and ten patients of CAD were recruited, assessed and needed structured questionnaires for evaluating CAD medications knowledge, attitude and practices. A statistical analysis of this patient demographics, clinical characteristics, and treatment adherence was done for the analysis. **Results:** Among all participants,86.4% were aware of the CAD diagnosis, 92.7% believed that drugs could improve their condition, leaving only 30% knowing the underlying causes. Medication adherence was variable: 52.7% never missed a dose, whereas 13.6% reported occasional non-adherence. Lifestyle changes had been incorporated by 53.6% of the patients. This means that in addition to these observable consequences of CAD treatment, the study highlighted gaps in patient knowledge with regard

to the indication of drugs, dosing, and possible medications' side effects, which all signify the necessity of better patient education. **Conclusion:** The study highlights the treatment pattern differences for CAD patients, medication safety issues, and lapses in awareness among the CAD patients. Antiplatelets were the most prescribed drugs (88.2%), statins had the next highest (70.6%), followed by beta-blockers (55.5%). Only 30% patients understood the causes of CAD, and 26.4% knew about the various doses of medications, which has affected adherence (52.7%). Counseling targeted at CAD patients and pharmacist-directed interventions are essential to improving adherence, medication safety, and outcome effectiveness in CAD management.

KEYWORDS: Coronary artery disease, Knowledge, Attitude, Practices, Medication adherence, Patient education.

INTRODUCTION

Coronary artery disease (CAD) is a leading cause of morbidity and mortality worldwide, affecting millions of people and imposing a huge burden on the healthcare system.[1] The global incidence rate for males was 16.8 and females was 12.0. CAD is characterized by the narrowing or blockage of the coronary arteries due to the buildup of plaque, which reduces the blood flow and oxygen supply to the heart muscle.[2] CAD can manifest as acute coronary syndrome (ACS), which includes unstable angina and myocardial infarction, or chronic coronary syndrome (CCS), which refers to stable angina or asymptomatic ischemia.[3]

The management of CAD involves both pharmacological and non-pharmacological interventions. Non-pharmacological includes lifestyle modifications and revascularization procedures. Pharmacological interventions include antiplatelet, anticoagulant, lipid-lowering, and antihypertensive drugs.[3] These treatments aim to prevent or reduce the occurrence of cardiovascular events, such as death, myocardial infarction, stroke, and heart failure, and to improve the quality of life of patients with CAD.[4] However, the optimal use of these treatments depends on various factors, such as the availability, accessibility, affordability, and adherence to medications. Awareness and education of patients and healthcare providers about the benefits and risks of the treatments also play key roles in optimizing patient outcomes.[5]

Observational studies can provide valuable information on the effectiveness, safety, and cost-effectiveness of treatments in routine clinical practice. They can complement evidence from

randomized controlled trials, which may have limited generalizability due to strict inclusion and exclusion criteria, short follow-up duration, and controlled settings. Observational studies can also help to evaluate the adherence of patients to the prescribed medications, and the factors that influence them, such as patient and drug characteristics, health system factors, and social and economic factors. Moreover, these studies can assess the awareness and knowledge of patients and healthcare providers about the medications used in CAD, and the impact of educational interventions on improving the awareness and outcomes.

Ensuring medication safety involves evaluating the risks and benefits associated with various pharmacological agents used in CAD management. Adverse drug reactions, drug interactions, medication adherence, and patient-specific factors contribute to medication safety considerations. Awareness about medications encompasses patient understanding of drug indications, dosages, potential side effects, and the importance of adherence to prescribed regimens. Assessing patient awareness can highlight areas where educational interventions are needed to empower patients to be active participants in their care. Inculcating diet and lifestyle modifications can improve the quality of life of people with CAD.

Therefore, this observational study assesses the treatment patterns, safety, and awareness of the medications used in patients with CAD, and identifies the gaps and barriers that may affect the optimal management of CAD.

AIM

To assess treatment patterns, medications safety, and awareness about medications in patients with coronary artery disease in a tertiary care hospital in Tamil Nadu, India.

OBJECTIVES

Primary objective

- To assess knowledge, attitude, and practices regarding medications in patients with CAD in a tertiary care hospital in Tamil Nadu, India.
- To identify treatment patterns in patients with CAD in a tertiary care hospital in Tamil Nadu, India.

Secondary objective

- To provide patient counseling to improve the medication adherence of patients.

METHODOLOGY

This descriptive cross-sectional study was conducted in SRM Medical College Hospital and Research Centre, Kattankulathur, Tamil nadu, India. The study lasted for 6 months

- **Study design:** Descriptive cross-sectional study
- **Study site:** SRM Medical College Hospital and Research Centre, Kattankulathur.
- **Study setting:** Department of Cardiology, SRM MCH & RC.
- **Study duration:** 6 months.
- **Sample size:** 110
- **EC Approval number:** IEC / RVSIMS / 2023 / 05 / 01 & SRMIEC-ST1023-807.

- **Inclusion criteria**

1. Patients above 18 years of age.
2. Patients diagnosed with CAD.
3. Patients who have been prescribed CAD medications as part of their treatment for the past 3 months.
4. Patients who have undergone previous invasive procedures and are under medication for CAD.

- **Exclusion criteria**

1. Patients who are not willing to give informed consent.
2. Newly diagnosed CAD patients.

- **Study procedure**

This study was conducted in compliance to the ethical principles mentioned in the Declaration of Helsinki and Good Clinical Practice guidelines. Participants were recruited for this study from the Intensive Coronary Care Unit (ICCU) and General Cardiac OPD. The study was explained in detail to the participants in a language he/she could comprehend. After getting informed consent, they were screened for eligibility. Data on demographics, diagnosis, risk factors, investigations and medications was collected using an author-derived internally validated Case Report Form (CRF). Awareness of the subject's knowledge, attitude, and practice regarding CAD medications was recorded using an author-derived 29-item KAP questionnaire. Data was entered in Microsoft Excel and SPSS v16.0 was used for statistical analysis.

RESULTS

Table 1: Baseline characteristics of the study population [n=110]

Variable	Category	mean±S.D / n (%)
Age	30-40 41-50 51-60 61-70 71-80	5(5) 17(16) 39(36) 42(38) 7(6)
Gender	Male Female	71(64.5) 39(35.5)
Diabetes Mellitus	Present Absent	54(49.1) 56(50.9)
Hypertension	Present Absent	55(50) 55(50)
Smoking	Smokers Non-smokers	18(16.4) 92(83.6)
Family H/o CAD	Present Absent	18(16.4) 92(83.6)
Sedentary lifestyle	Yes No	16(14.5) 94(85.5)
Alcohol	Yes No	21(19.1) 89(80.9)
Diagnosis	CAD CAD with DM CAD with HTN CAD with ACS CAD with other systemic illnesses	61(56) 12(11) 29(26) 3(3) 5(5)
Vitals	Systolic BP [mmHg] Diastolic BP [mmHg] PR [bpm]	135.84±25.4 81.73±18.55 84.97±17.57

*__BP__=Blood Pressure, __PR__=Pulse Rate

Table 3: Lab investigations of study participants.

Variables	Mean ± S.D
HB[g/dl]	12.09±2.15
PCV [%]	39.10±14.61
Total Count[cells/mm^3]	9710.6±3363.45
TC [mg/dl]	176.39±85.54
HDL [mg/dl]	44.34±15.94
LDL [mg/dl]	106.8±42.40
VLDL [mg/dl]	33.38±22.32
TGL [mg/dl]	144.0±102.53
Sr. Creatinine [mg/dl]	2.41±11.83
Urea[mg/dl]	31.63±17.45

***HB**=Hemoglobin, **HDL**=High Density Lipoprotein, **LDL**=Low Density Lipoprotein, **PCV**=Packed cell volume, **Sr. Creatinine**=Serum Creatinine **TC**=Total Cholesterol, **TGL**=Triglycerides, **VLDL**=Very Low-Density Lipoprotein.

Treatment patterns among CAD patients

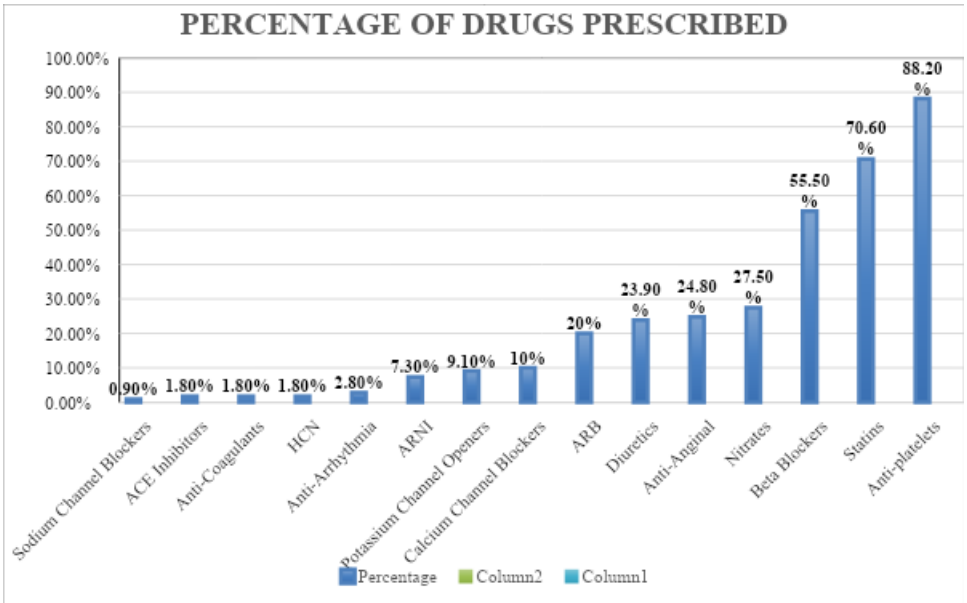

Fig. 9: Treatment Patterns of CAD Patients.

Table 4: Response to KAP questionnaires among CAD patients.

KAP Questionnaires in short	Variables	Analysis [n =110]
K1) No. of people know what disease they are diag nosed with	Yes	95(86.4)
K2) No. of people think CAD can be improved wit h medications	Yes	102(92.7)
K3) No. of people know the cause of the disease	Yes	33(30.0)
K4) People with diabetes, are aware of its drugs an d frequency	Yes	48(43.6)
K5) No. of People believe that consuming oily food causes heart attack	No	62(56.4)
K6) No. of people can segregate their drugs	Yes	81(73.6)
K7) No. of people know the name of the drug to be taken before food	Yes	46(41.8)
K8)No. of people are aware of their medication dos es	Yes	29(26.4)
A1)No. of people need help to identify drugs	No	87(79.1)
A2)What people do if they experience any side effe cts	Not yet experienced Consult the physician Take OTC medications Stop using CAD medications	87(79.1) 11(10) 9(8.2) 3(2.7)

A3)No. of people taking treatment in the same hospital since diagnosed	Yes	97(88.2)
A4)No. of People facing difficulty in sleeping	Yes	25(22.7)
A5)No. of People facing nocturnal urine	Yes	16(14.5)
A6)How was your health compared to the past 3months	Good	102(92.7)
A7)No. of people taking the same medication for a long period	No Change	67(60.9)
P1)No. of people attend regular health checkups	Yes	82(74.5)
P2)No. of people skip their prescribed medication	Never Sometimes Rarely	58(52.7) 15(13.6) 37(33.6)
P3)What do you do if your medication gets over	Consult the physician Refill the prescription	47(42.7) 63(57.3)
P4)What you do if you miss the dose	Start with the next dose Take your dose as soon as you remember Not skipped	44(40.0) 20(18.2) 44(40)
P5)People undergo ECG OR ECHO examination	Once in a year 3 months once 6 months once	13(11.8) 75(68.2) 22(20)
P6)Whether patients use other systems of medicine	Yes	6(5.5)
P7)People engage in lifestyle measures like yoga and walking	Yes	59(53.6)

DISCUSSION

Our study provides a glimpse of the level of understanding of CAD, socio-behavioural perspectives and health-seeking behavior of the patients attending a tertiary care hospital in South India. In today's world, where information is available at the touch of a button, an increasing number of patients are becoming health conscious and are eager to acquire knowledge related to the diseases that they or their family members are suffering from.

In a previous study done by Riya Sharma et.al., [2023] in Punjab, it was observed that consumption of tobacco and alcohol was more prevalent among male CAD patients, while female CAD patients are more likely to be non-smokers and non-drinkers. In comparison to this, our study found that 92% of the study participants were non-smokers and 89% reported that they did not consume alcohol.

The study was done by Jain, Urmila. Et.al., [2019] on Knowledge, Attitude, and Practice Regarding Risk Factors and Lifestyle Modifications in People with Coronary Artery Disease in a Rural Area of Western Maharashtra. And identified the existing studies on the KAP levels and gaps among patients with CAD and the general population in rural areas of India

and other countries, and the interventions and strategies to improve them, such as health education, counseling, mass media, community participation, and peer support, from the above study reference we have assessed the knowledge on disease cause is only one predisposing factor but subjects should understand it is not one disposing of factors there are many such. The knowledge of Diseases and drugs can be enriched further by counseling and bringing awareness to the patients to prevent them and their family members from disease progression and prevention.

Paul Guedeney [2019] has conducted a study on Epidemiology, treatment patterns, and outcomes in patients with coronary or lower extremity artery disease in France and concluded that Most patients received guideline-recommended medication with antithrombotic drugs and lipid-lowering drugs following the index event, but most of the medications were discontinued during follow-up. In this study, we were able to know that the Drugs were prescribed as per guidelines and there were no changes in the drugs after follow-ups.

In addition, Battu Rakesh [2016] has conducted a study on the Assessment of prescribing pattern in coronary artery disease. This study describes the current scenario of prescribing patterns of cardiovascular drugs in patients with coronary artery disease (CAD) in India and have concluded that the discussion of the findings, which compared the prescribing patterns with the standard guidelines and previous studies and identified the gaps and limitations in the current practice. The rational prescription of drugs is to be done to improve the quality of life and prolongation of the lifetime of patients. This study aids in knowing the current prescribing patterns for CAD according to guidelines and assessing their efficacy with the above results.

Among the total participants in the study, 90% of people with more health consciousness are taking drugs as per prescription and 10% of people didn’t adhere to medications properly due to some reasons and were admitted to the hospital again.

CONCLUSION

CAD is a life-threatening disease, patients' knowledge about the causes of the disease and medications is an important thing in the management and prevention of the disease and stopping its further progression. Patients must also be educated that there are various predisposing factors and not only because of one factor they are being affected. Medication Adherence should be strictly done to decrease rehospitalization rates. The role of health care

professionals and health education in improving secondary prevention awareness and adherence should be followed as per guidelines. The treatment patterns for CAD as per guidelines follow a few Class of drugs like Statins (Cholesterol lowering drugs), Anticoagulants, Nitrates, Beta-blockers, ACE inhibitors, and ARBs, we must ensure the treatment is given according to the condition of the patient, and their severity. We must also encourage patients to stop being sedentary and start any new lifestyle measures like walking or yoga which aids in maintaining QoL. As morbidity and mortality are increasing day by day, compatible patient education programs are recommended as they possess fascinating results towards QoL improvement. This study allows the health care professionals to understand patients' mentality and also aids in knowing the knowledge, attitude and practice towards CAD and its drugs.

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