A STUDY ON EVALUATION OF TREATMENT PATTERNS IN CORONARY ARTERY DISEASE

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ABSTRACT

BACKGROUND: CAD is the most common type of heart disease. On moderate condition it leads to Stable Angina and on severe condition it leads to Acute Coronary Syndrome (ACS) which includes: Unstable Angina (38%), STEMI (30%), NSTEMI (25%). Treatment pattern includes both medical plan and surgical procedures. **AIM & OBJECTIVES:** To evaluate the treatment patterns in CAD population. **METHODOLOGY:** A cross sectional observational study including 200 subjects was conducted in the Department of Cardiology in Malla Reddy Narayana Multispecialty Hospital. Patients were examined for treatment patterns of CAD. Data was statistically analyzed using descriptive analysis. **RESULTS:** Out of 200 patients, 21% were prescribed with both anti-thrombotics and anti-hyperlipidemic, 18% with anti-hypertensives, 17% with anti anginals, 14% with diuretics, 9% with Hypoglycemic agents. Surgical intervention such as PTCA was performed in 70.5%, CABG was done in 15.5%. **CONCLUSION:** It was concluded that anti thrombotics and anti hyperlipidemics were shown to be more effective.

KEY WORDS: Coronary Artery Disease, Treatment patterns, PTCA, CABG, anti thrombotics, anti hyperlipidemics, anti anginals.

INTRODUCTION

Coronary artery disease is also called coronary heart disease (CHD) or ischemic heart disease (IHD). Coronary heart disease (CHD) is the leading cause of morbidity and mortality in westernized countries [1]. Patients with CAD are usually managed with medical therapy alone or revascularization procedures, such as coronary artery bypass grafting (CABG) or percutaneous coronary intervention (PCI). The choice between treatment modalities is complex, which depends on patient factors, preferences, and invasive coronary angiographic findings. While the American Heart Association and the American College of Cardiology recommend different treatment modalities based on the type of coronary syndromes and the anatomical localization as determined by invasive coronary angiography [2]. In general, revascularization is preferred over medical therapy in patients with acute coronary syndromes, symptomatic CAD despite maximal medical treatment, those unable to tolerate medical therapy, or those with angiographic findings suggestive of substantial luminal narrowing [3]. Coronary artery bypass grafting is considered the gold standard therapeutic procedure in patients suffering from a 3-vessel disease or left main coronary artery involvement [4]. It is also preferred in cases of single- or double-vessel disease wherein PCI cannot achieve complete revascularization. Percutaneous coronary intervention is usually the preferred modality of treatment in single-vessel afflictions besides specific types of double-vessel afflictions. It is also beneficial in enhancing patient quality of life in those who are not fit for or refuse CABG. The final decision is often made based on the doctors' discretion and tailored to the individual patient [3]. To reduce the mortality and morbidity and to improve the quality of life of the people, treatment plan is required and is to be maintained with constancy. Medical therapy includes the prescription of medication such as Anti-platelets, Anti-coagulants, Statins, Nitrates, Beta-blockers, Calcium channel blockers, ACE Inhibitors, Diuretics, Cardiac glycosides and other relevant therapy in accordance with the comorbidities. Surgical procedures include PTCA, CABG, PCI. In case of severe condition where medical therapy is not sufficient revascularization procedures are required and sometimes both are required.

METHODOLGY:

This study was conducted in the department of Cardiology at Malla Reddy Narayana Multispeciality Hospital. A prospective observational study was performed to evaluate the treatment patterns in the patients with CAD. The patients enrolled in the study were selected based on the criteria. The study was for a period of 6 months. The total study population comprised of 200 CAD patients. All the relevant information regarding the study were collected from case records and had a direct interview with the patients. The demographic details, personal habits, clinical manifestations, comorbidities and treatment plan which includes both pharmacological and surgical treatment were recorded. The data collected was analyzed using the descriptive statistical analysis.
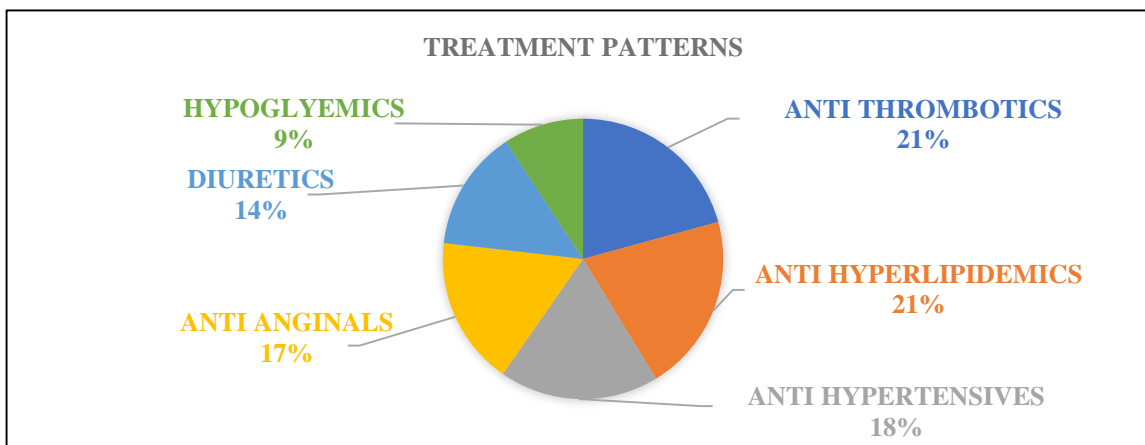
RESULTS:

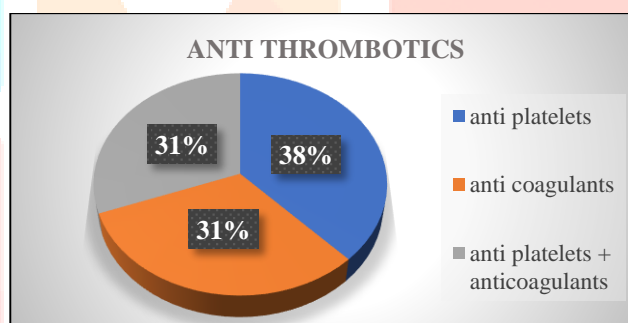**Figure no. 1:** Pie chart represents treatment patterns in each patient

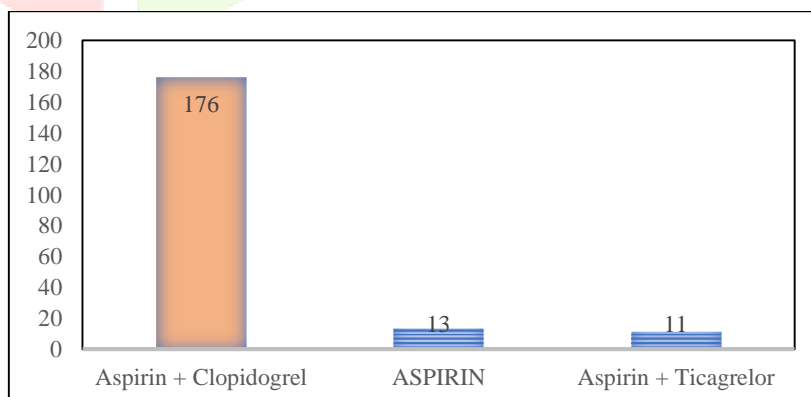**Figure no. 2:** Pie chart demonstrating the distribution of different anti-thrombotic drugs to participants

Figure no. 3: Represents the distribution of anti-platelet drugs prescribed to CAD patients
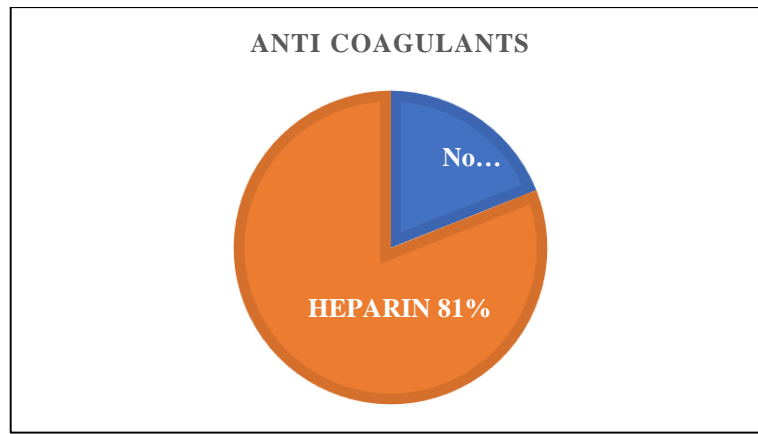
Figure no. 4: Pie chart describing the distribution of anti-coagulants in CAD subjects
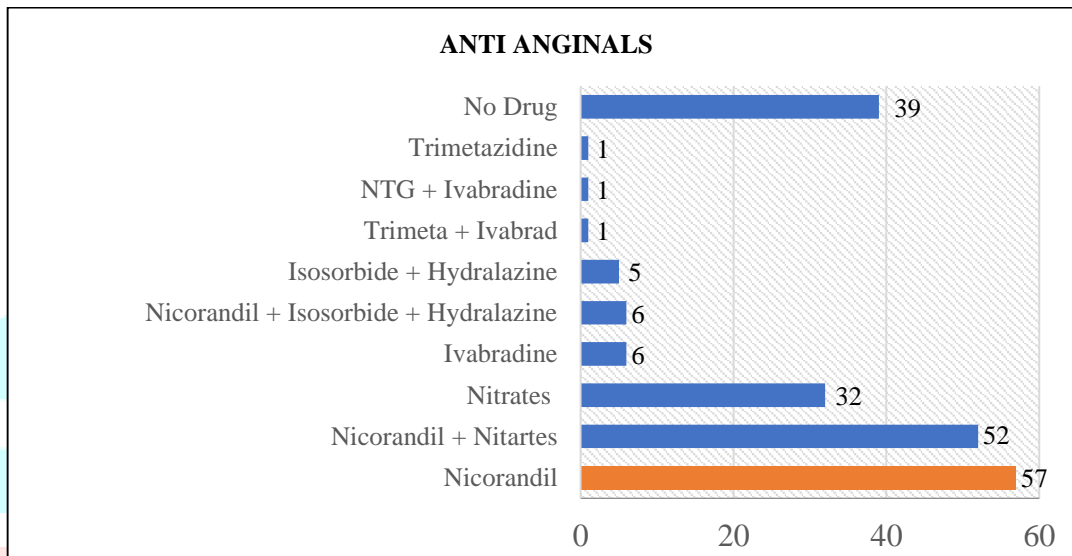

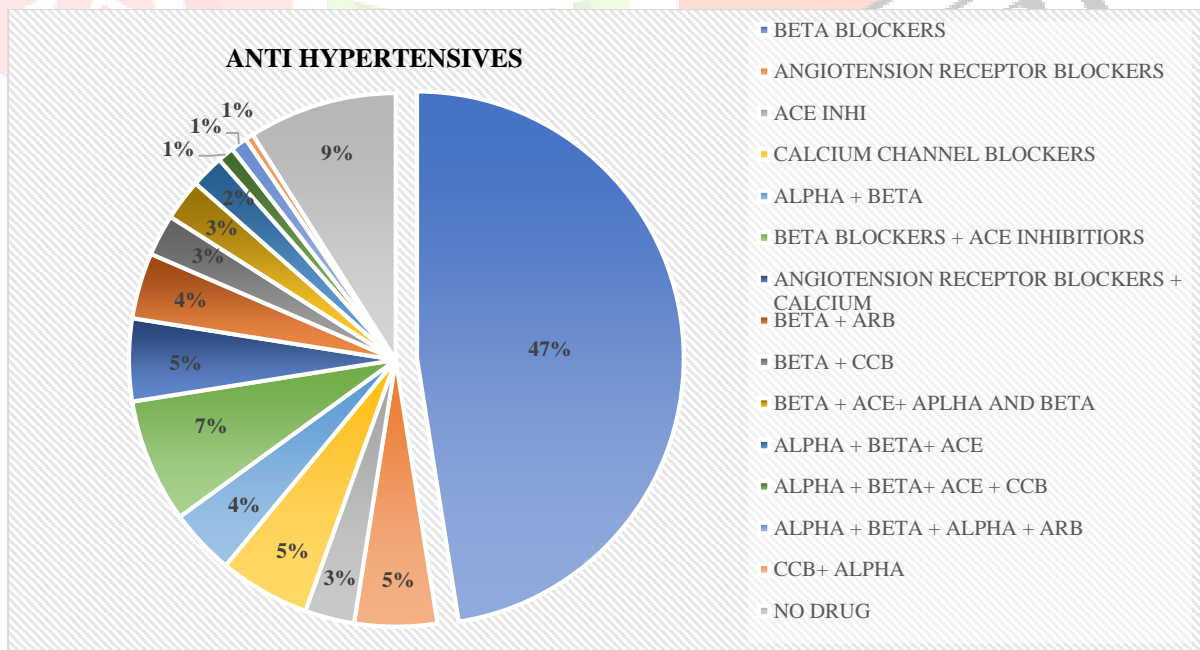**Figure no. 5:** This bar graph represents the distribution of anti-anginal drugs to CAD subjects

Figure no. 6: Pie chart represents the distribution of anti-hypertensive drugs prescribed to CAD study participant
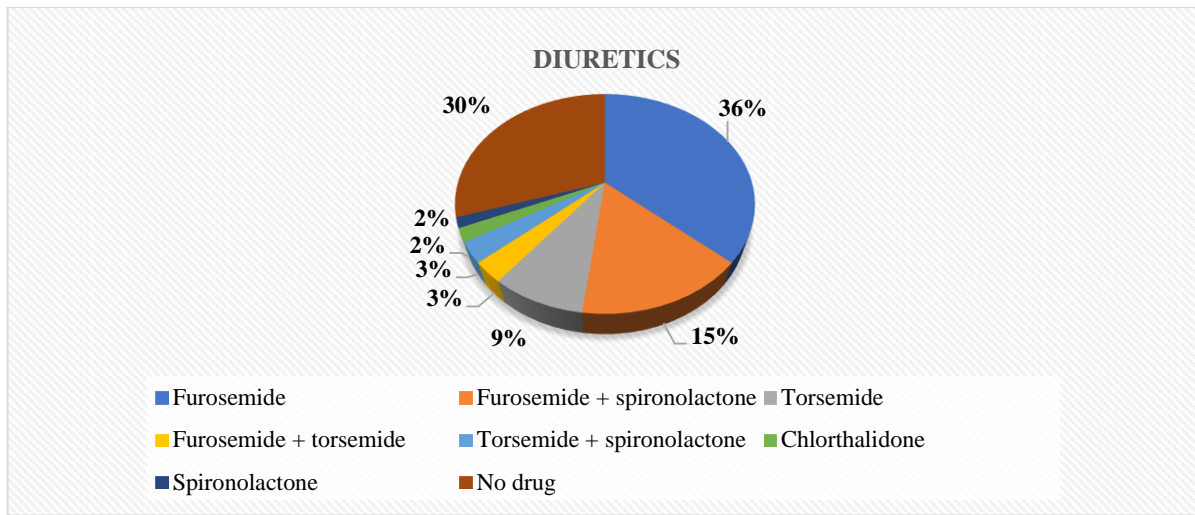
Figure no. 7: Pie chart demonstrating the details of diuretics prescribed to CAD subject
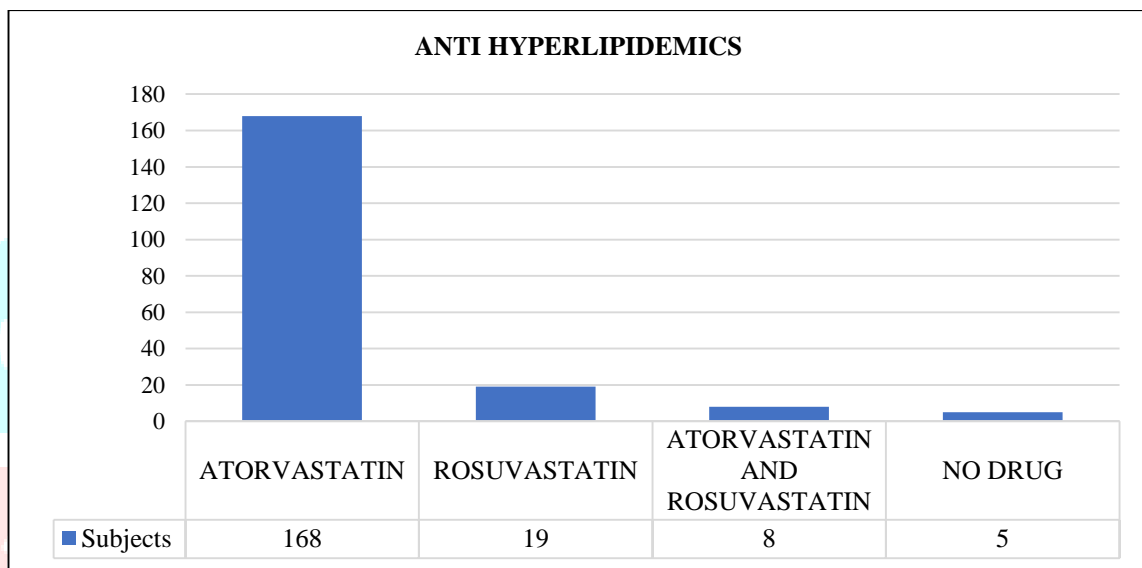

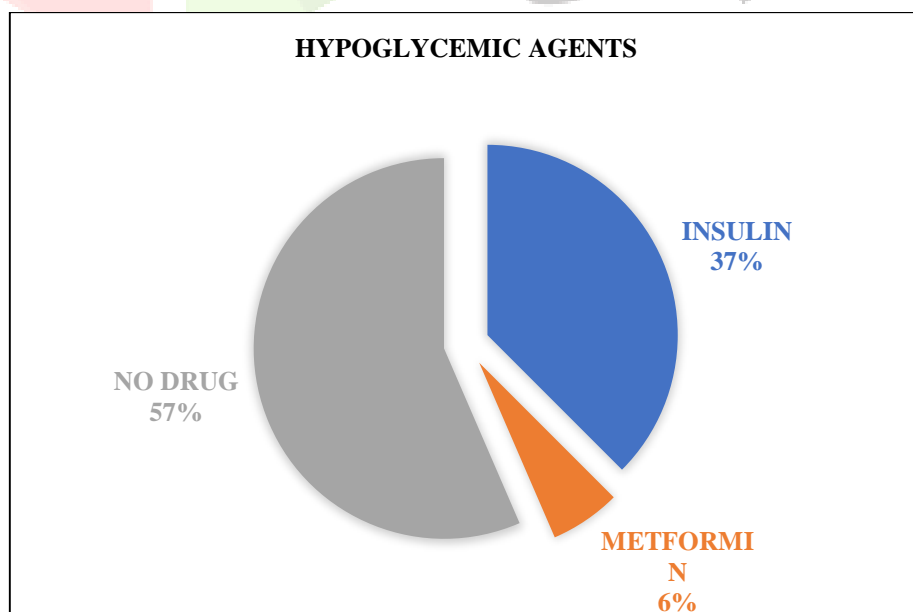**Figure no. 8:** Graph represents the distribution of anti-hyperlipidemic drugs in CAD subjects

Figure no. 9: Pie chart showing distribution of hypoglycemic agents in cad participants
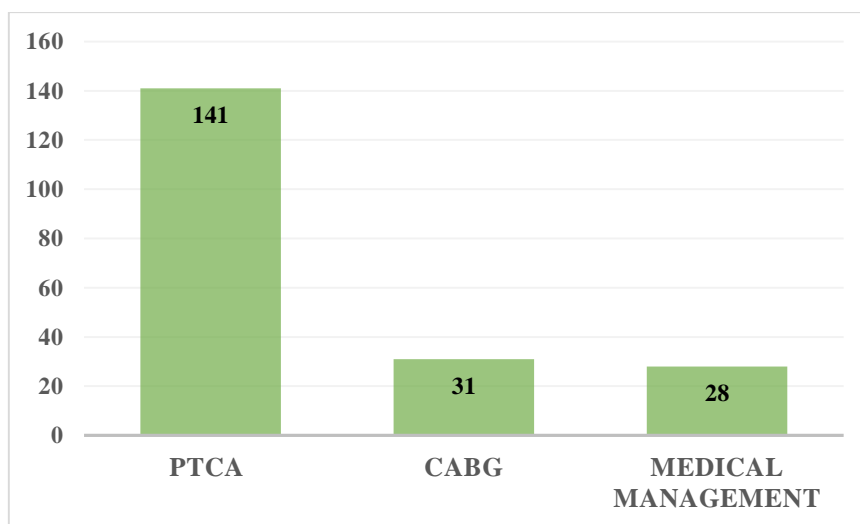
Figure no. 10: Pie chart represents distribution of subjects based on surgical procedures

DISCUSSION:

- WHO recommends the use of aspirin, beta-blockers and statins in all patients diagnosed with CAD and in addition, ACE inhibitors should be used in those with left ventricular dysfunction for secondary prophylaxis.
- Our study revealed that out of 4 evidence-based drugs, the use of anti-thrombotic drugs, anti-hypertensives and hypolipidemics was observed in 100% of the patients.
- Also, 65% patients received beta blockers, 64% were prescribed ACE inhibitors whereas 11% were prescribed ARBs.
- Anti-anginal drugs were prescribed to 87% of patients. And hypoglycemics were prescribed in the subjects whose risk factor was diabetes.
- In the present study, the prescription rate of Aspirin alone was 5.88% and combination of aspirin & clopidogrel (91.76%). The use of antihypertensives were as follows calcium channel blockers (21.18%), Beta blockers (59.41%), ACEIs (27.06%). The previous study indicated high use of calcium channel blockers, whereas in the present study beta- blockers were found to be the preferable choice of antihypertensive prescribed more frequently.
- The use of diuretics was (41%), whereas in the present study the prescription of diuretics was recorded as 62.35%.
- The commonly prescribed drugs were as follows – isosorbide mononitrate among the nitrates, clopidogrel among the antiplatelet agents, metoprolol among the beta blockers, amlodipine among the Calcium channel blockers, ramipril among the ACE inhibitors, atorvastatin among the hypolipidemics and unfractioned heparin (UFH) among the anticoagulants.
- In the present study, the commonly prescribed drugs were isosorbide dinitrate among the nitrates, aspirin among the antiplatelet agents, metoprolol among the beta blockers, amlodipine among the Calcium channel blockers, ramipril among the ACE inhibitors, atorvastatin among the hypolipidemics and enoxaparin among the anticoagulants. A variation in prescribing of antiplatelet drugs, anticoagulants was observed, aspirin and Enoxaparin sodium were prescribed in a greater number of subjects.
- Akin to the present study's findings, previous studies have also reported the LAD artery as the most common culprit vessel. The involvement of LAD leads to worse outcomes. LCX as the most common artery involved in CAD, followed by the LAD, the right circumflex artery, and LM on coronary angiography in the Saudi population. This discrepancy needs to be further evaluated in larger studies.
- Cardiac procedures such as CABG, PTCA OR PCI are increased in old age. Our study showed that, PTCA was performed in 70.5%, CABG was performed in 15.5% and the remaining 14% were on medical management.

CONCLUSION

- In our study treatment patterns which were followed are as – anti thrombotics (21%), anti hyperlipidemics (21%), anti anginals (17%), anti-hypertensives (18%).
- Our study showed that, PTCA was performed in 70.5%, CABG was performed in 15.5% and the rest 14% were treated symptomatically.
- As CAD is the major cause of the morbidity and mortality in the world hence it is important to tackle the condition with the proper treatment plan.
- Apart from all these, additional efforts to provide cheaper drugs, affordable diagnostic or interventional strategies for the population who are not affordable to the treatment will reduce the morbidity and mortality rate of CAD.

ACKNOWLEDGEMENT:

RECOMMENDATION:

We recommend that more studies with a larger sample population be performed in different areas so that this data can is supported, this area has the potential to make the prognosis of coronary artery disease (CAD) better and reduce any risks and comorbidities that may occur as a result.

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