**INTRODUCTION – THESIS**

Globally, Cardiovascular diseases (CVD) are the leading cause of death [1]. Coronary artery disease contributes one-third to one-half cases of CVD [2]. Not only in developed countries, but coronary artery disease is also the leading cause of death even in developing countries [3]. Coronary Artery Disease (CAD) is the largest contributor to CVD accounting for over 43% of the disease burden according to the global burden of disease study in India. [4] Around 17.9 million people died from CVDs in 2019, which contributed to 32% of all global deaths. Almost 85% of these deaths were mainly because of heart attack and stroke.[5]

One of the most common cardiovascular disorders impacting people worldwide is coronary artery disease (CAD). Cardiovascular disease development is at risk due to lifestyle, environmental, and hereditary factors. Risk factors are more common in healthy people, which indicates that CAD will likely occur soon. Chromosome 9p21.3 may be linked to the early start of CAD, according to studies on the entire genome. Diabetes mellitus, hypertension, smoking, hyperlipidemia, obesity, homocystinuria, and psychosocial stress are risk factors for CAD. Due to obesity and high glycemic load with insulin resistance, hypertriglyceridemia is becoming more prevalent in the Indian population, which makes India one of the global leaders in the burden of diabetes mellitus[6]. Diabetes mellitus (DM) is a major risk factor for atherosclerotic cardiovascular disease including coronary artery disease (CAD)[7].

CAD occurs as a result of atheromatous changes in the heart. It can be asymptomatic atherosclerosis, stable angina, or Acute coronary syndrome (Unstable angina, NSTEMI, STEMI). Chest pain, or angina pectoris, is the primary symptom of coronary artery disease (CAD)[8]. Through many investigations and experiments, it has been determined how to effectively treat and eradicate CAD. Treatment will be based on the individual patient’s clinical presentation; it can vary from medical management to coronary interventions such as stenting [9]. Antiplatelet agents, nitrates, β-blockers, calcium antagonists, and ranolazine are some of the few therapeutic agents used for the relief of symptomatic angina associated with CAD[10].

“Coronary artery disease begins in childhood so that by the teenage years, there is evidence that plaques that will stay with us for life are formed in most people,” said Fisher, who is the former editor of the American Heart Association journal, ATVB. “Preventive measures instituted early are thought to have greater lifetime benefits. [Healthy lifestyles](https://www.heart.org/en/health-topics/cholesterol/prevention-and-treatment-of-high-cholesterol-hyperlipidemia) will delay the progression of CAD, and there is hope that CAD can be regressed before it causes CHD.”

Drug utilization studies are very essential for evaluating and analyzing the drug therapy from time to time, to observe the prescribing patterns of general physicians, with the aim of validating the use of drugs and minimizing the adverse drug reactions [11].

Every member of the healthcare team should practice rational drug therapy. Rational drug use means patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirements, for an adequate period of time and at the lowest cost to them and their community [12].

Irrational and unnecessary prescribing has turned into a major health issue. Drug utilization review can be used as a tool to detect these drug-related

problems encountered by the patients while seeking treatment for their illnesses.

The use of multiple drugs may cause inadequate administration and a higher

incidence of adverse events. Polypharmacy (use of five or more drugs), the

development and availability of several drugs on the market, and

epidemiological transitions are the factors that have contributed to the emergence of complex drug therapies [13].

The medication regimen complexity is not only associated with the number of

drugs used, but also with the dosing form, the number of doses per day, and the

relation between drug use and food, among other factors [14].

One of the study showed that the high medication regimen complexity among patients with CAD presented a positive association with the presence

of diabetes mellitus, hypertension, and a report of non-adherence to drugs [15].

Drug utilization research is a collection of descriptive and analytical methods for the quantification, understanding, and evaluation of the processes of prescribing, dispensing, and consumption of medicines, and for the testing of interventions to enhance the quality of these processes.

Drug Utilization Research was defined by WHO in 1977 as “the marketing, distribution, prescription, and use of drugs in a society, with special emphasis on the resulting medical, social and economic consequences” [16].

The Drug Utilization Review (DUR) offers information on drug use patterns, rational drug use, safety, efficacy, and cost-effectiveness. DUR concentrates on the medical, social, and financial aspects of drug use [17,18]. While social implications may be linked to irresponsible drug use, medical effects may include the hazards and advantages of medication therapy. The cost of drugs and patient care, society's spending patterns on healthcare, and other economic concerns are also covered.

This study aims at generating data on the prescription pattern of CAD patients as there is a paucity of available information in the Tamilnadu region. This will help the physicians to improve the quality of the prescriptions and avoid any unexpected drug interactions. This in turn will greatly help in reducing the economic burden on patients and society.