"ASSESSMENT OF THE QUALITY OF PRESCRIBING IN THE PATIENT ADMITTED TO INTENSIVE CARDIAC CARE UNIT (ICCU) OF A TERTIARY CARE HOSPITAL USING PRESCRIPTION QUALITY INDEX (PQI) TOOL"

Submitted by

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Dissertation submitted to the

B.L.D.E (Deemed to be University), VIJAYAPURA, KARNATAKA.

In partial fulfillment of the requirements for the degree of

DOCTOR OF MEDICINE
IN
PHARMACOLOGY

Under the guidance of

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ACKNOWLEDGEMENT

I am grateful to the Almighty, whose blessings bestowed on me has carried thus far and whose benevolence, I pray will help in my future endeavours also.

I express my profound gratitude to my guide Dr Shrinivas R Raikar , Professor and HOD, Department of Pharmacology for his constant support and guidance in the preparation of this dissertation.

I sincerely thank to the Principal of B.L.D.E.U's Shri B.M. Patil Medical College, Dr. Aravind Patil, for indulging me to coordinate this dissertation using the college facilities.

It is a pleasure to thank my Professor Dr Akram A Naikawdi for his guidance during the study. I also thank Dr.Vijaya for guiding me in this study. I want to extend my thanks to all the college library staff who have assisted in the proper completion of this work.

I also thank other Associate Professors, Dr.Anand M Ingale, Dr Leela Hugar and Assistant Professors, Dr Jyoti S Patil, Dr Latha S and Dr Sahana for their encouragement.

In addition, I express my regard to all my postgraduate colleagues and the non-teaching staffs of the Department of Pharmacology, for their enormous support during the course of this work.

I would like to extend my sincere gratitude to my family and friends for being a constant source of inspiration and moral support.

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LIST OFABBREVIATIONS

ABBREVIATION	CONDITION
ACS	Acute Coronary Syndrome
AWMI	Anterior Wall Myocardial Infarction
CAG	Coronary Angiography
CABG	Coronary Artery Bypass Grafting
CS	Cardiogenic shock
DAPT	Dual Anti Platelet Therapy
DVD	Double Vessel Disease
ECG	Electrocardiogram
EF	Ejection Fraction
HF	Heart failure
HTN	Hypertension
ICCU	Intensive Cardiac care unit
IHD	Ischemic Heart Disease
IRA	Infarct-related artery
IWMI	Inferior Wall Myocardial Infarction
LAD	Left Anterior Descending Artery
LBBB	Left Bundle Branch Block
LD	Loading dose

LV	Left Ventricle
MD	Maintanence dose
NSAID	Non Steroidal Anti-inflammatory Drug
NSTEMI	Non ST Elevation Myocardial Infarction
PTCA	Percutaneous Transluminal Coronary Angioplasty
QT	Q wave and T wave in ECG
RCT	Randomised controlled trial
RCX	Circumflex Artery
SVD	Single Vessel Disease
STX	Streptokinase
TX	Thrombolysis
TVD	Triple Vessel Disease
T2DM	Type 2 Diabetes Mellitus
UA	Unstable Angina
UFH	Unfractionated Heparin.

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ABSTRACT

Background: A good prescription is evidence-based, rational, complete and precise. It can improve treatment outcomes. Several tools have been developed to assess the quality of prescriptions. the prescription quality index (PQI) is a tool which includes 22 parameters in the form of questions as an instrument for use across drugs and clinical problems in various contexts. This study aims to evaluate the prescription quality of patients with cardiovascular disorders who have been admitted to an intensive cardiac care unit.

Materials and Methods: Patients with cardiovascular diseases admitted to the Intensive Cardiac Care Unit (ICCU) were considered with their complete case record to analyze prescriptions. Prescription Quality Index (PQI) questionnaire was used to evaluate each prescription with appropriate scores. Accordingly, the quality of the prescriptions were also assessed.

Results: Majority of the patients admitted in the ICCU were in the age group of 60 to 69 years (52%) with male predominance (81%) in the cardiovascular diseases in this tertiary care centre. 49% of the patients had hypertension as comorbidity and 10% had Diabetes mellitus. Most of the prescriptions had few drugs, which were not the cheapest drug given as compared to its alternatives. Drug-drug interactions was rare. Prescribing in generic names were seen less. Clearly written and legible prescriptions were 56%. The prescriber's and patient's information was adequately seen in 61% and the overall PQI core showed that all the prescriptions were of high quality.

Conclusion: The PQI is a valid tool to analyze the prescription quality in chronic conditions at different health-care facilities. Our study shows that high quality prescriptions can be attained by the careful prescription writing procedure, in an Intensive cardiac care unit in a tertiary care unit.

Keywords: PQI, Cardiovascular diseases, ICCU, Prescription Quality.

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INTRODUCTION

Prescriptions constitute the essential communication of medication plans from prescribing physicians to pharmacists and finally to patients. The following details should be legibly stated on a complete prescription: the date, the patient's name, age, gender, weight, registration numbers, the medicine name, dose, method of delivery,tre atment approach, reason for use, along with the name and signature of the prescribing physician[1].

An effective prescription is grounded in evidence, logical, thorough, and accurate. It has the potential to enhance treatment results. A good prescription reflects a suitable procedure and generally shows good quality healthcare. Prescribing medicines without appropriate indication, appropriate dosage, frequency, administration method, and length of therapy, duplication of therapeutic agents and prescribing interactions or undesired adverse effects without due units to consideration of drug-drug forms of inappropriate prescription[1-4] and contribute to poor-quality prescriptions. Safe and effective prescriptions are a big challenge nowadays to maintain the appropriateness and quality of prescriptions.

Various tools have been created to evaluate the quality of prescriptions. They rely on the expert opinions of healthcare professionals [5], without any information on the psychometric properties of the instruments. No single method can capture all facets of prescription quality.

The Medication Appropriateness Index (MAI), created by Hanlon and colleagues at Duke University Medical Center in Durham, is the most commonly utilized tool for assessing prescription appropriateness[6]. However, A major challenge in evaluating prescription quality is the absence of a sufficiently valid and

reliable method that can be systematically applied in clinical practice.

A significant drawback is the absence of a system that is sufficiently accurate and dependable for evaluating the quality of prescriptions. There are numerous quality measurement instruments, each with their own drawbacks[7]. Hence, a valid and trustworthy tool that is suitable and appropriate for a wide range of medications and varied medical problems and can be easily applied in diverse contexts has become a necessity of the hour to evaluate the quality of prescriptions.

In 2010, Hassan et al. developed the prescription quality index (PQI) ,which includes 22 parameters in the form of questions and has been hailed as the perfect instrument for use across a broad range of drugs and clinical problems in various contexts with little data[8].

The prevalence of cardiovascular disease has increased as a result of industrialization, urbanization, and related lifestyle changes. Patients who are admitted will need a variety of medications, and they run the risk of drug-drug interactions. To prevent the use of inappropriate medications, it is important to maintain the quality of prescriptions for patients with cardiovascular disease. Because of this, study will use the prescription quality index (PQI) tool to evaluate the prescription quality of patients with cardiovascular disorders who have been admitted to a tertiary care hospital.

AIMS AND OBJECTIVES

1.To assess the effectiveness of prescriptions for patients with cardiovascular illnesses admitted to the Intensive Cardiac Care (ICCU) unit, using the Prescription Quality Index (PQI) tool.

REVIEW OF LITERATURE

The cardiovascular system includes heart and blood vessels. Cardiovascular disease (CVD) includes subdivisions [9]. Coronary artery disease (CAD), also known as Coronary Heart Disease (CHD), occurs due to reduced blood flow to the heart muscle, leading to conditions such as angina, myocardial infarction (MI), and/or heart failure. This type of disease represents one-third to one-half of all cardiovascular disease (CVD) cases. Additionally, cerebrovascular disease (CVD) encompasses conditions like stroke and transient ischemic attack (TIA). Another form is peripheral artery disease (PAD), which specifically affects the arteries in the limbs and can lead to claudication. The last would be aortic atherosclerosis including thoracic and abdominal aneurysms.

In India, cardiovascular diseases (CVDs) have emerged as the leading cause of death, contributing to a quarter of all fatalities. Ischemic heart disease and stroke are the main contributors, responsible for over 80% of CVD-related deaths. The burden of CVD in India is higher than the global average of 235 deaths per 100,000 population[10]. Particular concerns regarding CVD in India include the early onset of the disease, its rapid progression, and a high mortality rate. Indians have the highest rates of coronary artery disease (CAD), and traditional risk factors do not fully account for this increased vulnerability.

CVD can stem from various causes, such as emboli in patients with atrial fibrillation leading to ischemic strokes or rheumatic fever resulting in valvular heart disease. However, it is crucial to focus on the risk factors linked to the development of atherosclerosis, as they are a common underlying factor in the pathophysiology of CVD[11]. Atherosclerosis is the disease process affecting the arteries and aorta, which can lead to complications due to reduced or blocked blood flow caused by narrowed blood vessels[12].

Evidence suggests that atherosclerosis may have existed for over 4,000 years, with studies of 137 mummies revealing that 34% showed signs of the disease. This indicates that atherosclerosis was prevalent among premodern humans. The understanding of coronary artery disease (CAD) became more defined

during the Renaissance in Europe, when regular anatomical dissections were conducted[13].

William Heberden notably highlighted angina pectoris to the medical community in 1768 with his presentation titled “Some Account of a Disorder of the Breast” at the Royal College of Physicians in London[14]. Many elements of his description remain relevant today, including the identification of typical exertional angina and variant angina, which occurs when a patient is at rest and is alleviated by sitting up. He also noted the impact of mental stress on the condition.


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Figure 1: William Heberden (1710–1801)

Heberden introduced the term “angina pectoris,” derived from the Greek word "ankhonē," meaning "strangling," and the Latin "pectoris," meaning "chest." This historical term continues to be used in modern medicine[13]. In 1761, Italian anatomist Giovanni Morgagni was the first to describe the lesions associated with the condition as “hardening of the arteries.” Edward Jenner later connected the painful “disorder of the breast” to this “hardening of the arteries” [15].

Rudolf Virchow, "father of pathology" in 1856, identified the components involved in formation of thrombus of vascular system, as well as the causative factors for clot formation in blood vessels. Virchow's ideas about thrombosis continue to be significant in modern medicine, particularly in the field of cardiology[16].

Cardiovascular physiologists noticed toward the end of the 1800s that when a dog's coronary artery was

blocked, the ventricle would "quiver," which was frequently fatal. Pathologist Ludvig Hektoen established in 1879 that coronary thrombosis brought on by sclerotic alterations in the coronary arteries causes myocardial infarction. Five individuals with acute myocardial infarction (AMI) symptoms were described by two Russian physicians in 1910; autopsy later verified this diagnosis. Two years later, James Herrick used electrocardiography (ECG) to diagnose the disease and emphasized the significance of bed rest [17].

The first person to inject contrast material selectively into coronary arteries was Dr. Mason Sones of the Cleveland Clinic in 1958. The coronary angiogram has since become a crucial tool in diagnosing, managing, and planning future treatments for CAD.

This angiography started the first research on the natural development of CAD patients and became the accepted diagnostic technique for evaluating vascular anatomy. Additionally, it prompted studies that confirmed the benefits of coronary artery bypass grafting (CABG) over medicinal intervention [18].

Prior to 1961, patients suffering from acute myocardial infarction (AMI) were often placed in non-monitored hospital beds, far from nursing stations, and were frequently found deceased in their beds. The in-hospital mortality rate during that time was around 30%[17]. The coronary care unit (CCU) was introduced[19] in 1961. The CCU establishment resulted in external defibrillation, closed chest cardiac resuscitation, continuous ECG monitoring, and a 50% decrease in in-hospital mortality among admitted patients.

Heart illness can occasionally be "silent" and go undiagnosed until a person exhibits symptoms of an arrhythmia, heart failure, or heart attack. Symptoms of these occurrences could include[20]

-Heart attack symptoms include dizziness, shortness of breath, nausea or vomiting, heartburn, upper back or neck pain, and chest pain or discomfort.

-Arrhythmia: Palpitations, or fluttering sensations in the chest.

-Heart failure: exhaustion, shortness of breath, or edema in the legs, feet, ankles, belly, or veins in the neck.

All healthcare personnel, including medical and paramedical staff, should have access to defibrillators and receive basic cardiac life support (BCLS) training in light of the possibility of Acute Coronary Syndrome

(ACS). The 12-lead electrocardiogram is used to evaluate patients suspected of having ACS. These patients are then divided into two primary treatment groups: (i) those with STEMI-related ECG (persistent ST-segment elevation or similar ECG changes) and (ii) those without ST-segment elevation or similar patterns, which suggests suspected NSTE-ACS [21].

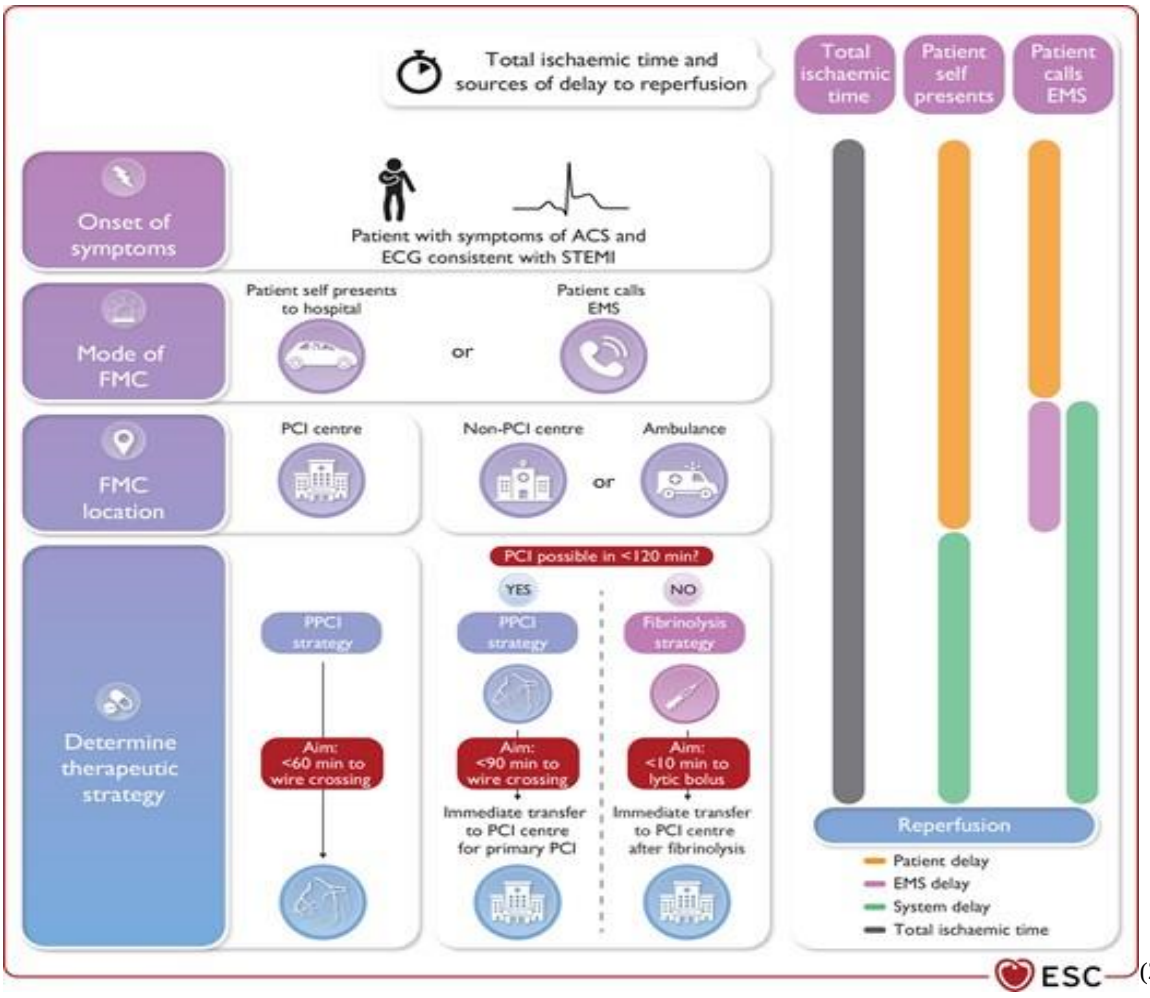

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Figure 2 : Modes of presentation and management in patients with STEMI.

ACS-acute coronary syndrome; ECG-electrocardiogram; EMS-emergency medical services; FMC-first medical contact; PCI-percutaneous coronary intervention; PPCI-primary percutaneous coronary intervention; STEMI-ST segment elevation myocardial infarction.

A suspected STEMI can have a higher chances with severe, life-threatening complications, such as ventricular fibrillation (VF). As a result, it's essential to start an emergency reperfusion strategy and transfer the patient directly to a facility equipped for Percutaneous Coronary Intervention (PCI). The pre-hospital

triage procedures for patients with persistent ischemic symptoms who have an ECG without an ST-segment elevation (or comparable patterns) should be the same as those for patients with STEMI. This is because ventricular arrhythmias are among the acute risks they confront [21].

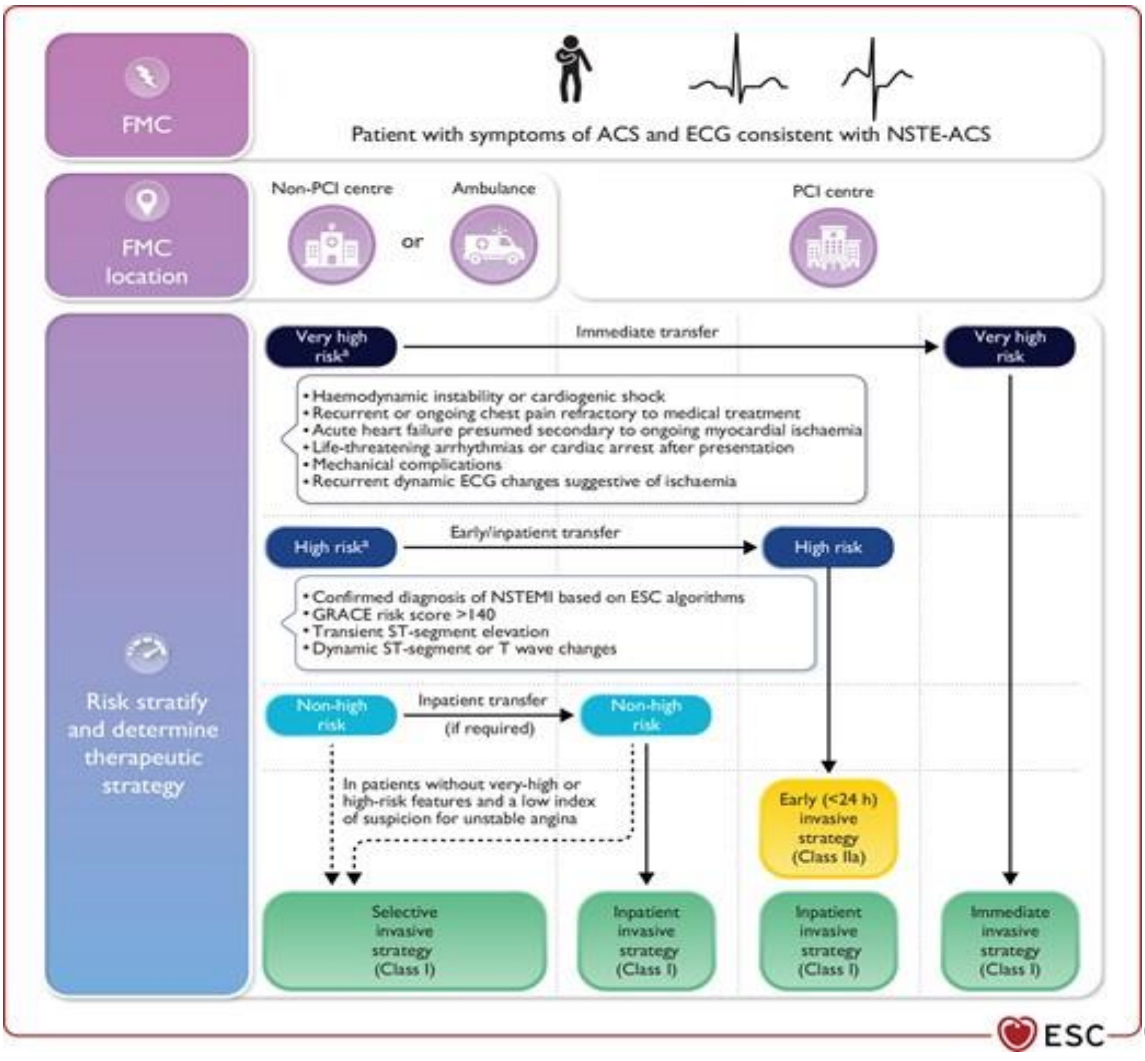

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Figure 3 : Treatment in patients presenting with NSTE-ACS.

GRACE-Global Registry of Acute Coronary Events; hs-cTn -high sensitivity cardiac troponin; NSTE-ACS -non ST elevation acute coronary syndrome; NSTEMI- non ST elevation myocardial infarction; UA, unstable angina.

For individuals on the STEMI pathway, prompt therapy is essential. Care is determined by a number of factors, including the choice of reperfusion technique, delays in initial management, and the total ischemia

period. The duration of treatment serves as an indicator of the efficiency and quality of the healthcare system responsible for managing these patients.

DIAGNOSIS AND MONITORING

The results of a 12-lead ECG and symptoms that point to myocardial ischemia are usually used to make the first diagnosis of ACS. It is advised to begin ECG monitoring immediately for all patients suspected of having ACS to identify life-threatening arrhythmias and enable timely defibrillation if necessary [21].

PHARMACOTHERAPY

Oxygen

Oxygen supplementation is advised for ACS patients with hypoxemia (oxygen saturation levels <90%). However, for patients with normal oxygen saturation levels, supplemental oxygen does not provide clinical benefits and is not recommended [22].

Nitrates

Sublingual nitrate may help reduce the symptoms of ischemia. A reduction in chest pain after taking nitroglycerin, however, could be deceptive and shouldn't be used as a diagnostic indicator. Another 12-lead ECG is advised for patients whose ECG shows continued STEMI and symptom improvement with nitroglycerin. If symptoms go away and the ST-segment elevation fully returns to normal, this could indicate coronary spasm, with or without a myocardial infarction. Nitrates should be avoided in patients with hypotension, significant bradycardia or tachycardia, right ventricular infarction, severe aortic stenosis, or those who have taken phosphodiesterase 5 inhibitors within the last 24–48 hours [21].

Analgesics

When treating severe chest discomfort, intravenous opioids like morphine (5–10 mg) should be taken into consideration. It has been discovered that morphine [24] works better than other alternatives, such as nitrous oxide/oxygen mixed with intravenous acetaminophen/paracetamol. Morphine, on the other hand, might impede the gastrointestinal absorption of oral medicines and cause nausea and vomiting, which may postpone the effectiveness of oral antiplatelet therapy[25].

Patients with an active MI may experience a delayed onset of platelet inhibition by oral P2Y12 receptor antagonists. In MI patients, morphine can further decrease the antiplatelet effects of oral P2Y12 inhibitors, delay their onset of action, and decrease their absorption. However, it's important to note that current clinical data have not shown any increased risk of adverse outcomes due to interactions between morphine and antiplatelet medications in the context of ACS [26].

Intravenous Beta-blockers

Few RCTs checking the benefit of initial use of IV beta-blockers in STEMI shows Metoprolol with the greatest cardio-protective effect in experimental studies [27]. In such patients with STEMI requiring PPCI without acute heart failure or a systolic blood pressure >120 mmHg or other contraindications, these drugs can be used [28].

ACUTE CORONARY SYNDROME MANAGED WITH INVASIVE STRATEGY

Patients who have a strong suspicion of persistent acute coronary artery blockage (persistent ST-segment elevation or NSTE-ACS) should have invasive coronary angiography (CAG) as soon as possible. For patients with a Global Registry of Acute Coronary Events [GRACE] risk score >140, transient ST-segment elevation, or high-risk NSTE-ACS, a similar early invasive approach (within 24 hours) is recommended.

PRIMARY PERCUTANEOUS CORONARY INTERVENTION STRATEGY FOR STEMI

In patients suspecting STEMI, PPCI strategy which is immediate angiography and PCI will be the preferred reperfusion strategy, best if within 120 min of the ECG-based diagnosis. RCTs have demonstrated that PPCI is more effective than fibrinolysis in lowering mortality, non-fatal reinfarction, and stroke[28] when therapy is delayed. There is an absolute time of 120 minutes between the diagnosis of STEMI [29] and PCI-mediated reperfusion. Rescue PCI is recommended for patients whose fibrinolysis failed, or who have hemodynamic or electrical instability, increasing ischemia, or ongoing chest discomfort[30].

For a prompt PPCI plan, move to a PCI center if one is not accessible. If PPCI cannot be completed in 120 minutes, fibrinolysis should be considered right away, followed by an emergency transfer to a PCI center. PPCI strategy is preferred over fibrinolysis if the symptom onset has exceeded 12 hours.

Patients who have a patent infarct-related artery (IRA) but have architecture that is inappropriate for PCI or who have a sizable myocardial region at risk may be candidates for emergency coronary artery bypass grafting (CABG) surgery. Patients having MI-related mechanical complication requiring coronary revascularization, CABG is preferred. If PCI failed or acute coronary occlusion not amenable to PCI, in STEMI cases, emergency CABG not commonly done as benefits are less certain [31]. STEMI patients with occluded IRA presenting >48 h after onset of symptoms, PCI is not indicated [32].

IMMEDIATE INVASIVE STRATEGY FOR NON-STEMI

Fibrinolysis

It is a crucial reperfusion technique. When PPCI is not possible for STEMI patients who present within 12 hours of the beginning of symptoms, it prevents 30 premature deaths for every 1000 patients treated within 6 hours of the onset of symptoms [33]. Successful reperfusion results in hemodynamic stability, ≥50% ST-segment resolution, and improvement in ischemic symptoms.

Pre-hospital Fibrinolysis

If an ECG can be interpret on site, then fibrinolytic therapy can be initiated in the pre-hospital setting (Tenecteplase, Alteplase, or Reteplase) within 10 min of the STEMI diagnosis. Waiting for the results of cardiac biomarker testing should not postpone the start of fibrinolytic therapy.

I. Antiplatelet drugs [21].	
Aspirin	LD of 150–300 mg PO or 75–250 mg IV, if oral ingestion is not possible, followed by oral MD of 75–100 mg OD ; no specific dose adjustment in CKD patients.
$P2Y_{12}$ receptor inhibitors (PO or IV)	
Clopidogrel	LD of 300–600 mg PO, followed by an MD of 75 mg OD; no specific dose adjustment in CKD patients. Fibrinolysis: at the time of fibrinolysis an initial dose of 300 mg (75 mg for patients older than 75 years of age).
Prasugrel	LD of 60 mg PO, followed by an MD of 10 mg OD. In patients with body weight <60 kg, an MD of 5 mg OD. is recommended. In patients aged ≥75 years, prasugrel should be used with caution, but a MD of 5 mg OD. should be used if treatment is deemed necessary. No specific dose adjustment in CKD patients. Prior stroke is a contraindication for prasugrel.
Ticagrelor	LD of 180 mg PO, followed by an MD of 90 mg BID; no specific dose adjustment in CKD patients.
Cangrelor	Bolus of 30 mcg/kg IV followed by 4 mcg/kg/min infusion for at least 2 h or the duration of the procedure (whichever is longer). In the transition from cangrelor to a thienopyridine, the thienopyridine should be administered immediately after discontinuation of cangrelor with an LD (clopidogrel 600 mg or prasugrel 60 mg); to avoid a potential DDI, prasugrel may also be administered 30 min before the cangrelor infusion is stopped. Ticagrelor (LD 180 mg) should be administered at the time of PCI to minimize the potential gap in platelet inhibition during the transition phase.
GP IIb/IIIa receptor inhibitors (IV)	
Eptifibatide	Double bolus of 180 mcg/kg IV (given at a 10-min interval) followed by an infusion of 2.0 mcg/kg/min for up to 18 h.

I. Antiplatelet drugs [21].	
	For CrCl 30–50 mL/min: first LD, 180 mcg/kg IV bolus (max 22.6 mg); maintenance infusion, 1 mcg/kg/min (max 7.5 mg/h). Second LD (if PCI), 180 mcg/kg IV bolus (max 22.6 mg) should be administered 10 min after the first bolus. Contraindicated in patients with end-stage renal disease and with prior ICH, ischemic stroke within 30 days, fibrinolysis, or platelet count <100 000/mm3.
Tirofiban	Bolus of 25 mcg/kg IV over 3 min, followed by an infusion of 0.15 mcg/kg/min for up to 18 h. For CrCl ≤60 mL/min: LD, 25 mcg/kg IV over 5 min followed by a maintenance infusion of 0.075 mcg/kg/min continued for up to 18 h. Contraindicated in patients with prior ICH, ischemic stroke within 30 days, fibrinolysis, or platelet count <100 000/mm3.
II. Anticoagulant drugs	
UFH	Initial treatment: IV bolus 70–100 U/kg followed by IV infusion titrated to achieve an aPTT of 60–80 s. During PCI: 70–100 U/kg IV bolus or according to ACT in case of UFH pre-treatment.
Enoxaparin	Initial treatment: for treatment of ACS 1 mg/kg BD. subcutaneously for a minimum of 2 days and continued until clinical stabilization. In patients whose CrCl is below 30 mL per minute, the enoxaparin dosage should be reduced to 1 mg per kg OD. During PCI: for patients managed with PCI, if the last dose of enoxaparin was given less than 8 h before balloon inflation, no additional dosing is needed. If the last S/C. administration was given more than 8 h before balloon inflation, an IV bolus of 0.3 mg/kg enoxaparin sodium should be administered.
Bivalirudin	During PPCI: 0.75 mg/kg IV bolus followed by IV infusion of 1.75 mg/kg/h for 4 h after the procedure. In patients whose CrCl is below 30 mL/min, maintenance infusion should be reduced to 1 mg/kg/h.
Fondaparinux	Initial treatment: 2.5 mg/d S/C. During PCI: A single bolus of UFH is recommended. Avoid if CrCl <20 mL/min.

Table 1 : Antiplatelet and Anticoagulant drugs with dosage

ACT, activated clotting time; aPPT, activated partial thromboplastin time; BID, bis in die (twice a day); CKD, chronic kidney disease; CrCl, creatinine clearance; DDI, drug–drug interactions; ICH, intracranial

haemorrhage; IV, intravenous; LD, loading dose; MD, maintenance dose; OD., once a day; PPCI, primary percutaneous coronary intervention; s.c. subcutaneous; UFH, unfractionated heparin.

ANGIOGRAPHY AND PCI AFTER FIBRINOLYSIS

As soon as fibrinolytic medication is administered, patients should be sent to a PCI center. Rescue PCI and urgent angiography are recommended in cases of failed fibrinolysis or signs of re-occlusion or re-infarction with recurrence of ST-segment elevation [30]. After successful lysis, recommended time window for PCI is within 2–24 hours, though optimal time delay is not mentioned [34].

ANTIPLATELET THERAPY IN THE ACUTE PHASE

In patients with STEMI undergoing PPCI, pre-treatment with a P2Y12 receptor inhibitor may be considered [35]. But in NSTE-ACS, before knowing the coronary anatomy in patients anticipated to undergo an early invasive strategy, $P2Y_{12}$ receptor inhibitor is not recommended [36].

In NSTE-ACS, pre-treatment with a $P2Y_{12}$ receptor inhibitor can be given , if anticipated delay to invasive angiography of more than >24 hours, in view of the bleeding risk of the patients. When PCI is performed on ACS patients who did not receive a P2Y12 receptor inhibitor prior to treatment, a loading dosage is advised. Intravenous treatment includes peri-interventional IV antiplatelet medications such as glycoprotein (GP) IIb/IIIa inhibitors (Eptifibatide, Tirofiban) and P2Y12 receptor inhibitors (Cangrelor).

The two main categories of antiplatelet therapies for lowering bleeding risk during the first 12 months following an ACS are DAPT strategies and DAPT de-escalation techniques. When the risk of bleeding episodes is significant, a 12-month DAPT (Prasugrel or Ticagrelor) is used to lower the risk [21].

COMPLICATIONS

1.Heart failure

Patients with ACS and acute HF usually present with dyspnea and clinical signs/symptoms of fluid

overload. Patients with acute HF have elevated troponin levels, which indicate myocardial damage from HF rather than myocardial necrosis from ischemia. The established algorithms must be followed when recommending diuretics, vasodilators, inotropic drugs, and vasopressors. In certain situations, invasive respiratory assistance, mechanical circulatory support, and/or renal replacement treatment may be necessary[37].

Patients presenting with acute HF complicating ACS require immediate CAG [38]. Patients with ACS and Cardiogenic shock (CS) should be transferred to a PCI centre for CAG, and PCI of the IRA if needed [39].

2. Mechanical complications

They usually appear with STEMI and can happen in the initial days after MI. A mechanical complication should be suspected if there is sudden hypotension, a return of chest discomfort, pulmonary congestion, jugular vein distension, or new heart murmurs that could indicate acute mitral regurgitation or a ventricular septal defect. An echocardiogram should be performed right away [21].

3. Left ventricular thrombus

The first-line imaging test for identifying IV thrombus is still echocardiography. However, the gold standard is cardiac magnetic resonance (CMR). In the first two weeks following MI [40], there has been a reported increase in the detection of venous thrombi. For three to six months, OAC therapy should be evaluated based on repeated echocardiograms or CMR, taking into account the risk of bleeding and the requirement for concurrent antiplatelet therapy [41].

4. Arrhythmias

- Atrial fibrillation (AF)

It is mostly tolerated and anticoagulationis the only treatment given. If AF causes acute haemodynamic instability, electrical cardioversion is delivered. Beta-blockers can manage the heart rate, based on poor ejection fraction (EF) and HF presence. Amiodarone or Digoxin is used in case of depressed EF. Digoxin is preferred in cases of hypotension. Chronic oral anticoagulation should be considered if AF and risk factors for thrombo-embolism are seen[42].

- Ventricular arrhythmias

Unstable, usually polymorphic, and moderately rapid VT that commonly degenerates into VF is the typical appearance of an arrhythmia. Since ischemia can cause arrhythmias, prompt reperfusion is essential. Beta-blockers given orally or intravenously early lower the risk of malignant arrhythmias [27]. If malignant arrhythmias occur, beta-blockers or amiodarone may be administered; if they are contraindicated, lidocaine is administered[43].

Implantable cardioverter-defibrillator (ICD) implantation may be considered for secondary prevention of sudden cardiac death in cases of sustained VT/VF, which can happen later than 48 hours following reperfusion.Ventricular premature beats are commonly seen which require no specific therapy. Radiofrequency ablation can abolish recurrent VT/VF [44].

5.Bleeding

Massive or intracranial hemorrhages can cause abrupt cardiocirculatory collapse or pose a life-threatening risk. Blood transfusion may increase systemic inflammation and may be a cause of mortality that follows [45]. Bleeding also plays a significant role in the unintended termination of DAPT and other drugs,

such as beta-blockers and statins [46].

Sex Differences

Several studies have reported that women presenting with ACS are treated differently than men like receiving CAG, timely revascularization, cardiac rehabilitation and secondary prevention [47].

ACUTE PULMONARY EDEMA

The aberrant accumulation of extravascular fluid in the lung parenchyma results in pulmonary edema, can result in reduced gas exchange at the alveolar level and ultimately respiratory failure. Its etiology can be either non-cardiogenic due to damage to the lung parenchyma or cardiogenic due to a failure to remove enough blood from the pulmonary circulation. Clinical signs include worsening hypoxia, rales on lung auscultation, and steadily worsening dyspnea [47]. Treatment includes Diuretics (Furosemide) is the most often used drug, Vasodilators, such as nitroglycerin, Morphine and other invasive and non-invasive ventilation techniques [48,49,50]

LEFT BUNDLE BRANCH BLOCK (LBBB)

LBBB implies electrical and mechanical ventricular dysynchrony leading to left ventricular remodelling that may be treated with biventricular resynchronisation therapy or physiologic pacing. It shows ECG alteration in QRS pattern and can affect heart failure and mortality [51].

There are several factors found associated with LBBB development like genetic mutations of connexin-43 [55] or after undergoing a procedure like surgical aortic valve replacement [52].

In the Framingham Study, newly acquired LBBB was most often a hallmark of advanced hypertensive or ischemic heart disease, or both [51]. Cardiac Resynchronization Therapy (CRT) with biventricular pacing,

or more recently with pacing can reverse the harmful effects of electromechanical dysynchrony.

PRESCRIPTION ASSESSMENT TOOLS

Prescription quality index tool has twenty-two criterias namely evidence-base, effectiveness, correct directions, practical directions, drug–drug interactions, drug–disease interactions, adverse drug reaction, duration, compliance, legibility, prescriber's information, patient's information, medication's name, diagnosis, and patient's improvement were considered more important and criterias like unnecessary duplication, cost, generic prescribing, formulary or essential drug list, and requirement for drug therapy were rated as least important and assigned the lowest score while assessment [8].

The WHO created universal and standardized drug use indicators to examine prescription practices and enhance sensible drug use in outpatient settings. The indicators for prescribing, patient care, and facilities are all included. Prescription indicators make it possible to identify the therapeutic measures implemented at comparable institutions, allowing for a comparison of parameters between them later on, an assessment of the population's pharmaceutical requirements, and the identification of the most often used drugs in a certain location. By using these variables, the researcher can determine the population's prescription profile and the caliber of services provided. The following are these prescription indicators [53,54] . Average number of drugs per medical prescription, Percentage of drugs prescribed by generic name, Percentage of drugs prescribed from the essential drug list, Percentage of encounters with an antibiotic prescribed and Percentage of prescribed injectable drugs.

These indicator helps to investigate polypharmacy, which gives an idea about adverse drug reactions, drug costs in the health service. It also gives an idea of how much the general practices conform to the current national drug policies.

These literatures show that pharmacotherapy is essential to treat and preventdisease, which enhances

human health and wellbeing. Yet, for the desired result, medications must be both effective and safe, and they must be taken rationally [55]. It is significant in the treatment of all the major diseases like cardiovascular diseases that we deal in this study done in an Intensive cardiac care unit.

The prescription order is an important therapeutic transaction between the prescriber and the patient[56]. It should be scientifically legible, unambiguous, adequate and complete. It has been well-accepted that inadequate and ignorant prescriptions could lead to serious consequences in patients with cardiovascular diseases [57].

MATERIALS & METHODS

Study Design – Prospective Observational Study

Ethical Aspect – Ethical approval is obtained from Institutional Ethics Committee, (SBMPMC-Vijayapura)

Study Duration – July 2023 to June 2024

Source of Data – Patients admitted to Intensive cardiac care unit (ICCU) of

Shri B M Patil Medical College, Hospital and Research Centre, Vijayapura.

Sample Size [58] – With a 95% confidence level and margin of error of ±8, a sample size of 151 cases will allow studying the quality of prescribing in patients with cardiovascular diseases admitted in the Intensive cardiac care unit (ICCU) of Shri B M Patil Medical College, Hospital and Research Centre, Vijayapura, using Prescription Quality Index (PQI) tool.

The total sample is 151 cases.

By utilizing the equation,

$n = [z^2 p (1-p)] / d^2$

where

Z = z statistic at a 5 % level of significance is the margin of error .

p is the anticipated prevalence (50%)

INCLUSION CRITERIA

1. All cardiovascular disease patients admitted in ICCU.
2. Patients with age more than 18 years.

EXCLUSION CRITERIA

1. Pregnancy

All patients with cardiovascular diseases admitted to the Intensive Cardiac Care Unit (ICCU) with or without co morbidities were included in the study. The complete case record of the included patients were analyzed from the date of admission till the date of discharge. Demographic details like age and sex along with patient identification (ID) number, co morbidities and diagnosis was noted.

The names of all the medications provided to the patient were listed in the Prescription Quality Index (PQI) questionnaire, when all the pertinent information has been entered. Each of the 22 questions have an answer for each of the medications specified in a single prescription. All of the questions' responses were noted with the matching numbers. For each question, the minimum score will be taken as the response to that question, and if no information is available for a question, then that question got a score of zero. Prescription Quality Index (PQI) answers range from 0–4 for very significant criteria, 0–2 for important criteria, and 0–1 for less important criteria.

Fifteen criteria namely evidence-base, effectiveness, correct directions, practical directions, drug–drug interactions, drug–disease interactions, adverse drug reaction, duration, compliance, legibility, prescriber's information, patient's information, medication's name, diagnosis, and patient's improvement were considered as important and assigned the medium score of '0' to '2'. Five criteria including unnecessary duplication, cost, generic prescribing, formulary or essential drug list, and requirement for drug therapy were

rated as least important and assigned the lowest score of '0' to '1'. Thus, each criterion carried a specific maximum score depending on its importance [8].

The Prescription Quality Index (PQI) tool is used to rate each question, and the resultant scores summed up to determine the ultimate score for that specific prescription.Prescription Quality Index (PQI) score for that prescription is represented by this number. According to the PQI tool scoring, prescriptions with a PQI total score of 31 will be considered low quality, 32-33 as medium quality, and 34-43 as high quality prescriptions.

To evaluate different items in the questionnaire standard references or publications were used. The primary references were PQI manual, pharmacy/pharmacology texts, Evidence Based Medical Reviews, National list of Essential medicines of India 2022 [59], articles on Medline and Pub MED. For the cost of the drugs, a drug available at hospital pharmacy was compared with the similar drugs of different brands from the same pharmacy.

Table 2 : PQI PARAMETER QUESTIONNAIRE & SCORING SYSTEM / PROFORMA

No.	Criterion	Weighted scale
1.	Is there an indication for the drug?	0-2-4
2.	Is the dosage correct?	0-2-4
3.	Is the medication effective for the condition?	0-1-2
4.	Is the usage of the drug for the indication supported by evidence?	0-1-2
5.	Are the directions for administration correct?	0-1-2
6.	Are the directions for administration practical?	0-1-2
7.	Are there clinically significant drug–drug interactions?	0-1-2
8.	Are there clinically significant drug–disease/condition interactions?	0-2
9.	Does the patient experience any adverse drug reaction?	0-1-2
10.	Is there unnecessary duplication with other drug(s)?	0-1
11.	Is the duration of therapy acceptable?	0-1-2
12.	Is this drug the cheapest compared with other alternatives for the same indication?	0-1
13.	Is the medication being prescribed by generic name?	0-1
14.	Is the medication available in the formulary or essential drug list?	0-1
15.	Does the patient comply with the drug treatment?	0-2
16.	Is the medication's name on the prescription clearly written?	0-1-2
17.	Is the prescriber's writing on the prescription legible?	0-1-2
18.	Is the prescriber's information on the prescription adequate?	0-2
19.	Is the patient's information on the prescription adequate?	0-1-2
20.	Is the diagnosis on the prescription clearly written?	0-1-2
21.	Does the prescription fulfil the patient's requirement for drug therapy?	0-1
22.	Has the patient's condition(s) improved with treatment?	0-1-2

STATISTICAL ANALYSIS

Microsoft Excel was employed for data entry, data cleaning, and data preparation. Data was analyzed using SPSS (Version 27) software. All characteristics are summarized descriptively. Qualitative data were presented using Frequency and percentage, and using diagrammatic presentation. Qualitative data were presented using Mean ± SD.

Spearman's correlation coefficient was used to find the relationship between the variables. A p-value of <0.05 was considered statistically significant. All statistical tests was perform two tailed.

RESULTS

The prescriptions of the ICCU of tertiary care centre were evaluated and following results were obtained.

Table 3 : Age distribution

Age(Years)	No. of patients	Percentage (%)
< 40	1	0.7
40 - 49	17	11.3
50 - 59	54	35.8
60 - 69	78	51.7
70+	1	0.7
Total	151	100.0

The results show that majority of the patients admitted in the ICCU were in the age group of 60 to 69 years (52%), followed by 50 to 59 years age group (36%). Also only patient each was admitted below 40 years of age and above 70 years of age (0.7%). This shows that patients within the age group of 50-70 years came with cardiovascular emergencies in this centre.

Figure 4: Age distribution in graph.

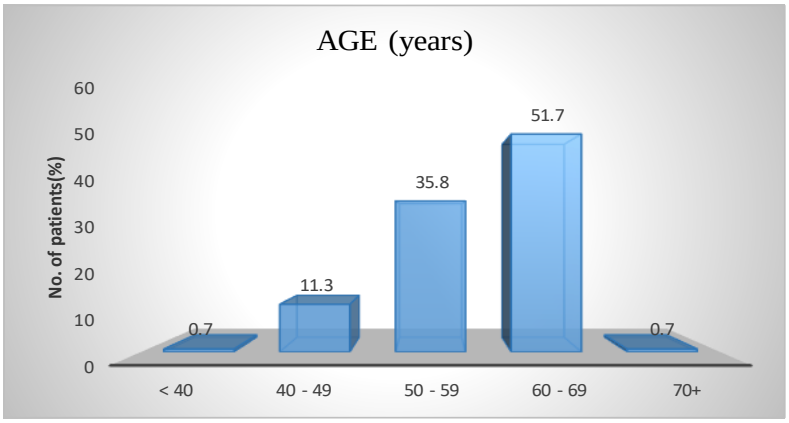


Table 4: Gender distribution of all subjects

Gender	No. of patients	Percentage (%)
Female	28	18.5
Male	123	81.5
Total	151	100.0

The study shows male predominance (81%) in the cardiovascular diseases in this tertiary care centre with females admitted to the Intensive cardiac care unit about 18%.

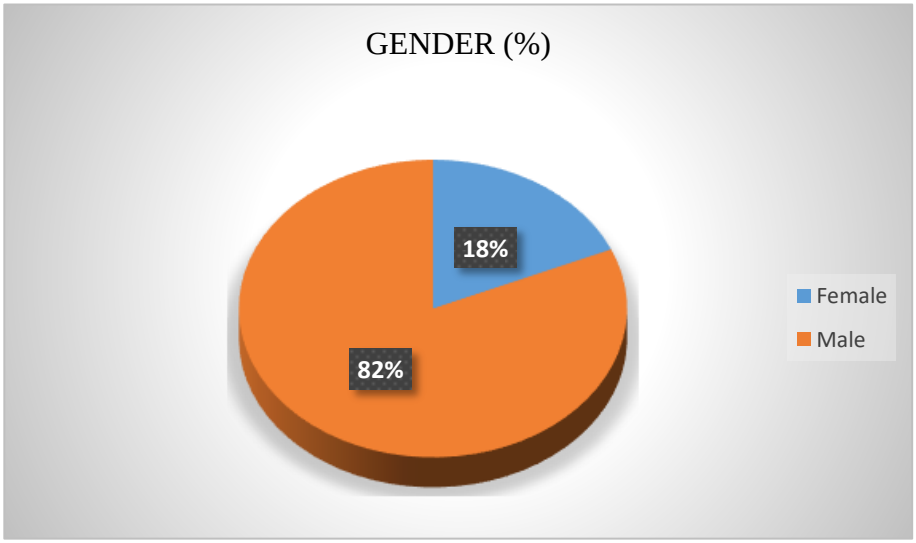


Figure 5: Gender distribution in graph.

Table 5: Co-morbidities associated in the cases.

Co-morbidities	Frequency	Percentage (%)
HTN	74	49
T2DM	14	9.3
T2DM, HTN	16	10.6
Nil	47	31

Majority (49%) of the patients had hypertension as comorbidity, followed by group of people having both diabetes mellitus and hypertension as comorbidities (11%). Diabetes as comorbidity was seen in 10% of cases. It was noted that 31% of cases did not have any comorbidities.

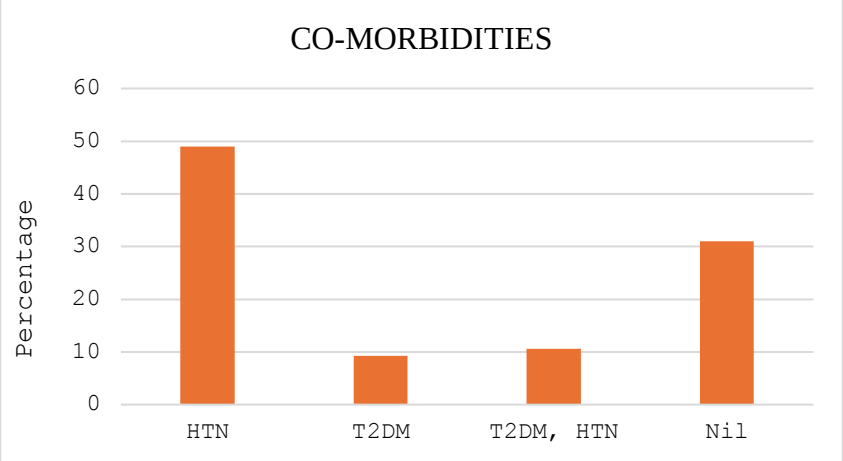


Figure 6: Graphical distribution of comorbidities

Table 6 : Distribution of drug-drug interactions

Drug-Drug Interactions	PQI score	Frequency	Percentage (%)
Yes	0	1	0.7
No	2	150	99.3

Drug- drug interactions were not seen commonly (99%). Only one case showed significant drug-drug interactions which accounted for 0.7%.

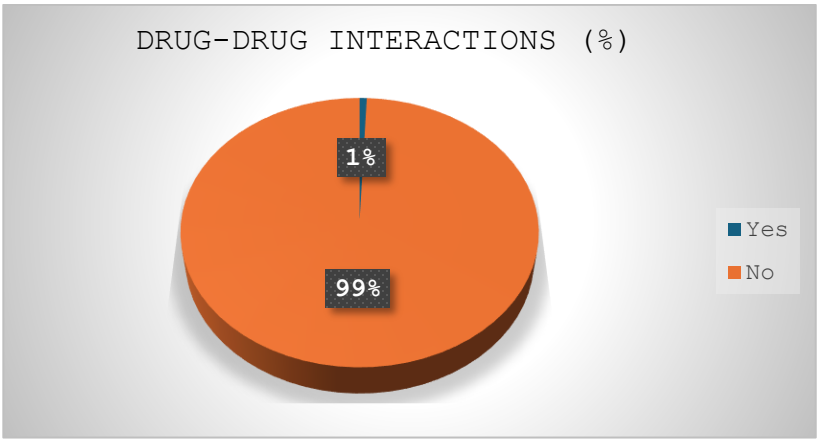


Figure 7: Graphical distribution of drug-drug interactions.

Table 7: Distribution of prescriptions with cheapest drugs

Is the drug Cheapest compared to alternatives	PQI score	Frequency	Percentage (%)
No	0	146	96.7
Yes	1	5	3.3

Majority (97%) of the prescriptions, had few drugs, which were not the cheapest drugs prescribed, among alternatives available in the centre, though majority of the drugs in those prescriptions were cheap. Only 3% of patients did receive the cheapest available drug treatment completely.

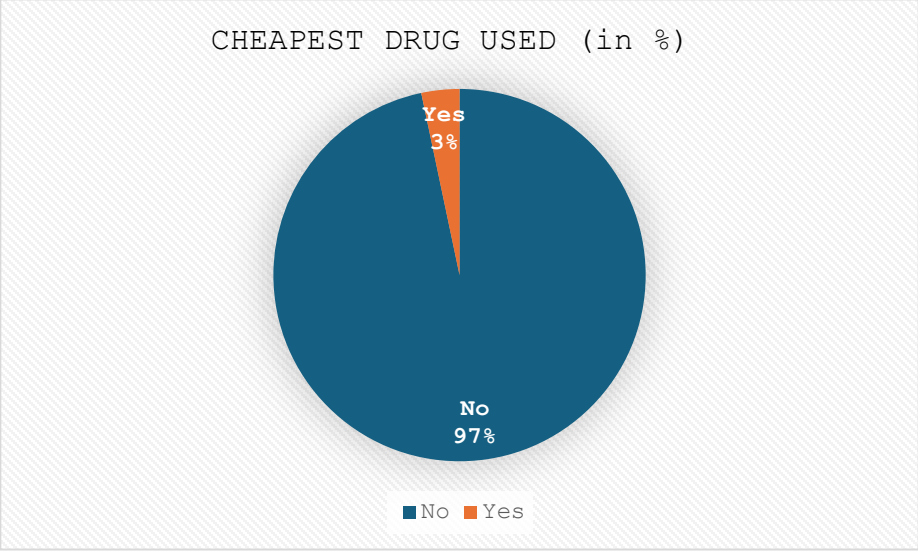


Figure 8: Graphical distribution of prescriptions with the cheapest drug used.

Table 8: Distribution of prescriptions given by generic names.

If all drugs of a patient were prescribed by Generic names	PQI score	Frequency	Percentage(%)
No	0	150	99.3
Yes	1	1	0.7

99% of the prescriptions were not prescribed completely in generic names. Only one prescription was completely seen in generic names (0.7%).

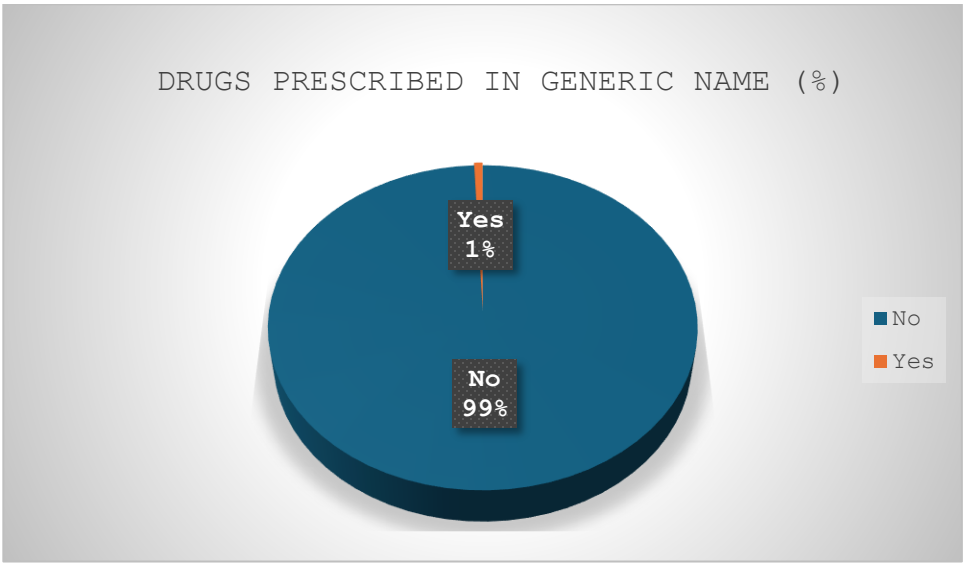


Figure 9 : Graphical distribution of drugs given with generic names.

Table 9 : Distribution of medications written on the prescription clearly

Is the medication clearly written	PQI score	Frequency	Percentage (%)
Not Clear	0	0	0
Marginally Clear	1	66	43.7
Clear	2	85	56.3

The medications were clearly written on 85 prescriptions (56%) and marginally clear in 44% cases.

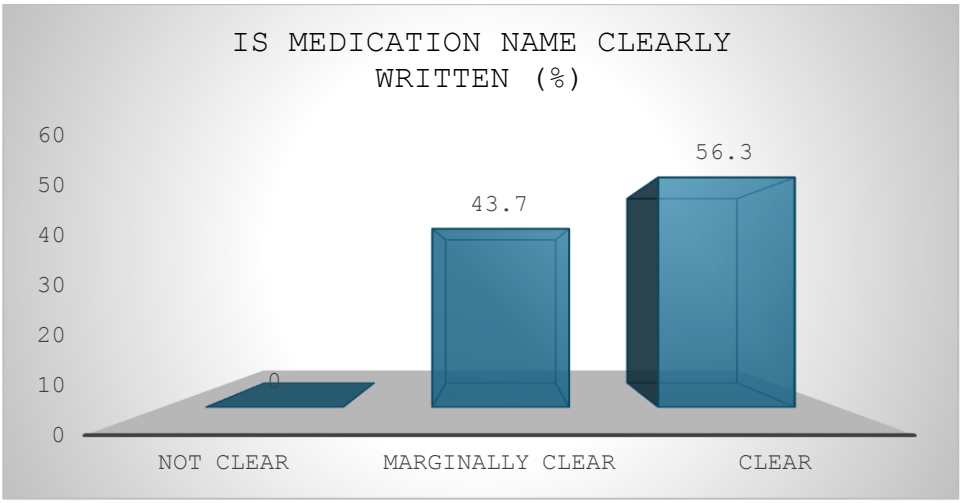


Figure 10: Graphical distribution of prescriptions with clearly written medications.

Table 10 : Distribution of legible writing on prescription

Is Prescriber's writing on the prescription Legible	PQI score	Frequency	Percentage (%)
Ilegible	0	0	0
Barely legible	1	66	43.7
Legible	2	85	56.3

The prescriber's writing was legible in 56% cases and barely legible in 44% cases. None of the prescriptions were illegible.

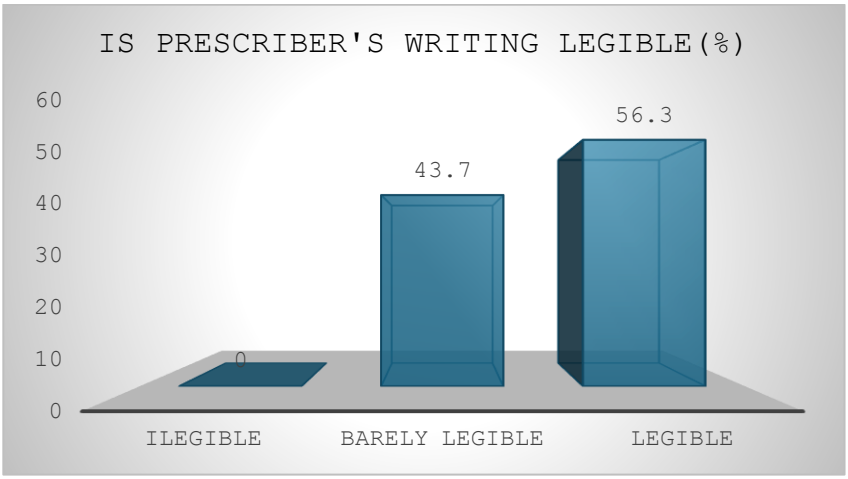


Figure11: Graphical distribution of legible writing on prescription

Table 11: Distribution of adequate information about prescriber.

Is prescriber's Information Adequate	PQI score	Frequency	Percentage (%)
Inadequate	0	92	61
Adequate	2	59	39

The prescriber's information mentioned in the prescription was inadequate mostly (61%). But 39% of the prescriptions were with adequate information about the prescriber.

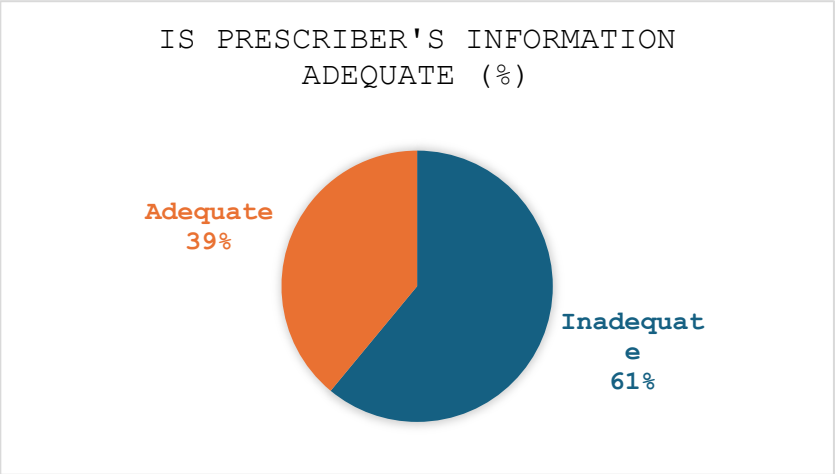


Figure 12 : Graphical distribution of adequate information about prescriber

Table 12: Distribution of adequate information on patient

Is patient's information given adequate	PQI score	Frequency	Percentage (%)
Inadequate	0	0	0
Marginally adequate	1	92	61
Adequate	2	59	39

The patient's information on prescription was only marginally adequate in most cases (61%), though none were inadequate. Around 39% of the prescriptions had adequate information.

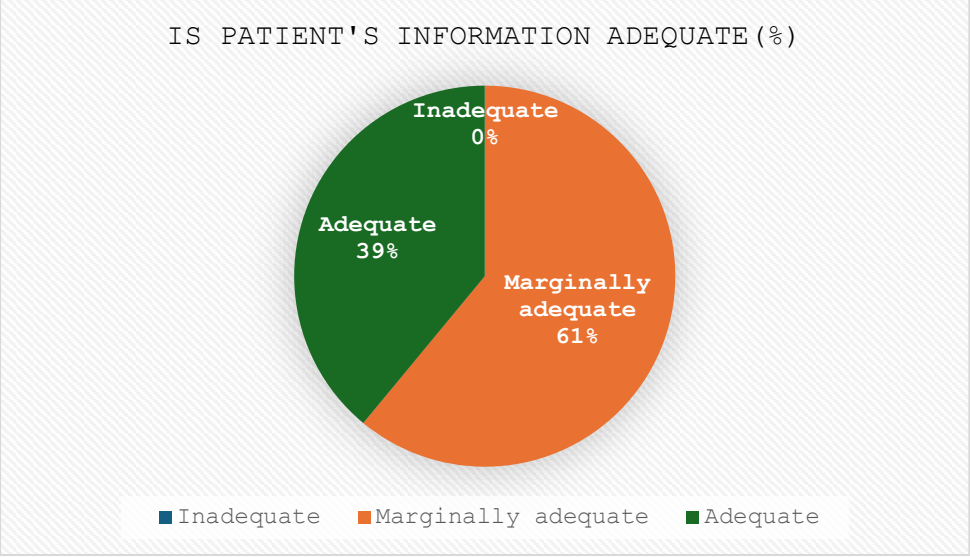


Figure 13: Graphical distribution of adequate information on patient

Table 13: Total PQI score and Prescription quality

PQI score Interval	Prescription Quality	Frequency	Percentage (%)
<31	Poor	0	0
32-33	Medium	0	0
34-43	High	100	100

The total PQI score of each prescription showed that 100% of prescriptions were of High quality, where the score ranges between 34 to 43.

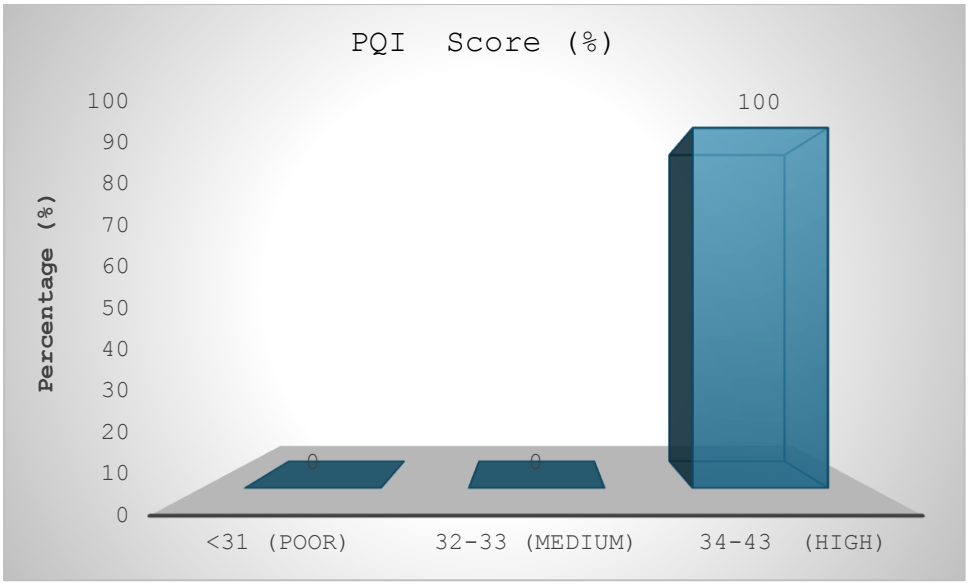


Figure 14: Graphical distribution of PQI scores and Prescription Quality

Table 14: Distribution of diseases in each patient

Number of diseases in a patient	Frequency	Percentage (%)
1	62	41.1
2	72	47.7
3	6	4.0
4	11	7.3

The distribution of diseases showed that majority (48%) of the cases had 2 diseases at the time of diagnosis. 41% of cases, only had that current cardiovascular disease . Around 7% cases had 4 dieases including comorbidities and 4% cases had 3 diseases at the time of diagnosis.

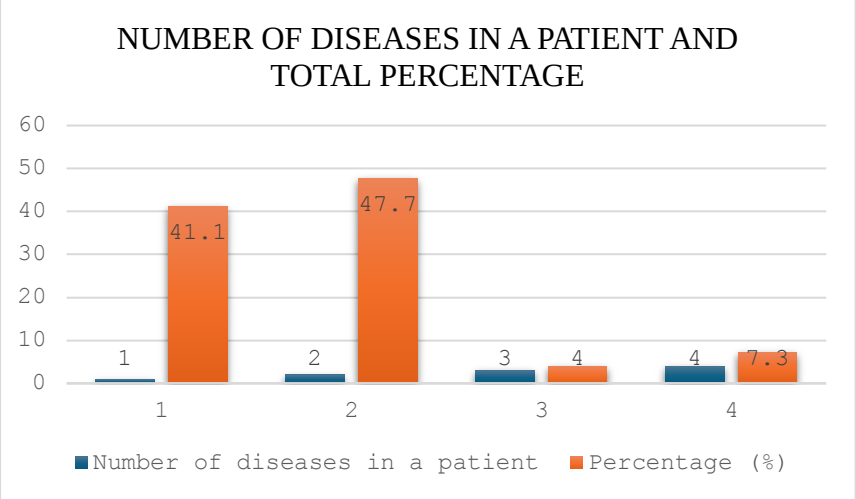


Figure 15: Graph with number of diseases each patient has and its total percentage

Table 15: Number of drugs taken by each patient.

Number of Drugs	Frequency	Percentage (%)
7	5	3.3
8	29	19.2
9	77	51.0
10	16	10.6
11	17	11.3
12	4	2.6
13	2	1.3
14	1	0.7

The maximum number of drugs taken by a patient was 14 drugs, seen in only 1 patient. The minimum number of drugs taken by a patient was 7 drugs, which was seen in 3% of cases. Most of the patients (51%) were taking 9 drugs during the hospital stay.

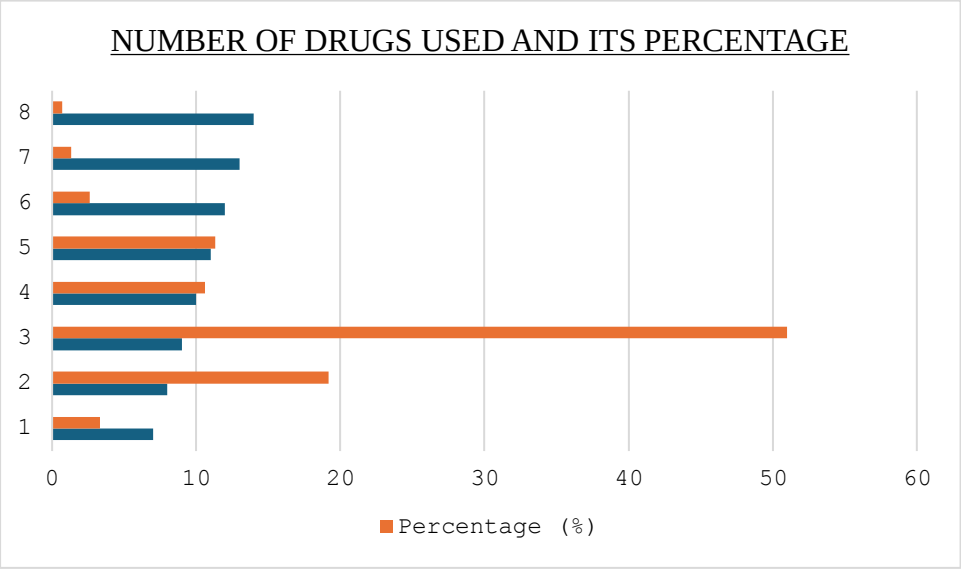


Figure 16: Distribution of dugs taken by each patient and its overall percentage

Table 16 : CRITERIA WISE PQI SCORE, MEAN AND STANDARD DEVIATION

Criteria	PQI scores	Minimum score obtained	Mean	SD
1.Is there indication for drug ?	0-2-4	4	4	0
2.Is the dosage correct ?	0-2-4	4	4	0
3.Is the medication effective for condition ?	0-1-2	2	2	0
4.Is indication supported by evidence ?	0-1-2	2	2	0
5.Are directions for administration correct ?	0-1-2	2	2	0
6.Are directions for administration practical ?	0-1-2	2	2	0
7.Are there clinically significant drug-drug interactions ?	0-1-2	1	1.9	0.08
8.Are there clinically significant drug-disease interactions?	0-2	2	2	0
9.Does patient experience any ADR ?	0-1-2	2	2	0
10.Is there unnecessary duplication of drugs ?	0-1	1	1	0
11.Is the duration of therapy acceptable ?	0-1-2	2	2	0
12.Is this drug cheapest compared to alternatives for the same indication ?	0-1	0	0.03	0.18
13.Is the medication available being prescribed by generic name ?	0-1	0	0.01	0.08
14. Is the medication available in the formulary or essential drug list ?	0-1	1	1	0
15.Does the patient comply with the drug treatment?	0-2	2	2	0
16.Is the medications name on the prescription clearly written?	0-1-2	1	1.56	0.49
17.Is the prescriber's writing on the prescription legible?	0-1-2	1	1.56	0.49
18.Is the prescriber's information on the prescription adequate?	0-2	0	0.79	0.97
19.Is the patient's information on the prescription adequate?	0-1-2	1	1.39	0.49
20.Is the diagnosis on the prescription clearly written ?	0-1-2	2	2	0
21.Does the prescription fulfil the patient's requirement for drug therapy?	0-1	1	1	0
22.Has the patient's condition improved with treatment?	0-1-2	1	1.07	0.25

Table 17 : PQI TOTAL SCORE CORRELATION WITH 22 CRITERIA

PQI	Correlation Coefficient	p VALUE
1.Indication	Nil	Nil
2.Dosage	Nil	Nil
3.Effectiveness	Nil	Nil
4.Evidence-based	Nil	Nil
5.Correct direction of administration	Nil	Nil
6.Practical direction of administration	Nil	Nil
7.Drug-drug interaction	0.127	0.122 (p >0.05)
8.Drug-disease interaction	Nil	Nil
9.Adverse drug reaction	Nil	Nil
10.Unnecessary duplication	Nil	Nil
11.Duration of therapy	Nil	Nil
12.Cheaper than alternatives	0.227	0.005 * (p<0.05)
13.Generic prescribing	0.137	0.094 (p >0.05)
14.In formulary / essential drug list	Nil	Nil
15.Compliance	Nil	Nil
16.Medication's name is clear	0.334	0.003 *
17. Legible	0.334	0.003 *
18.Prescriber's information	0.824	<0.001 *
19.Patient's information	0.748	<0.001 *
20.Diagnosis clearly written	Nil	Nil
21.Treatment fulfil patient's requirement	Nil	Nil
22.Improvement	0.234	0.004 * (p<0.05)

*P < 0.05 – statistically significant

0.1 – 0.49 – mild correlation

0.5 – 0.89 – moderate correlation

0.9 – 1.0 – perfect correlation

DISCUSSION

This study was planned to evaluate the quality of prescribing for chronic conditions in an intensive cardiac care unit setting of a tertiary care centre of India with the help of PQI tool developed by Hassan et al. in 2010. The PQI tool is already validated and claimed to be reliable [8] and hence, it was selected for assessment of prescribing quality in Indian setting.

Our study shows that majority of the patients admitted in the ICCU were in the age group of 60 to 69 years (52%) with male predominance (81%) in the cardiovascular diseases in this tertiary care centre. 49% of the patients had hypertension as comorbidity and 10% had Diabetes mellitus.

Drug-drug interactions were checked with 'Micromedex" software . Only one case showed a major drug-drug interaction which was with Ranolazine and Ondansetron which was noted with the software. Both these drugs cause QT prolongation, so should not be given concurrently. It was noted and hence monitored in ECG, but none observed. Another mentioned moderate interaction was between Amiodarone and atorvastatin, on usage can increase the risk of myopathy, which was also not observed. Aspirin and Bisoprolol showed moderate interaction because beta-blocker and NSAID given together can cause much decrease in blood pressure, it was monitored, none seen.

Also while checking for drug interactions, the anti-platelet drugs and anticoagulant drugs showed major interactions like excessive bleeding if given together. But it is not considered as a major interaction as most of the emergency cardiac conditions like myocardial infarction require fibrinolytic treatment with several drugs of both of these classes as the initial treatment to counteract the ischemic state. This usually will not lead to bleeding as the general treatment recommendations support this [21]. So such drug combinations are not considered as significant drug interactions in the study.

Few drugs in majority of the prescriptions were not the cheapest drugs prescribed, among all available in the centre (97%), though majority of the drugs in those prescriptions were cheap among their alternatives. But it could not be considered, as the prescription need all the drugs to be the cheapest compared to their alternatives, and not few drugs. Hence most of the prescriptions got the score '0' while considering this question. And few cases (3%) did receive the cheapest available drug treatment completely in the prescription.

Indian medical association mentions that generic drugs are 30-80% cheaper than branded drugs and that using generic names in prescriptions will allow patients to choose the drugs they can afford and reduce their expenditure on healthcare [64]. Our study shows that 99% of the prescriptions were not completely prescribed in generic names. An important factor to be considered is this result is with respect to the PQI score, where even if one drug of the entire prescription fails to bear the generic name, the minimum score is counted zero which resulted in the huge 99% of not having generic names.

The medications were clearly written as well as legible in 56% of prescriptions and marginally clear and barely legible in 44% cases.

The information written on the prescription is by the prescriber, which is subjective. The prescriber's as well as patient's information mentioned in the prescription was inadequate mostly (61%) whereas 39% of the prescriptions had with adequate information.

The total PQI score of each prescription showed that 100% of prescriptions were of high quality, with total score between 34 to 43. High quality prescriptions indicate that the system of prescription writing is good in this study area and follows majority of the rules of a good prescription. Since only one department is considered, its protocol for prescription writing being preserved can be assumed.

The distribution of diseases showed that majority (48%) of the cases had 2 diseases at the time of diagnosis, mostly MI and hypertension. 41% of cases, only had that current

cardiovascular disease, which was again MI mostly. Around 7% cases had 4 diseases including comorbidities like Diabetes mellitus, hypertension.

The maximum number of drugs taken by a patient was 14 drugs, seen in only 1 patient. The minimum number of drugs taken by a patient was 7 drugs, which was seen in 3% of cases. Most of the patients (51%) were taking 9 drugs during the hospital stay.

A study of prescription database, which stated that as age increases there is a higher risk of complications and more drugs required for treatment [60]. This is in accordance to our study also most of our patients were in the age group of 50-70 years of age who had these cardiovascular events along with 2 or more comorbidities and hence more number of drugs.

In a study by Suthar and Patel, prescribing quality in terms of PQI score showed 70 % of prescriptions being of poor quality with PQI score ≤31 and claimed that it may be due to that may affect the quality of prescribing like; patient's illness status including comorbidities, number of drugs prescribed, patient flow at health care center, etc [61]. It is in contrast to our study where 100% of the prescriptions were of high quality. An important reason may be as the study was done in a tertiary care centre, where more time for patient care can be provided and improve the prescriptions which can directly affect the care provided, that which is not possible in a PHC where larger turnover of patients occurs daily.

Kumari et al. have reported that polypharmacy (>2 drugs) was seen in majority of the prescriptions studied from public health facilities in India which was minimum at the tertiary level of care facilities, and increased at primary level. Vitamins and other supplements were the major group of drugs prescribed at all the health facilities, followed by antibiotics and non steroidal antinflammatory drugs. Most patients in the primary health care level had a drug prescribed indicating the placebo prescription, at the primary level [62]. But in our study the drugs prescribed in Intensive care unit was evaluated, which did not advise supplementation, rather needed curative treatment, still had polypharmacy due to the disease conditions requiring

multiple drugs.

Polypharmacy was less frequent at PHC with mean number of drugs per prescription was 2.9 [60] where as in our THC was 10. At PHC the majority of patients have simple problems without/with minimum complications or comorbidities , whereas in a THC, the patients approaching especially for cardiovascular conditions will require more drugs along with their existing comorbidities.

The study by Hassan et al. reported that there was no correlation with the PQI total scores and four criteria, namely unnecessary duplication, formulary/essential drug, legibility, and adequate patient information. Yet retained in the PQI questionnaire for validity, legal and clinical significance [8]. Two of these criteria, namely legibility and formulary/essential drug list along with many other criteria also did not correlate with total PQI score in this study. The other parameters that did not correlate with PQI score are indication, dosage, effectiveness, evidence-based, correct direction, practical direction, drug-disease interaction, adverse drug reaction, unnecessary duplication and duration of therapy, compliance and treatment fulfilling patient's requirements. This can be due to the severity of conditions that patients presented with requiring more drugs which are all adequate.

Bhadiyadara et al. , in their study notices 80% were of high-quality prescription, while evaluating prescriptions written for bronchitis [63]. Our study also revealed a similar result , which was also conducted at a tertiary care teaching hospital where prescriptions are written by consultants as well as post-graduate resident doctors. Hence, it might be possible to modify the quality of prescribing by discussing our findings with them.

We have selected only cardiovascular diseases, which can include many, but disease variation affecting number of drugs will reduce here. The findings of our study are limited to a tertiary health-care facility, so acceptability cannot be assumed for other setups.

SUMMARY

This study is a prospective study conducted from 1st July 2023 to 30th June 2024. It explores the quality of prescriptions advised in the intensive cardiac care unit of a tertiary centre. Study examines the various criterias of a prescription in benefiting a patient. The PQI tool was applied on 151 prescriptions from ICCU and found out that all the prescriptions were of high quality. 52% of the patients evaluated were in the age group 60-69 years, with a male predominance of 81%. Majority of the patients had hypertension and the comorbidity. Drug-drug interactions was not common. Only 3% of prescriptions had completely advised the cheapest available drugs. Similarly only one prescription was entirely prescribed in generic names. The prescriber's writing was legible and medications clearly written in 44% of all cases. The information about the prescriber and the patient was mostly inadequate (61%). The overall prescription quality was good which shows that a good prescription can be maintained.

CONCLUSION

Prescription Quality Index tool is a valid tool to evaluate the quality of prescriptions in chronic conditions. It can used in different clinical situations at different health-care facilities. Our study shows that high quality prescriptions can be attained by good care that doctors provide while writing a prescription especially in an intensive cardiac care unit in a tertiary care unit. It is obtained only by following the factors that make a good prescription.

BIBLIOGRAPHY

1. Kenny BJ, Preuss CV. Pharmacy Prescription Requirements. 2024 Jan 9. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan–.

2. Spinewine A, Schmader KE, Barber N, Hughes C, Lapane KL, Swine C. Appropriate prescribing in elderly people: how well can it be measured and optimised? Lancet. 2007;370:173–84. doi: 10.1016/S0140-6736(07)61091-5.

3. Barber N, Rawlins M, Dean Franklin B. Reducing prescribing error: competence, control, and culture. Qual Saf Health Care. 2003 Dec;12 Suppl 1(Suppl 1):i29-32. doi: 10.1136/qhc.12.suppl_1.i29.

4. Lesar TS. Prescribing errors involving medication dosage forms. J Gen Intern Med. 2002 Aug;17(8):579-87. doi: 10.1046/j.1525-1497.2002.11056.x.

5. Ni KM, Siang CS, bin Ramli MN. Noncompliance with prescription writing requirements and prescribing errors in an outpatient department. Malaysian Journal of Pharmacy (MJP). 2002 Jul 1;1(2):45-50.

6. Hanlon JT, Schmader KE, Samsa GP, Weinberger M, Uttech KM, Lewis IK, Cohen HJ, Feussner JR. A method for assessing drug therapy appropriateness. Journal of clinical epidemiology. 1992 Oct 1;45(10):1045-51.

7. Tully MP, Javed N, Cantrill JA. Development and face validity of explicit indicators of

appropriateness of long term prescribing. Pharmacy World and Science. 2005 Oct;27:407-13.

8. Hassan NB, Ismail HC, Naing L, Conroy RM, Abdul Rahman AR. Development and validation of a new Prescription Quality Index. British journal of clinical pharmacology. 2010 Oct;70(4):500-13.

9. Benjamin EJ, Virani SS, Callaway CW, Chamberlain AM, Chang AR, Cheng S, Chiuve SE, Cushman M, Delling FN, Deo R, De Ferranti SD. Heart disease and stroke statistics—2018 update: a report from the American Heart Association. Circulation. 2018 Mar 20;137(12):e67-492.

10. Prabhakaran D, Jeemon P, Roy A. Cardiovascular diseases in India: current epidemiology and future directions. Circulation. 2016 Apr 19;133(16):1605-20.

11. Olvera Lopez E, Ballard BD, Jan A. Cardiovascular Disease.[Updated 2023 Aug 22]. StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing. 2024.

12. Libby P, Ridker PM, Hansson GK. Progress and challenges in translating the biology of atherosclerosis. Nature. 2011 May 19;473(7347):317-25.

13. Hajar R. Coronary Heart Disease: From Mummies to 21: st: Century. Heart Views. 2017 Apr 1;18(2):68-74.

14. Van Tellingen C. Chest pain and angina pectoris–or the ugly swan and the beautiful duckling. Netherlands Heart Journal. 2010 Nov;18(11):561-7.

15. Leary T. ATHEROSCLEROSIS, THE IMPORTANT FORM OF ARTERIOSCLEROSIS, A METABOLIC DISEASE: ELEVENTH LUDVIG HEKTOEN LECTURE OF THE FRANK BILLINGS FOUNDATION OF THE INSTITUTE OF MEDICINE OF CHICAGO. Journal of the American Medical Association. 1935 Aug 17;105(7):475-81.

16. Hajar R. Evolution of myocardial infarction and its biomarkers: A historical perspective. Heart views. 2016 Oct 1;17(4):167-72.

17. Nabel EG, Braunwald E. A tale of coronary artery disease and myocardial infarction. New England Journal of Medicine. 2012 Jan 5;366(1):54-63.

18. Ryan TJ. The coronary angiogram and its seminal contributions to cardiovascular medicine over five decades. Circulation. 2002 Aug 6;106(6):752-6.

19. Julian D. Treatment of cardiac arrest in acute myocardial ischaemia and infarction. The Lancet. 1961 Oct 14;278(7207):840-4.

20. National Center for Health Statistics, National Center for Health Statistics. Multiple Cause of Death 2018–2022 on CDC WONDER Database. National Center for Health Statistics: Hyattsville, MD, USA. 2023.

21. Byrne RA, Rossello X, Coughlan J, Barbato E, Berry C, Chieffo A, Claeys MJ, Dan GA, Dweck MR, Galbraith M, Gilard M. 2023 ESC guidelines for the management of acute coronary syndromes: developed by the task force on the management of acute coronary

syndromes of the European Society of Cardiology (ESC). European Heart Journal: Acute Cardiovascular Care. 2024 Jan;13(1):55-161.

22. Hofmann R, James SK, Jernberg T, Lindahl B, Erlinge D, Witt N, Arefalk G, Frick M, Alfredsson J, Nilsson L, Ravn-Fischer A. Oxygen therapy in suspected acute myocardial infarction. New England Journal of Medicine. 2017 Sep 28;377(13):1240-9.

23. Henrikson CA, Howell EE, Bush DE, Miles JS, Meininger GR, Friedlander T, Bushnell AC, Chandra-Strobos N. Chest pain relief by nitroglycerin does not predict active coronary artery disease. Annals of internal medicine. 2003 Dec 16;139(12):979-86.

24. Charpentier S, Galinski M, Bounes V, Ricard-Hibon A, El-Khoury C, Elbaz M, Ageron FX, Manzo-Silberman S, Soulat L, Lapostolle F, Gérard A. Nitrous oxide/oxygen plus acetaminophen versus morphine in ST elevation myocardial infarction: open-label, cluster-randomized, non-inferiority study. Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine. 2020 Dec;28:1-9.

25. Parodi G, Bellandi B, Xanthopoulou I, Capranzano P, Capodanno D, Valenti R, Stavrou K, Migliorini A, Antoniucci D, Tamburino C, Alexopoulos D. Morphine is associated with a delayed activity of oral antiplatelet agents in patients with ST-elevation acute myocardial infarction undergoing primary percutaneous coronary intervention. Circulation: Cardiovascular Interventions. 2015 Jan;8(1):e001593.

26. Clemente-Moragón A, Gomez M, Villena-Gutiérrez R, Lalama DV, García-Prieto J, Martinez F, Sánchez-Cabo F, Fuster V, Oliver E, Ibáñez B. Metoprolol exerts a non-class effect

against ischaemia–reperfusion injury by abrogating exacerbated inflammation. European heart journal. 2020 Dec 7;41(46):4425-40.

27. Ibanez B, Macaya C, Sánchez-Brunete V, Pizarro G, Fernández-Friera L, Mateos A, Fernández-Ortiz A, García-Ruiz JM, García-Álvarez A, Iñiguez A, Jiménez-Borreguero J. Effect of early metoprolol on infarct size in ST-segment–elevation myocardial infarction patients undergoing primary percutaneous coronary intervention: the effect of metoprolol in cardioprotection during an acute myocardial infarction (METOCARD-CNIC) trial. Circulation. 2013 Oct 1;128(14):1495-503.

28. Keeley EC, Boura JA, Grines CL. Primary angioplasty versus intravenous thrombolytic therapy for acute myocardial infarction: a quantitative review of 23 randomised trials. The lancet. 2003 Jan 4;361(9351):13-20.

29. Frederick PD, Chakrabarti AK, Kirtane AJ, Ullman E, Dejam A, Miller DP, Henry TD, Gibson CM. Benefit of transferring ST-segment–elevation myocardial infarction patients for percutaneous coronary intervention compared with administration of onsite fibrinolytic declines as delays increase. Circulation. 2011 Dec 6;124(23):2512-21.

30. Gershlick AH, Stephens-Lloyd A, Hughes S, Abrams KR, Stevens SE, Uren NG, de Belder A, Davis J, Pitt M, Banning A, Baumbach A. Rescue angioplasty after failed thrombolytic therapy for acute myocardial infarction. New England Journal of Medicine. 2005 Dec 29;353(26):2758-68.

31. Wijeysundera HC, Vijayaraghavan R, Nallamothu BK, Foody JM, Krumholz HM, Phillips

CO, Kashani A, You JJ, Tu JV, Ko DT. Rescue angioplasty or repeat fibrinolysis after failed fibrinolytic therapy for ST-segment myocardial infarction: a meta-analysis of randomized trials. Journal of the American College of Cardiology. 2007 Jan 30;49(4):422-30.

32. Hochman JS, Lamas GA, Buller CE, Dzavik V, Reynolds HR, Abramsky SJ, Forman S, Ruzyllo W, Maggioni AP, White H, Sadowski Z. Coronary intervention for persistent occlusion after myocardial infarction. New England Journal of Medicine. 2006 Dec 7;355(23):2395-407.

33. Trialists FT. Indications for fibrinolytic therapy in suspected acute myocardial infarction: collaborative overview of early mortality and major morbidity results from all randomised trials of more than 1000 patients. The lancet. 1994 Feb 5;343(8893):311-22.

34. Madan M, Halvorsen S, Di Mario C, Tan M, Westerhout CM, Cantor WJ, Le May MR, Borgia F, Piscione F, Scheller B, Armstrong PW. Relationship between time to invasive assessment and clinical outcomes of patients undergoing an early invasive strategy after fibrinolysis for ST-segment elevation myocardial infarction: a patient-level analysis of the randomized early routine invasive clinical trials. JACC: Cardiovascular Interventions. 2015 Jan;8(1 Part B):166-74.

35. Montalescot G, Van't Hof AW, Lapostolle F, Silvain J, Lassen JF, Bolognese L, Cantor WJ, Cequier Á, Chettibi M, Goodman SG, Hammett CJ. Prehospital ticagrelor in ST-segment elevation myocardial infarction. New England Journal of Medicine. 2014 Sep 11;371(11):1016-27.

36. Montalescot G, Bolognese L, Dudek D, Goldstein P, Hamm C, Tanguay JF, Ten Berg JM, Miller DL, Costigan TM, Goedicke J, Silvain J. Pretreatment with prasugrel in non–ST-segment elevation acute coronary syndromes. New England Journal of Medicine. 2013 Sep 12;369(11):999-1010.

37. McDonagh TA, Metra M, Adamo M, Gardner RS, Baumbach A, Böhm M, Burri H, Butler J, Čelutkienė J, Chioncel O, Cleland JG. 2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure: Developed by the Task Force for the diagnosis and treatment of acute and chronic heart failure of the European Society of Cardiology (ESC) With the special contribution of the Heart Failure Association (HFA) of the ESC. European heart journal. 2021 Sep 21;42(36):3599-726.

38. Hochman JS, Sleeper LA, Webb JG, Sanborn TA, White HD, Talley JD, Buller CE, Jacobs AK, Slater JN, Col J, McKinlay SM. Early revascularization in acute myocardial infarction complicated by cardiogenic shock. New England Journal of Medicine. 1999 Aug 26;341(9):625-34.

39. Thiele H, Akin I, Sandri M, Fuernau G, de Waha S, Meyer-Saraei R, Nordbeck P, Geisler T, Landmesser U, Skurk C, Fach A. PCI strategies in patients with acute myocardial infarction and cardiogenic shock. New England Journal of Medicine. 2017 Dec 21;377(25):2419-32.

40. Küpper AJ, Verheugt FW, Peels CH, Galema TW, Roos JP. Left ventricular thrombus incidence and behavior studied by serial two-dimensional echocardiography in acute anterior myocardial infarction: left ventricular wall motion, systemic embolism and oral anticoagulation. Journal of the American College of Cardiology. 1989 Jun 1;13(7):1514-20.

41. Zhang Z, Si D, Zhang Q, Jin L, Zheng H, Qu M, Yu M, Jiang Z, Li D, Li S, Yang P. Prophylactic rivaroxaban therapy for left ventricular thrombus after anterior ST-segment elevation myocardial infarction. Cardiovascular Interventions. 2022 Apr 25;15(8):861-72.

42. Hindricks G, Potpara T, Dagres N, Arbelo E, Bax JJ, Blomström-Lundqvist C, Boriani G, Castella M, Dan GA, Dilaveris PE, Fauchier L. 2020 ESC Guidelines for the diagnosis and management of atrial fibrillation developed in collaboration with the European Association for Cardio-Thoracic Surgery (EACTS) The Task Force for the diagnosis and management of atrial fibrillation of the European Society of Cardiology (ESC) Developed with the special contribution of the European Heart Rhythm Association (EHRA) of the ESC. European heart journal. 2021 Feb 1;42(5):373-498.

43. Wolfe CL, Nibley C, Bhandari A, Chatterjee K, Scheinman M. Polymorphous ventricular tachycardia associated with acute myocardial infarction. Circulation. 1991 Oct;84(4):1543-51.

44. Komatsu Y, Hocini M, Nogami A, Maury P, Peichl P, Iwasaki YK, Masuda K, Denis A, Voglimacci-Stephanopoli Q, Wichterle D, Kawamura M. Catheter ablation of refractory ventricular fibrillation storm after myocardial infarction: a multicenter study. Circulation. 2019 May 14;139(20):2315-25.

45. Kwok CS, Sherwood MW, Watson SM, Nasir SB, Sperrin M, Nolan J, Kinnaird T, Kiatchoosakun S, Ludman PF, de Belder MA, Rao SV. Blood transfusion after percutaneous coronary intervention and risk of subsequent adverse outcomes: a systematic review and meta-analysis. JACC: Cardiovascular Interventions. 2015 Mar;8(3):436-46.

46. Mehran R, Baber U, Steg PG, Ariti C, Weisz G, Witzenbichler B, Henry TD, Kini AS, Stuckey T, Cohen DJ, Berger PB. Cessation of dual antiplatelet treatment and cardiac events after percutaneous coronary intervention (PARIS): 2 year results from a prospective observational study. The Lancet. 2013 Nov 23;382(9906):1714-22.

47. Murray JF. Pulmonary edema: pathophysiology and diagnosis. The International journal of tuberculosis and lung disease. 2011 Feb 1;15(2):155-60.

48. Chioncel O, Collins SP, Ambrosy AP, Gheorghiade M, Filippatos G. Pulmonary oedema—therapeutic targets. Cardiac Failure Review. 2015 Apr;1(1):38.

49. Alzahri MS, Rohra A, Peacock WF. Nitrates as a treatment of acute heart failure. Cardiac failure review. 2016 May;2(1):51.

50. Peacock WF, Chandra A, Char D, Collins S, Der Sahakian G, Ding L, Dunbar L, Fermann G, Fonarow GC, Garrison N, Hu MY. Clevidipine in acute heart failure: results of the a study of blood pressure control in acute heart failure—a pilot study (PRONTO). American heart journal. 2014 Apr 1;167(4):529-36.

51. Schneider JF, Thomas Jr HE, Kreger BE, McNAMARA PM, Kannel WB. Newly acquired left bundle-branch block: the Framingham study. Annals of Internal Medicine. 1979 Mar 1;90(3):303-10.

52. Surkova E, Badano LP, Bellu R, Aruta P, Sambugaro F, Romeo G, Migliore F, Muraru D. Left bundle branch block: from cardiac mechanics to clinical and diagnostic challenges. Ep

Europace. 2017 Aug 1;19(8):1251-71.

53. Kafle, Kumud, How to Investigate Drug Use in Health Facilities, 1993/11/30, https://www.researchgate.net/publication/340271552_How_to_Investigate_Drug_Use_in_Health_Facilities

54. Isah A, Laing R, Quick J, Mabadeje A.F.B, Santoso B, Hogerzeil H, Ross-Degnan D, The Development of Reference Values for the WHO Health Facility Core Prescribing Indicators, West African Journal of Pharmacology and Drug Research,2001/01/01, 18, 10.4314/wajpdr.v18i1.14718

55. Hogerzeil HV. Promoting rational prescribing: an international perspective. British journal of clinical pharmacology. 1995 Jan;39(1):1-6.

56. Mahar M, inventor. Prescription order packaging system and method. United States patent application US 10/895,586. 2004 Dec 23.

57. Tully MP, Ashcroft DM, Dornan T, Lewis PJ, Taylor D, Wass V. The causes of and factors associated with prescribing errors in hospital inpatients: a systematic review. Drug safety. 2009 Oct;32:819-36.

58. Majumdar SR, McAlister FA, Furberg CD. From knowledge to practice in chronic cardiovascular disease: a long and winding road. Journal of the American College of Cardiology. 2004 May 19;43(10):1738-42.

59. Essential Medicines [Internet]. cdsco.gov.in. Available from: https://cdsco.gov.in/opencms/opencms/en/consumer/Essential-Medicines/

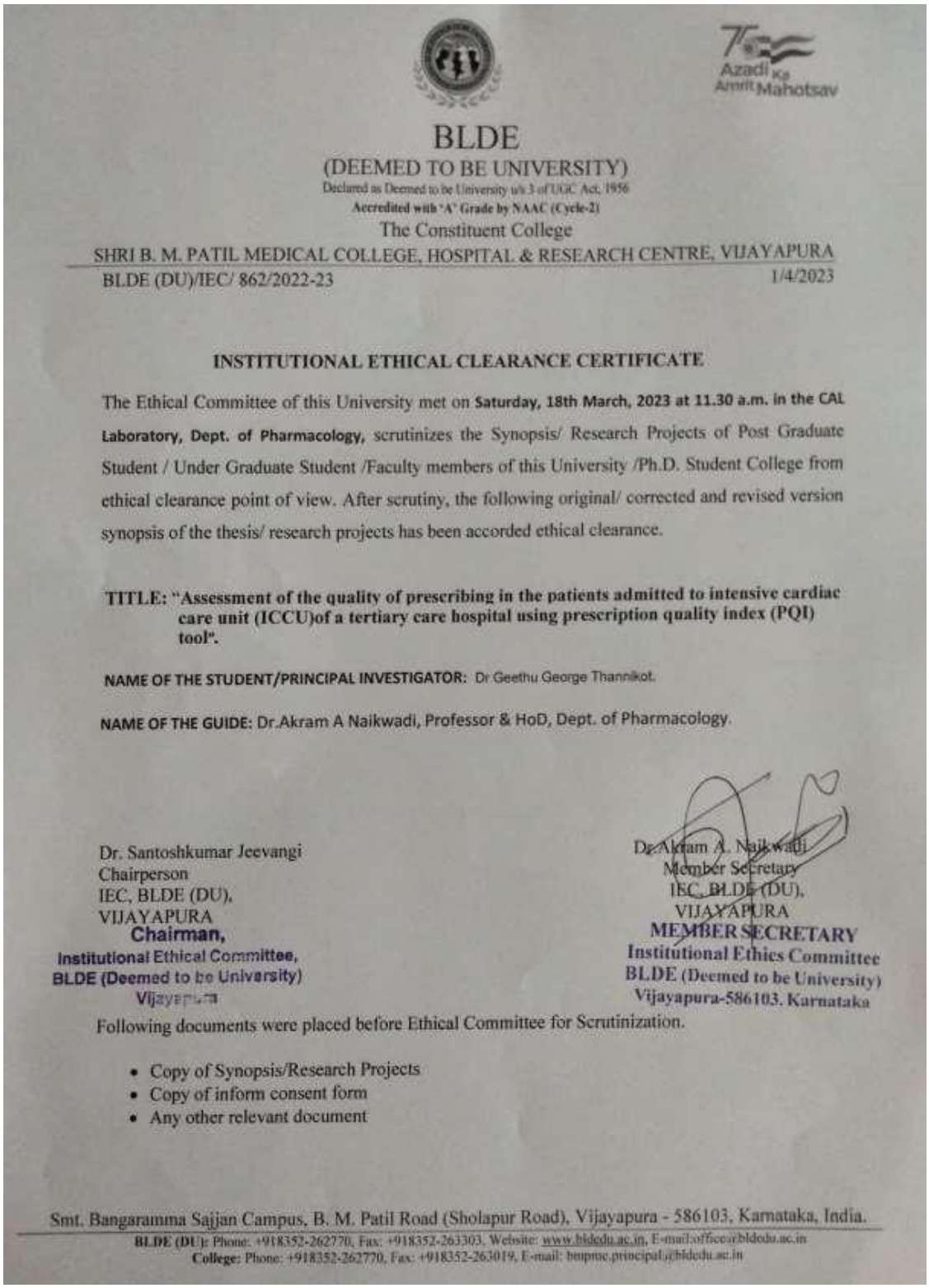
60. Malhotra S. Doctors in India raise concerns about new mandate to prescribe generically or risk suspension.

61. Suthar JV, Patel VJ. Prescribing quality in patients with chronic diseases at primary and secondary health care facilities using prescription quality index tool. Int J Basic Clin Pharmacol. 2014 May;3(3):553-9.

62. Kumari R, Idris MZ, Bhushan V, Khanna A, Agrawal M, Singh SK. Assessment of prescription pattern at the public health facilities of Lucknow district. Indian journal of pharmacology. 2008 Nov 1;40(6):243-7.

63. Bhadiyadara SN, Dhanani JV, Rana DA, Malhotra SD, Patel VJ. Assessment of prescription quality in patients with chronic respiratory disorders at a tertiary care teaching hospital using the prescription quality index tool. National Journal of Physiology, Pharmacy and Pharmacology. 2019 Jun 2;9(6):502-.

ANNEXURE-1



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(DEEMED TO BE UNIVERSITY)
Declared as Deemed to be University u/s 3 of UGC Act, 1956
Accredited with 'A' Grade by NAAC (Cycle-2)
The Constituent College
SHRI B. M. PATIL MEDICAL COLLEGE, HOSPITAL & RESEARCH CENTRE, VIJAYAPURA

BLDE (DU)/IEC/ 862/2022-23 1/4/2023

INSTITUTIONAL ETHICAL CLEARANCE CERTIFICATE

The Ethical Committee of this University met on **Saturday, 18th March, 2023 at 11.30 a.m. in the CAL Laboratory, Dept. of Pharmacology,** scrutinizes the Synopsis/ Research Projects of Post Graduate Student / Under Graduate Student /Faculty members of this University /Ph.D. Student College from ethical clearance point of view. After scrutiny, the following original/ corrected and revised version synopsis of the thesis/ research projects has been accorded ethical clearance.

TITLE: "Assessment of the quality of prescribing in the patients admitted to intensive cardiac care unit (ICCU)of a tertiary care hospital using prescription quality index (PQI) tool".

NAME OF THE STUDENT/PRINCIPAL INVESTIGATOR: Dr Geethu George Thannikot.

NAME OF THE GUIDE: Dr.Akram A Naikwadi, Professor & HoD, Dept. of Pharmacology.

Dr. Santoshkumar Jeevangi
Chairperson
IEC, BLDE (DU),
VIJAYAPURA
Chairman,
Institutional Ethical Committee,
BLDE (Deemed to be University)
Vijayapura

Dr.Akram A. Naikwadi
Member Secretary
IEC, BLDE (DU),
VIJAYAPURA
MEMBER SECRETARY
Institutional Ethics Committee
BLDE (Deemed to be University)
Vijayapura-586103. Karnataka

Following documents were placed before Ethical Committee for Scrutinization.

- Copy of Synopsis/Research Projects
- Copy of inform consent form
- Any other relevant document

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ANNEXURE-2

PROFORMA

NAME : CASE NO. :

AGE :

GENDER :

D.O.A :

ADDRESS :

D.O.STUDY :

IP No :

DIAGNOSIS :

MASTER CHART OF CASES 1-35 ON PQI QUESTIONS 1-11

Sl. No	Sex	Age	CM	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11
1	F	53	H	4	4	2	2	2	2	2	2	2	1	2
2	M	50		4	4	2	2	2	2	2	2	2	1	2
3	M	48		4	4	2	2	2	2	2	2	2	1	2
4	F	75	H	4	4	2	2	2	2	2	2	2	1	2
5	F	54		4	4	2	2	2	2	2	2	2	1	2
6	M	60		4	4	2	2	2	2	2	2	2	1	2
7	F	53	H	4	4	2	2	2	2	2	2	2	1	2
8	M	62	H,T	4	4	2	2	2	2	2	2	2	1	2
9	M	60		4	4	2	2	2	2	2	2	2	1	2
10	F	55		4	4	2	2	2	2	2	2	2	1	2
11	M	62	H	4	4	2	2	2	2	2	2	2	1	2
12	M	60	T	4	4	2	2	2	2	2	2	2	1	2
13	M	68	H	4	4	2	2	2	2	2	2	2	1	2
14	M	55		4	4	2	2	2	2	1	2	2	1	2
15	M	56		4	4	2	2	2	2	2	2	2	1	2
16	F	53	H	4	4	2	2	2	2	2	2	2	1	2
17	M	61	H,T	4	4	2	2	2	2	2	2	2	1	2
18	M	65	H	4	4	2	2	2	2	2	2	2	1	2
19	M	60		4	4	2	2	2	2	2	2	2	1	2
20	F	60		4	4	2	2	2	2	2	2	2	1	2
21	M	57	T	4	4	2	2	2	2	2	2	2	1	2
22	M	50	H	4	4	2	2	2	2	2	2	2	1	2
23	M	65	H,T	4	4	2	2	2	2	2	2	2	1	2
24	M	61	H,T	4	4	2	2	2	2	2	2	2	1	2
25	M	65	HTN	4	4	2	2	2	2	2	2	2	1	2
26	M	68	HTN	4	4	2	2	2	2	2	2	2	1	2
27	F	55	HTN	4	4	2	2	2	2	2	2	2	1	2
28	F	65	HTN	4	4	2	2	2	2	2	2	2	1	2
29	M	45		4	4	2	2	2	2	2	2	2	1	2
30	F	66	T,H	4	4	2	2	2	2	2	2	2	1	2
31	M	60		4	4	2	2	2	2	2	2	2	1	2
32	F	40		4	4	2	2	2	2	2	2	2	1	2
33	M	38		4	4	2	2	2	2	2	2	2	1	2
34	F	65	H	4	4	2	2	2	2	2	2	2	1	2
35	M	52	T	4	4	2	2	2	2	2	2	2	1	2

MASTER CHART OF CASES 35-70 ON PQI QUESTIONS 1-11

Sl. No	Sex	Age	CM	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11
36	F	50	H	4	4	2	2	2	2	2	2	2	1	2
37	F	55	H	4	4	2	2	2	2	2	2	2	1	2
38	F	55	H	4	4	2	2	2	2	2	2	2	1	2
39	M	54		4	4	2	2	2	2	2	2	2	1	2
40	M	52		4	4	2	2	2	2	2	2	2	1	2
41	F	50		4	4	2	2	2	2	2	2	2	1	2
42	M	45	H	4	4	2	2	2	2	2	2	2	1	2
43	F	65	H	4	4	2	2	2	2	2	2	2	1	2
44	M	50	T	4	4	2	2	2	2	2	2	2	1	2
45	F	65	H	4	4	2	2	2	2	2	2	2	1	2
46	M	61	H,T	4	4	2	2	2	2	2	2	2	1	2
47	M	40		4	4	2	2	2	2	2	2	2	1	2
48	M	60		4	4	2	2	2	2	2	2	2	1	2
49	M	68	H	4	4	2	2	2	2	2	2	2	1	2
50	M	50		4	4	2	2	2	2	2	2	2	1	2
51	M	62	T,H	4	4	2	2	2	2	2	2	2	1	2
52	M	55		4	4	2	2	2	2	2	2	2	1	2
53	M	56	T	4	4	2	2	2	2	2	2	2	1	2
54	M	68		4	4	2	2	2	2	2	2	2	1	2
55	M	64	H	4	4	2	2	2	2	2	2	2	1	2
56	M	47		4	4	2	2	2	2	2	2	2	1	2
57	M	68	H	4	4	2	2	2	2	2	2	2	1	2
58	F	55		4	4	2	2	2	2	2	2	2	1	2
59	M	68	H	4	4	2	2	2	2	2	2	2	1	2
60	F	55		4	4	2	2	2	2	2	2	2	1	2
61	M	55	T	4	4	2	2	2	2	2	2	2	1	2
62	M	50	T,H	4	4	2	2	2	2	2	2	2	1	2
63	F	55		4	4	2	2	2	2	2	2	2	1	2
64	M	55	H	4	4	2	2	2	2	2	2	2	1	2
65	M	68	H	4	4	2	2	2	2	2	2	2	1	2
66	M	54		4	4	2	2	2	2	2	2	2	1	2
67	M	55	H	4	4	2	2	2	2	2	2	2	1	2
68	F	60		4	4	2	2	2	2	2	2	2	1	2
69	F	50		4	4	2	2	2	2	2	2	2	1	2
70	M	48	T,H	4	4	2	2	2	2	2	2	2	1	2

MASTER CHART OF CASES 71-105 ON PQI QUESTIONS 1-11

Sl. No	Sex	Age	CM	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11
71	M	45		4	4	2	2	2	2	2	2	2	1	2
72	M	55	T	4	4	2	2	2	2	2	2	2	1	2
73	F	55		4	4	2	2	2	2	2	2	2	1	2
74	M	68	H	4	4	2	2	2	2	2	2	2	1	2
75	M	50		4	4	2	2	2	2	2	2	2	1	2
76	M	45		4	4	2	2	2	2	2	2	2	1	2
77	M	58	H	4	4	2	2	2	2	2	2	2	1	2
78	M	60	T	4	4	2	2	2	2	2	2	2	1	2
79	M	50	H	4	4	2	2	2	2	2	2	2	1	2
80	M	68	H	4	4	2	2	2	2	2	2	2	1	2
81	M	45		4	4	2	2	2	2	2	2	2	1	2
82	M	68	H	4	4	2	2	2	2	2	2	2	1	2
83	M	65		4	4	2	2	2	2	2	2	2	1	2
84	M	60		4	4	2	2	2	2	2	2	2	1	2
85	M	50	T	4	4	2	2	2	2	2	2	2	1	2
86	M	48		4	4	2	2	2	2	2	2	2	1	2
87	M	54	T,H	4	4	2	2	2	2	2	2	2	1	2
88	M	68	H	4	4	2	2	2	2	2	2	2	1	2
89	M	59		4	4	2	2	2	2	2	2	2	1	2
90	M	64	H	4	4	2	2	2	2	2	2	2	1	2
91	F	45		4	4	2	2	2	2	2	2	2	1	2
92	M	65	H	4	4	2	2	2	2	2	2	2	1	2
93	M	63	H	4	4	2	2	2	2	2	2	2	1	2
94	F	45		4	4	2	2	2	2	2	2	2	1	2
95	M	65	H	4	4	2	2	2	2	2	2	2	1	2
96	M	48	T,H	4	4	2	2	2	2	2	2	2	1	2
97	M	62	H	4	4	2	2	2	2	2	2	2	1	2
98	M	60		4	4	2	2	2	2	2	2	2	1	2
99	M	65	H	4	4	2	2	2	2	2	2	2	1	2
100	M	63	H	4	4	2	2	2	2	2	2	2	1	2
101	M	60	H	4	4	2	2	2	2	2	2	2	1	2
102	M	65	H	4	4	2	2	2	2	2	2	2	1	2
103	F	54		4	4	2	2	2	2	2	2	2	1	2
104	M	65	H	4	4	2	2	2	2	2	2	2	1	2
105	M	63	H	4	4	2	2	2	2	2	2	2	1	2

MASTER CHART OF CASES 106-151 ON PQI QUESTIONS 1-11

Sl. No	Sex	Age	CM	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11
106	M	63	H	4	4	2	2	2	2	2	2	2	1	2
107	M	65	H	4	4	2	2	2	2	2	2	2	1	2
108	M	65	H	4	4	2	2	2	2	2	2	2	1	2
109	M	61	H	4	4	2	2	2	2	2	2	2	1	2
110	M	62	H	4	4	2	2	2	2	2	2	2	1	2
111	M	60		4	4	2	2	2	2	2	2	2	1	2
112	M	64	H	4	4	2	2	2	2	2	2	2	1	2
113	M	65	H	4	4	2	2	2	2	2	2	2	1	2
114	M	65	H	4	4	2	2	2	2	2	2	2	1	2
115	M	60	H	4	4	2	2	2	2	2	2	2	1	2
116	M	62	H	4	4	2	2	2	2	2	2	2	1	2
117	M	65	H	4	4	2	2	2	2	2	2	2	1	2
118	F	48		4	4	2	2	2	2	2	2	2	1	2
119	M	60	H	4	4	2	2	2	2	2	2	2	1	2
120	M	65	H	4	4	2	2	2	2	2	2	2	1	2
121	M	64	H	4	4	2	2	2	2	2	2	2	1	2
122	M	68	H	4	4	2	2	2	2	2	2	2	1	2
123	M	64	H	4	4	2	2	2	2	2	2	2	1	2
124	M	68	H	4	4	2	2	2	2	2	2	2	1	2
125	M	60	H	4	4	2	2	2	2	2	2	2	1	2
126	M	68	H	4	4	2	2	2	2	2	2	2	1	2
127	M	61		4	4	2	2	2	2	2	2	2	1	2
128	M	66	H	4	4	2	2	2	2	2	2	2	1	2
129	M	58	H	4	4	2	2	2	2	2	2	2	1	2
130	M	60	H	4	4	2	2	2	2	2	2	2	1	2
131	M	52	T	4	4	2	2	2	2	2	2	2	1	2
132	M	50	T	4	4	2	2	2	2	2	2	2	1	2
133	M	50	T,H	4	4	2	2	2	2	2	2	2	1	2
134	M	65	H	4	4	2	2	2	2	2	2	2	1	2
135	M	57	H	4	4	2	2	2	2	2	2	2	1	2
136	M	65	H	4	4	2	2	2	2	2	2	2	1	2
137	M	50	T,H	4	4	2	2	2	2	2	2	2	1	2
138	M	55	H	4	4	2	2	2	2	2	2	2	1	2
139	M	48	T,H	4	4	2	2	2	2	2	2	2	1	2
140	M	59	H	4	4	2	2	2	2	2	2	2	1	2

MASTER CHART OF CASES 140-151 ON PQI QUESTIONS 1-11

Sl. No	Sex	Age	CM	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11
141	M	50	T,H	4	4	2	2	2	2	2	2	2	1	2
142	M	52	T	4	4	2	2	2	2	2	2	2	1	2
143	M	61		4	4	2	2	2	2	2	2	2	1	2
144	M	60	H	4	4	2	2	2	2	2	2	2	1	2
145	M	52	T	4	4	2	2	2	2	2	2	2	1	2
146	M	60	H	4	4	2	2	2	2	2	2	2	1	2
147	M	60	H	4	4	2	2	2	2	2	2	2	1	2
148	M	50	T	4	4	2	2	2	2	2	2	2	1	2
149	M	55	H	4	4	2	2	2	2	2	2	2	1	2
150	M	50		4	4	2	2	2	2	2	2	2	1	2
151	M	49	T,H	4	4	2	2	2	2	2	2	2	1	2

MASTER CHART OF CASES 1-15 ON PQI QUESTIONS 12-22

Sl. No	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	TPS	PQ
1	0	0	1	2	2	2	2	2	2	1	1	40	High
2	0	0	1	2	1	1	0	2	2	1	1	36	High
3	0	1	1	2	1	1	2	2	2	1	1	39	High
4	0	0	1	2	2	2	2	1	2	1	1	39	High
5	1	0	1	2	2	2	2	2	2	1	1	41	High
6	0	0	1	2	1	1	0	1	2	1	1	35	High
7	1	0	1	2	2	2	0	1	2	1	1	38	High
8	0	0	1	2	2	2	0	1	2	1	1	37	High
9	0	0	1	2	2	2	2	2	2	1	1	40	High
10	0	0	1	2	1	1	0	1	2	1	1	35	High
11	0	0	1	2	2	2	0	1	2	1	1	37	High
12	0	0	1	2	1	1	0	1	2	1	1	35	High
13	0	0	1	2	2	2	0	1	2	1	1	37	High

14	0	0	1	2	2	2	0	1	2	1	1	36	High
15	0	0	1	2	1	1	2	2	2	1	1	38	High

MASTER CHART OF CASES 16- 50 ON PQI QUESTIONS 12-22

Sl. No	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	TPS	PQ
16	0	0	1	2	1	1	2	2	2	1	1	38	High
17	0	0	1	2	2	2	0	1	2	1	1	37	High
18	0	0	1	2	1	1	0	1	2	1	1	35	High
19	0	0	1	2	2	2	0	1	2	1	1	37	High
20	0	0	1	2	2	2	0	1	2	1	1	37	High
21	0	0	1	2	2	2	0	1	2	1	1	37	High
22	0	0	1	2	2	2	0	1	2	1	1	37	High
23	0	0	1	2	2	2	0	1	2	1	1	37	High
24	0	0	1	2	1	1	2	2	2	1	2	39	High
25	0	0	1	2	1	1	2	2	2	1	1	38	High
26	0	0	1	2	2	2	0	1	2	1	1	37	High
27	0	0	1	2	2	2	0	1	2	1	1	37	High
28	0	0	1	2	2	2	0	1	2	1	1	37	High
29	0	0	1	2	1	1	0	1	2	1	1	35	High
30	0	0	1	2	1	1	0	1	2	1	1	35	High
31	0	0	1	2	1	1	2	2	2	1	1	38	High
32	0	0	1	2	2	2	0	1	2	1	1	37	High
33	0	0	1	2	2	2	0	1	2	1	1	37	High
34	1	0	1	2	2	2	0	1	2	1	1	38	High
35	0	0	1	2	1	1	0	1	2	1	1	35	High
36	0	0	1	2	2	2	0	1	2	1	1	37	High
37	0	0	1	2	2	2	0	1	2	1	1	37	High
38	1	0	1	2	2	2	0	1	2	1	1	38	High
39	0	0	1	2	1	1	2	2	2	1	1	38	High
40	0	0	1	2	1	1	2	2	2	1	1	38	High
41	0	0	1	2	2	2	0	1	2	1	1	37	High
42	0	0	1	2	1	1	0	1	2	1	1	35	High
43	1	0	1	2	1	1	2	2	2	1	1	39	High
44	0	0	1	2	2	2	0	1	2	1	1	37	High
45	0	0	1	2	1	1	0	2	2	1	1	36	High
46	0	0	1	2	2	2	0	1	2	1	1	37	High
47	0	0	1	2	1	1	2	2	2	1	1	38	High
48	0	0	1	2	2	2	0	1	2	1	1	37	High
49	0	0	1	2	2	2	0	1	2	1	1	37	High
50	0	0	1	2	1	1	0	1	2	1	2	36	High

MASTER CHART OF CASES 51- 85 ON PQI QUESTIONS 12-22

Sl. No	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	TPS	PQ
51	0	0	1	2	1	1	2	2	2	1	1	38	High
52	0	0	1	2	2	2	0	1	2	1	1	37	High
53	0	0	1	2	2	2	0	1	2	1	2	38	High
54	0	0	1	2	2	2	0	1	2	1	1	37	High
55	0	0	1	2	2	2	0	1	2	1	1	37	High
56	0	0	1	2	1	1	2	2	2	1	1	38	High
57	0	0	1	2	2	2	0	1	2	1	1	37	High
58	0	0	1	2	1	1	2	2	2	1	1	38	High
59	0	0	1	2	2	2	0	1	2	1	1	37	High
60	0	0	1	2	2	2	0	1	2	1	1	37	High
61	0	0	1	2	1	1	2	2	2	1	2	39	High
62	0	0	1	2	1	1	2	2	2	1	1	38	High
63	0	0	1	2	2	2	0	1	2	1	1	37	High
64	0	0	1	2	1	1	2	2	2	1	1	38	High
65	0	0	1	2	1	1	2	2	2	1	1	38	High
66	0	0	1	2	2	2	0	1	2	1	1	37	High
67	0	0	1	2	1	1	2	2	2	1	1	38	High
68	0	0	1	2	1	1	2	2	2	1	1	38	High
69	0	0	1	2	2	2	0	1	2	1	1	37	High
70	0	0	1	2	2	2	0	1	2	1	1	37	High
71	0	0	1	2	2	2	0	1	2	1	1	37	High
72	0	0	1	2	2	2	0	1	2	1	2	38	High
73	0	0	1	2	1	1	2	2	2	1	1	38	High
74	0	0	1	2	1	1	2	2	2	1	1	38	High
75	0	0	1	2	1	1	2	2	2	1	1	38	High
76	0	0	1	2	1	1	2	2	2	1	1	38	High
77	0	0	1	2	1	1	2	2	2	1	1	38	High
78	0	0	1	2	1	1	2	2	2	1	2	39	High
79	0	0	1	2	1	1	2	2	2	1	1	38	High
80	0	0	1	2	1	1	2	2	2	1	1	38	High
81	0	0	1	2	2	2	0	1	2	1	1	37	High
82	0	0	1	2	2	2	0	1	2	1	1	37	High
83	0	0	1	2	2	2	0	1	2	1	1	37	High
84	0	0	1	2	2	2	0	1	2	1	1	37	High
85	0	0	1	2	2	2	0	1	2	1	2	38	High

MASTER CHART OF CASES 86 - 120 ON PQI QUESTIONS 12-22

Sl. No	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	TPS	PQ
86	0	0	1	2	2	2	0	1	2	1	1	37	High
87	0	0	1	2	2	2	0	1	2	1	1	37	High
88	0	0	1	2	2	2	0	1	2	1	1	37	High
89	0	0	1	2	2	2	0	1	2	1	1	37	High
90	0	0	1	2	1	1	2	2	2	1	1	38	High
91	0	0	1	2	2	2	0	1	2	1	1	37	High
92	0	0	1	2	2	2	0	1	2	1	1	37	High
93	0	0	1	2	1	1	2	2	2	1	1	38	High
94	0	0	1	2	2	2	0	1	2	1	1	37	High
95	0	0	1	2	1	1	2	2	2	1	1	38	High
96	0	0	1	2	2	2	0	1	2	1	1	37	High
97	0	0	1	2	2	2	0	1	2	1	1	37	High
98	0	0	1	2	1	1	2	2	2	1	1	38	High
99	0	0	1	2	2	2	0	1	2	1	1	37	High
100	0	0	1	2	2	2	0	1	2	1	1	37	High
101	0	0	1	2	1	1	2	2	2	1	1	38	High
102	0	0	1	2	1	1	2	2	2	1	1	38	High
103	0	0	1	2	2	2	0	1	2	1	1	37	High
104	0	0	1	2	2	2	0	1	2	1	1	37	High
105	0	0	1	2	1	1	2	2	2	1	1	38	High
106	0	0	1	2	2	2	0	1	2	1	1	37	High
107	0	0	1	2	2	2	0	1	2	1	1	37	High
108	0	0	1	2	1	1	2	2	2	1	1	38	High
109	0	0	1	2	2	2	0	1	2	1	1	37	High
110	0	0	1	2	2	2	0	1	2	1	1	37	High
111	0	0	1	2	1	1	2	2	2	1	1	38	High
112	0	0	1	2	2	2	2	1	2	1	1	39	High
113	0	0	1	2	1	1	2	2	2	1	1	38	High
114	0	0	1	2	2	2	0	1	2	1	1	37	High
115	0	0	1	2	1	1	2	2	2	1	1	38	High
116	0	0	1	2	2	2	0	1	2	1	1	37	High
117	0	0	1	2	1	1	2	2	2	1	1	38	High
118	0	0	1	2	2	2	0	1	2	1	1	37	High
119	0	0	1	2	1	1	2	2	2	1	1	38	High

120	0	0	1	2	2	2	0	1	2	1	1	37	High

MASTER CHART OF CASES 121-151 ON PQI QUESTIONS 12-22

Sl. No	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	TPS	PQ
121	0	0	1	2	1	1	2	2	2	1	1	38	High
122	0	0	1	2	1	1	2	2	2	1	1	38	High
123	0	0	1	2	2	2	0	1	2	1	1	37	High
124	0	0	1	2	2	2	0	1	2	1	1	37	High
125	0	0	1	2	1	1	2	2	2	1	1	38	High
126	0	0	1	2	2	2	0	1	2	1	1	37	High
127	0	0	1	2	1	1	2	2	2	1	1	38	High
128	0	0	1	2	2	2	0	1	2	1	1	37	High
129	0	0	1	2	1	1	2	2	2	1	1	38	High
130	0	0	1	2	2	2	0	1	2	1	1	37	High
131	0	0	1	2	1	1	0	1	2	1	1	35	High
132	0	0	1	2	2	2	0	1	2	1	2	38	High
133	0	0	1	2	2	2	0	1	2	1	1	37	High
134	0	0	1	2	1	1	2	2	2	1	1	38	High
135	0	0	1	2	2	2	0	1	2	1	1	37	High
136	0	0	1	2	1	1	2	2	2	1	1	38	High
137	0	0	1	2	2	2	0	1	2	1	1	37	High
138	0	0	1	2	1	1	2	2	2	1	1	38	High
139	0	0	1	2	2	2	0	1	2	1	1	37	High
140	0	0	1	2	1	1	2	2	2	1	1	38	High
141	0	0	1	2	2	2	0	1	2	1	1	37	High
142	0	0	1	2	1	1	0	1	2	1	1	35	High
143	0	0	1	2	2	2	0	1	2	1	1	37	High
144	0	0	1	2	1	1	2	2	2	1	1	38	High
145	0	0	1	2	1	1	0	1	2	1	1	35	High
146	0	0	1	2	2	2	2	2	2	1	1	40	High
147	0	0	1	2	1	1	2	2	2	1	1	38	High
148	0	0	1	2	2	2	0	1	2	1	2	38	High
149	0	0	1	2	2	2	2	2	2	1	1	40	High
150	0	0	1	2	2	2	0	1	2	1	2	38	High
151	0	0	1	2	1	1	2	2	2	1	1	38	High

KEY NOTE TO MASTER CHART

ABBREVIATION	DETAILS
CM	Comorbidity
D	Diabetes mellitus
F	Female
H	Hypertension
M	Male
PQ	PQI Quality
Q	Question
Sl. No	Serial Number
TPS	Total PQI Score

Dr Geethu

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Document Details

Submission ID
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