



A Prospective Observational Study on Prescription Pattern, Treatment Outcomes, and Comparative Therapeutic Evaluation in Cardiac Patients

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Abstract

A Prospective observational study was conducted in the Department of Cardiology at a Vivekananda hospital in Narasaraopet including 100 patients for study duration of 3 months. The main objective of drug utilization research is to assess the rationality of drug use, associated drug interaction and co- morbidities in Myocardial Infarction. Current evidence-based guidelines for best practice recommend that patients should be treated to trial-directed doses for angiotensin-converting enzyme (ACE) inhibitors or angiotensin receptor antagonists (ARBs) and β blockers, as first-line therapy, and mineralocorticoid receptor antagonists (MRAs), as second-line therapy, in the management of patients with heart failure with reduced ejection fraction (HFrEF). Despite this, many patients with heart failure either do not receive these guideline-directed medical therapies or receive doses considerably below the guideline-recommended doses. A pan-European study reported that there was widespread under dosing of ACE inhibitors or ARBs and β blockers despite encouraged up titration. Under treatment with doses that are less than 50% of guideline-recommended dose for ACE inhibitors or ARBs and β blockers is associated with poorer prognosis. Angiotensin -converting enzyme (ACE) inhibitors or angiotensin II receptor blockers (ARBs), β blockers, and mineralocorticoid receptor antagonists (MRAs) are of proven benefit and are recommended by guidelines for management of patients with heart failure and reduced ejection fraction (HFrEF). We aimed to examine the first prospective multinational data from Asia on prescribing patterns of guideline-directed medical therapies and analyse its effect on outcomes. Coronary Artery Disease (CAD) tissue, occlusion, or spasm of coronary arteries. There is increasing importance of prescription pattern (PPMS) due to a lift in promoting growing concern regarding drug interactions, planned to assess the prescription pattern and cost of selected drugs used in Coronary patients. The drug prescription pattern was noted from cardiology department of multi-specialty tertiary care hospital and cost analysis was performed for the selected drugs. The data was collected by using structured data c total of 107 prescriptions were analysed from 240 patient records. Most of the patients diagnosed with coronary artery disease were in the age group of 61 statistically significant ($P < 0.01$). The most common classes of drugs prescribed were antihypertensives,

antiplatelets, antianginals and antihyperlipidemic. The study results showed that the inappropriate use of drugs in CAD increases the cost of treatment and in long term this may even contribute to drug related problems. Interventions are necessary to improve rational drug use of drugs.

Keywords

Cardiovascular disease, High Blood Pressures

INTRODUCTION:

Cardiovascular disease (CVD) is any disease involving the heart or blood vessels. CVDs constitute a class of diseases that includes coronary artery diseases (e.g., Angina, heart attack), stroke, heart failure, hypertensive heart disease, rheumatic heart disease, cardiomyopathy, abnormal heart rhythms, congenital heart disease, valvular heart disease, carditis, aortic aneurysms, peripheral artery disease, thromboembolic Disease, and venous thrombosis [1]. The underlying mechanisms vary depending on the Disease. It is estimated that dietary risk factors are associated with 53% of CVD deaths. Coronary artery disease, stroke, and peripheral artery disease involve atherosclerosis. They be caused by high blood pressure, smoking, diabetes mellitus, lack of Exercise, obesity, high blood cholesterol, poor diet, excessive alcohol consumption, and Poor sleep, among other things. High blood pressure is estimated to account for Approximately 13% of CVD deaths, while tobacco accounts for 9%, diabetes 6%, lack of exercise 6%, and obesity 5%. Rheumatic heart disease may follow untreated strep Throat [2]. It is estimated that up to 90% of CVD may be preventable. Prevention of CVD involves improving risk factors through healthy eating, exercise, avoidance of Tobacco smoke and limiting alcohol intake. Treating risk factors, such as high blood Pressure, blood lipids and diabetes is also beneficial. Treating people who have strep Throat with antibiotics can decrease the risk of rheumatic heart disease. The use of Aspirin in people who are otherwise healthy is of unclear benefit. Cardiovascular diseases are the leading cause of death worldwide except Africa. Together CVD resulted in 17.9 million deaths (32.1%) in 2015, up from 12.3 million (25.8%) in 1990. Deaths, at a given age, from CVD are more common and have been Increasing in much of the developing world, while rates have declined in most of the Developed world since the 1970s. coronary artery disease and stroke account for 80% Of CVD deaths in males and 75% of CVD deaths in females. Most cardiovascular Disease affects older adults. In the United States 11% of people between 20 and 40Have CVD, while 37%

between 40 and 60, 71% of people between60 and 80, and 85% Of people over 80 have CVD. The average age of death from coronary artery disease in the developed world is around 80, while it is around 68 in the developing world. CVD is typically diagnosed seven to ten years earlier in men than in women.

HYPERTENSION:

High blood pressure is a common condition that affects the body's arteries. It's also called hypertension. If you have high blood pressure, the force of the blood pushing against the artery walls is consistently too high. The heart must work harder to pump blood.

Blood pressure is measured in millimeters of mercury (mm Hg). In general, hypertension is a blood pressure reading of 130/80 mm Hg or higher.

The American College of Cardiology and the American Heart Association divide blood pressure into four general categories. Ideal blood pressure is categorized as normal.)

Normal blood pressure. Blood pressure is 120/80 mm Hg or lower.

Elevated blood pressure. The top number ranges from 120 to 129 mm Hg and the bottom number is below, not above, 80 mm Hg.

Stage 1 hypertension. The top number ranges from 130 to 139 mm Hg or the bottom number is between 80- and 89-mm Hg.

Stage 2 hypertension. The top number is 140 mm Hg or higher or the bottom number is 90 mm Hg or higher.

Blood pressure higher than 180/120 mm Hg is considered a hypertensive emergency or crisis. Seek emergency medical help for anyone with these blood pressure numbers.

Untreated, high blood pressure increases the risk of heart attack, stroke, and other serious health problems. It's important to have your blood pressure checked at least every two years starting at age 18. Some people need more frequent checks. Healthy lifestyle habits —such as not smoking, exercising, and eating well — can help prevent and treat high blood pressure. Some people need medicine to treat

high blood pressure. Hypertension is blood pressure that is consistently higher than 140 over 90 millimeters Trusted Source The systolic reading of 130 mm Hg refers to the pressure as the heart pumps blood around the body. The diastolic reading of 80 mm Hg refers to the pressure as the heart relaxes and refills with blood.

Symptoms

A person with hypertension may not notice any symptoms. Without detection, hypertension can damage the heart, blood vessels, and other organs, such as the kidneys.

It is vital to check blood pressure regularly.

In rare and severe cases, high blood pressure can cause:

Sweating

Anxiety

Sleeping problems

High blood pressure can affect your health in four main ways:

Hardening of the arteries. Pressure inside your arteries can cause the muscles that line the walls of the arteries to thicken, thus narrowing the passage.

A heart attack or stroke can occur if a blood clot blocks blood flow to your heart or brain.

Enlarged heart. High blood pressure increases the amount of work for your heart. Like any heavily exercised muscle in your body, your heart grows bigger (enlarges) to handle the extra workload. The bigger your heart is, the more it demands oxygen-rich blood but the less able it is to maintain proper blood flow. As a result, you feel weak and tired and are not able to exercise or perform physical activities. Without treatment, your heart failure will only get worse.

Kidney damage. Prolonged high blood pressure can damage your kidneys if their blood supply is affected.

Eye damage. If you have diabetes, high blood pressure can cause the tiny capillaries in the retina of your eye to bleed. This condition, called retinopathy, can lead to blindness.

What causes high blood pressure?

About 90% to 95% of all high blood pressure cases are what is called primary, or essential hypertension. That means the real cause of the high blood pressure is not known, but a number of factors contribute. You are at increased risk if you –

Have a family history of high blood pressure.

Are African American. African Americans develop high blood pressure more often than whites, and it tends to happen earlier in life and be more severe.

Are a man, but women are at an increased risk after age 55.

Are older than 60. Blood vessels become more brittle with age and are not as flexible.

Face high levels of stress. In some studies, stress, anger, hostility, and other

ANGINA PECTORIS: -

Angina is a type of chest pain caused by reduced blood flow to the heart. Angina is a symptom of coronary artery disease. Angina is also called angina pectoris. Angina pain is often Angina pectoris is the medical term for chest pain or discomfort due to coronary heart disease. It occurs when the heart muscle doesn't get as much blood as it needs. This usually happens because one or more of the heart's arteries is narrowed or blocked, also called ischemia. Angina usually causes uncomfortable pressure, fullness, squeezing or pain in the center of the chest. You may also feel discomfort in your neck, jaw, shoulder, back or arm. (Many types of chest discomfort-such as heartburn, lung infection or inflammation-aren't related to angina.) Angina in women can be different than in men.

Described as squeezing, pressure, heaviness, tightness, or pain in the chest.

Key points about angina pectoris

Angina is chest pain or discomfort that keeps coming back. It happens when some part of your heart does not get enough blood and oxygen.

Angina is a symptom of coronary artery disease. This occurs when arteries that carry blood to your heart become narrowed and blocked because of atherosclerosis or a blood clot.

Angina can feel like a pressing, squeezing, or crushing pain in the chest under your breastbone or upper back, both arms, neck, or ear lobes. You may also have shortness of breath, weakness, or fatigue.

Nitroglycerin is the most common medicine prescribed for angina.

Managing angina includes managing high blood pressure, stopping cigarette smoking, reducing high blood cholesterol levels, eating less saturated fat, exercising, and losing weight.

Symptoms

The pain/discomfort:

Occurs when the heart must work harder, usually during physical exertion.

Doesn't come as a surprise, and episodes of pain tend to be alike.

Usually lasts a short time (5 minutes or less).

Is relieved by rest or medicine.

May feel like gas or indigestion.

May feel like chest pain that spreads to the arms, back or other areas.

What is angina pectoris: -

Angina pectoris—or simply angina—is chest pain or discomfort that keeps coming back. It happens when some part of your heart doesn't get enough blood and oxygen. Angina can be a symptom of coronary artery disease (CAD). This occurs when arteries that carry blood to your heart become narrowed and blocked because of atherosclerosis or a blood clot. It can also occur because of unstable plaques, poor blood flow through a narrowed heart valve, a decreased pumping function of the heart muscle, as well as a coronary artery spasm.

Treatment

People with stable angina have episodes of chest pain. The discomfort is usually predictable and manageable. You might experience it while running or if you're dealing with stress.

Normally, this type of chest discomfort is relieved with rest, nitroglycerin or both. Nitroglycerin relaxes the coronary arteries and other blood vessels, reducing the amount of blood that returns to the heart and easing the heart's workload. Relaxing the coronary arteries increases the heart's blood supply. Other medications may be prescribed to prevent angina from occurring, such as beta-blockers and calcium channel blockers. They lower blood pressure and heart rate and reduce the workload on the heart. Angiotensin-converting enzyme (ACE) inhibitors and angiotensin II receptor blockers may be prescribed to help reduce blood pressure and reduce the risk of heart attack due to coronary artery disease.

Additional medications may include statins and antiplatelet drugs. Statins reduce LDL (bad) cholesterol and antiplatelet drugs help prevent blood clots from forming, both of which help reduce the risk of heart attack and stroke.

If you experience chest discomfort, be sure to contact your health care team immediately to set up a complete evaluation and, possibly, tests. If you have stable angina and start getting chest pain more easily and more often, see your health care professional immediately. You may be experiencing early signs of unstable angina.

MYOCARDIAL INFARCTION: -

A myocardial infarction (commonly called a heart attack) is an extremely dangerous condition that happens because of a lack of blood flow to your heart muscle. The lack of blood flow can occur because of many different factors but is usually related to a blockage in one or more of your heart's arteries.

Myocardial infarction (MI), colloquially known as "heart attack," is caused by decreased or complete cessation of blood flow to a portion of the myocardium. Myocardial infarction may be "silent," and go undetected, or it could be a catastrophic

event leading to hemodynamic deterioration and sudden death. Most myocardial infarctions are due to underlying coronary artery disease, the leading cause of death in the United States. With coronary artery occlusion, the myocardium is deprived of oxygen. Prolonged deprivation of oxygen supply to the myocardium can lead to myocardial cell death and necrosis. Patients can present with chest discomfort or pressure that can radiate to the neck, jaw, shoulder, or arm. In addition to the history and physical exam, myocardial ischemia may be associated with ECG changes and elevated biochemical markers such as cardiac troponins. This activity describes the pathophysiology, evaluation, and management of myocardial infarction and highlights the role of the interprofessional team in improving care for affected patients.

Objectives:

Review the basic pathophysiology of myocardial infarction.

Explain the management protocol when presented with acute myocardial infarction, including all necessary laboratory and other diagnostic testing.

Summarize the long-term management and rehabilitation for a patient post-MI.

Explain interprofessional team strategies for improving care coordination and communication to advance the prevention and management of myocardial infarction.

INTRADUCTION

Myocardial infarction (MI), colloquially known as "heart attack," is caused by decreased or complete cessation of blood flow to a portion of the myocardium. Myocardial infarction may be "silent" and go undetected, or it could be a catastrophic event leading to hemodynamic deterioration and sudden death. Most myocardial infarctions are due to underlying coronary artery disease, the leading cause of death in the United States. With coronary artery occlusion, the myocardium is deprived of oxygen. Prolonged deprivation of oxygen supply to the myocardium can lead to myocardial cell death and necrosis. Patients can present with chest discomfort or pressure that can radiate to the neck, jaw, shoulder, or arm. In addition to the history and physical exam, myocardial ischemia may be associated with ECG changes and elevated biochemical markers such as cardiac troponins.

Etiology

As stated above, myocardial infarction is closely associated with coronary artery disease. INTERHEART is an international multi-center case-control study which delineated the following

modifiable risk factors for coronary artery disease:
Smoking.

1) Abnormal lipid profile/blood Apo lipoprotein (raised ApoB/ApoA1)

2) Hypertension

3) Diabetes mellitus

Abdominal obesity (waist/hip ratio) (greater than 0.90 for males and greater than 0.85 for females)

Psychosocial factors such as depression, loss of the locus of control, global stress, financial stress, and life events including marital separation, job loss, and family conflicts.

Lack of daily consumption of fruits or vegetables

Lack of physical activity

Alcohol consumption (weaker association, protective)

The INTERHEART study showed that all the above risk factors were significantly associated with acute myocardial infarction except for alcohol consumption, which showed a weaker association. Smoking and abnormal apolipoprotein ratio showed the strongest association with acute myocardial infarction. The increased risk associated with diabetes and hypertension were found to be higher in women, and the protective effect of exercise and alcohol was also found to be higher in women.

Practice Essentials

Myocardial infarction (MI) (ie, heart attack) is the irreversible necrosis of heart muscle secondary to prolonged ischemia. Approximately 1.5 million cases of MI occur annually in the United States. See the images below.

Acute myocardial infarction, reperfusion type. In this case, the infarct is diffusely hemorrhagic. There is a rupture track through the center of this posterior left ventricular transmural infarct. The mechanism of death was hemopericardium.

Cardiovascular disease:[16]

Cardiovascular disease is a group of diseases affecting the heart and blood vessels. These Diseases can affect one or many parts of your heart and blood vessels. A person may be symptomatic (physically experiencing the disease) or asymptomatic (not feeling anything at all)

. Cardiovascular disease includes heart or blood vessel issues, including:

Narrowing of the blood vessels in heart, other organs or throughout your body.

Heart and blood vessel problems present at birth.

Irregular heart rhythms.

Etiology: The causes of cardiovascular disease can vary depending on the specific type. For example, atherosclerosis causes coronary artery disease and peripheral artery disease. Coronary artery disease,

scarring of your heart muscle, genetic problems or Medications can cause arrhythmias. Aging, infections, and rheumatic disease can cause Valve diseases.

Risk factors of cardiovascular disease:

The risk factors of cardiovascular diseases such as

1. High blood pressure
2. high cholesterol
3. type 2 diabetes
4. Family history of heart disease
5. Lack of physical activity
6. Having excess weight or obesity
7. Diet has sodium, sugar and fat.
8. Overuse of alcohol
9. Misuse of prescription or recreational drugs
10. Preeclampsia or toxemia
11. Gestational diabetes
12. Chronic inflammatory or autoimmune conditions
13. Chronic kidney disease

Symptoms of cardiovascular disease:

Cardiovascular disease symptoms can vary depending on the cause. Older adults and People assigned female at birth may have more subtle symptoms. However, they can still have serious cardiovascular disease.

Symptoms of heart issues:

1. Chest pain(angina).
2. Chest pressure
3. heaviness or discomfort
4. Shortness of breath.
5. Dizziness or fainting
6. Fatigue or exhaustion.

Medication:

Blood pressure medication reduces cardiovascular disease in people at risk, irrespective of age, the baseline level of cardiovascular risk, or baseline blood pressure. The commonly used drug regimens have similar efficacy in reducing the risk of all major cardiovascular events, although there may be differences between drugs in their ability to prevent specific outcomes. Larger reductions in blood pressure produce larger reductions in risk, and most people with high blood pressure require more than one drug to achieve adequate reduction in blood pressure. Adherence to medications is often poor, and while mobile phone text messaging has been tried to improve adherence, there is insufficient evidence that it alters secondary prevention of cardiovascular disease. Statins are effective in preventing further cardiovascular disease in people with a history of cardiovascular disease. As the event

rate is higher in men than in Women, the decrease in events is more easily seen in men than women. In Those at risk, but without a history of cardiovascular disease (primary Prevention), statins decrease the risk of death and combined fatal and non-fatal cardiovascular disease. The benefit, however, is small. A United States Guideline recommends statins in those who have a 12% or greater risk of cardiovascular disease over the next ten years. Niacin, fibrates and CETP Inhibitors, while they may increase HDL cholesterol do not affect the risk of cardiovascular disease in those who are already on statins. Fibrates lower the Risk of cardiovascular and coronary events, but there is no evidence to suggest That theoretical-cause mortality. Anti-diabetic medication may reduce cardiovascular risk in people with Type2 diabetes, although evidence is not conclusive. A meta-analysis in 2009 Including 27,049 participants and 2,370 major vascular events showed a 15% Relative risk reduction in cardiovascular disease with more-intensive glucose Lowering over an average follow-up period of 4.4 years, but an increased risk of major hypoglycemia.

AIM AND OBJECTIVES

Aim

A Prospective observational study on comparative therapeutic evaluation, treatment Outcomes and prescription pattern in cardiac patients.

Objective:

- 1) To observe the comparative therapeutic evaluation and treatment Outcomes in cardiac related patients.
- 2) To assess the case analysis, drug treatment analysis, cardiac parameters vital Parameters [Heart Rate, ECG] in cardiac patients.

PLAN OF Work

The plan of proposed work includes the following steps:

Phase 1:

- 1) the IEC approval for study.
- 2) Detailed literature review.
- 3) Procure the statistical tools.

Phase 2:

- 4) Selection of sample size and patient population.
- 5) Collection of data.

Phae3:

- 6) Data analysis.
- 7) Preparing the outcomes of the study

NEED OF THE STUDY

- 1) Thiamin need of the study is to identify the therapeutic evaluation On cardiovascular

problems, health care and good therapeutic Strategy development.

- 2) The present need of our study was finding out the best possible Therapeutic Strategy which enhances therapeutic efficacy.
- 3) As part of the assessment of the problem collect the reports of cardiac parameters.

MATERIALS AND METHODS

Study Participants: -A total of 100 patients with cardiac diseases from two different hospitals in Narasaraopet, India was identified for the study. Patients' diagnosis and medication Charts were collected from the hospitals with patient consent. Description of study population and study sites of government area hospital in Narasaraopet collected 40 cases in general medicine ward and we collected 60 Cases in Vivekananda super specialty hospital in cardiac ward. Males 68 and 42 Females patients cases collected from December 2022 to march 2023. The studies Involving human participants were reviewed and approved by the Institutional ethics Committee (IEC) of NIPS, NRT.

Inclusion and exclusion criteria

Inclusion criteria: -

- i. undergoing cardiac evaluation are included.
- ii. People of 20 – 90 years of age were included in the study.
- iii. Cardiac like ECG, Echo cardio graph and other vital parameters included.
- iv. Both in-patients and out-patients are included.

Exclusion criteria; -

- 1) People with history of cardiac surgeries were excluded.
- 2) Patients who were not willing to participate were excluded.

METHODOLOGY

Study Design: A Prospective Observational Study

Study Site: Government area hospital, Vivekananda super specialty hospital

Study Period: A Period of 3 months

Sample Size: 100

Study Groups

- Disease like hypertension, hypotension, angina pectoris, shortness of breath & Palpitation and their co-morbid conditions.
- Patients distributed on case wise with their disease and co-morbid condition.
- Patients physiological data like heartrate and ECG values (RR interval, PR interval, QRS complex, QT interval, QTC interval).
- Prescription and drug utilization patterns were recorded from patients profile forms and Medication charts in cardiac patients.

- Treatment outcomes were measured for before treatment & after treatment two hours of Drug.
- Comparative therapeutic evaluation measured and represented as change in percentage compared to before and after two hours of treatment.

RESULTS AND TABLES

Table 1: Data showing groups of patients' population & no. of cases in various types of cardiac disease and no of patients.

S. NO	TYPES OF PATIENT CONDITION	NO. OF PATIENTS
1	Normal	06
2	Hypertension	13
3	Hypertension + Angina pectoris	04
4	Hypertension + Asthma	07
5	Hypertension + Asthma + Shortness of breath (SOB)	04
6	Hypertension + Angina pectoris + Shortness of breath (SOB)	07
7	Hypotension	02
8	Hypotension + asthma	03
9	Hypotension + Shortness of breath (SOB)	02
10	Hypotension + Angina pectoris	04
11	Angina pectoris	03
12	Palpitation	05
13	Angina pectoris + palpitation	03
14	Shortness of breath (SOB)	06
15	Shortness of breath (SOB) + angina pectoris	04
16	Shortness of breath (SOB) + Palpitation	03
17	Asthma	04
18	Asthma + Palpitation	06
19	Hypertension + Shortness of breath (SOB)	02

Table 2: Case wise distribution of study population of Cardiac Patients for Hypertension & Hypertension patients with co-morbid conditions.

Disease Description	No. of patients
Hypertension	13
Hypertension + Asthma + Shortness of breath	04
Hypertension + Angina pectoris	04
Hypertension + Angina pectoris + Shortness of breath (SOB)	07
Hypertension + Asthma	07
Hypertension + Shortness of breath (SOB)	02
Total no of Hypertensive & Hypertensive patient with other co-morbid conditions	37

Table 3: Case wise distribution of study population of cardiac patients for hypotension patients with co-morbid conditions

Disease description	No. of Patients
Hypotension	02
Hypotension + Asthma	03
Hypotension + Shortness of breath (SOB)	02
Hypotension + Angina pectoris	04
Total no of hypotensive patients with other co-morbid conditions	11

Table 4: Case wise distribution of study population of cardiac patients for angina pectoris patients with co-morbid condition

Disease description	No. of patients
Angina pectoris	07
Angina pectoris + Hypotension	04
Angina pectoris + Shortness of breath (SOB)	04
Angina pectoris + Palpitation	03
Angina pectoris + Hypertension	04
Angina pectoris + Hypertension + Shortness of breath (SOB)	07
Total no of angina patients with other co- morbid conditions	29

Table 5: Case wise distribution of study population in cardiac patients for palpitation patients with palpitation co-morbid conditions

Disease description	No. of cases
Palpitation	05
Palpitation + Shortness of breath (SOB)	03
Palpitation +Asthma	06
Palpitation + Angina pectoris	03
Total no of palpitation patients with other co-morbid conditions	17

Table 6: Data showing total no. of patients and their mean ECG values (before treatment)

S. No.	Patient condition	Mean Heart rate	ECG intervals and values in ms				
			RR interval	PR Interval	QRS complex	QT interval	QTC interval
1	Normal	70 bpm	824 ms	139 ms	78 ms	396 ms	424 ms
2	Hypertension	90 bpm	698 ms	144 ms	82 ms	372 ms	425 ms
3	Hypertension + Asthma + Shortness of breath (SOB)	84 bpm	663 ms	148 ms	82 ms	364 ms	406 ms
4	Hypertension + Angina pectoris	103 bpm	587 ms	127 ms	82 ms	359 ms	441 ms
5	Hypertension + Angina pectoris + Shortness of breath (SOB)	96 bpm	628 ms	145 ms	93 ms	383 ms	445 ms
6	Hypertension + Asthma	97 bpm	679 ms	150 ms	95 ms	402 ms	466 ms
7	Hypertension + Shortness of breath (SOB)	104 bpm	752 ms	157 ms	89 ms	386 ms	408 ms
8	Hypotension	58 bpm	950 ms	108 ms	92 ms	407 ms	396 ms
9	Hypotension + Asthma	64 bpm	715 ms	152 ms	91 ms	403 ms	439 ms
10	Hypotension + Shortness of breath (SOB)	73 bpm	629 ms	129 ms	74 ms	356 ms	363 ms

Table 6: Continuation

S. No.	Patient condition	Mean Heart rate	RR interval	PR interval	QRS complex	QT interval	QTC interval
11	Hypotension +Angina pectoris	64 bpm	699 ms	160 ms	91 ms	400 ms	431 ms
12	Asthma	71 bpm	854 ms	162 ms	91 ms	404 ms	426 ms
13	Angina Pectoris	78 bpm	625 ms	133 ms	85 ms	367 ms	422 ms
14	Shortness of breath (SOB)	71 bpm	680 ms	132 ms	77 ms	368 ms	444 ms

	+Angina Pectoris						
15	Palpitation	73 bpm	822 ms	146 ms	86 ms	392 ms	406 ms
16	Shortness of breath (SOB)	74 bpm	695 ms	140 ms	86 ms	391 ms	443 ms
17	Shortness of breath (SOB)+ Palpitation	103 bpm	710 ms	152 ms	76 ms	378 ms	442 ms
18	Asthma + Palpitation	74 bpm	770 ms	140 ms	77 ms	393 ms	437 ms
19	Angina pectoris + Palpitation	80 bpm	787 ms	138 ms	115 ms	424 ms	474 ms

Table 7: Results Of Prescription and Drug Utilization Pattern in Cardiovascular Patients.

S. No.	Name of the drug	No of cases prescribed
1	Tablet cardivas 3.125 mg (Carvedilol)	19
2	Inj. Heparin 5000units IV	17
3	Tablet. Zofer 4mg (Ondansetron)	22
4	Tablet clopilet A75/150 (Clopidogrel and Aspirin)	20
5	Inj. Lasix 20mg IV (Furosemide)	02
6	Inj. Monocef-SB 1g (Ceftriaxone & Sulbactam)	01
7	Tab. Pantoprazole – 40mg	25
8	Tab. Ascorbic Acid (Vit. C)	03

Table 8: Treatment outcomes of CARDIVAS (carvedilol 3.125mg) and results of comparative therapeutic evaluation on before and after 2hours of treatment for hypertensive patients on heartrate and ECG intervals.

S. No.	Cardivas Treatment	HR	RR interval	PR interval	QRS complex	QT interval	QTC interval
1	Before Treatment	90 bpm	698ms	144ms	82ms	372ms	425ms
2	After two hours of Treatment	85bpm	690ms	138ms	78ms	368ms	415ms
3	Comparative therapeutic Evaluation	↓5.55%	↓1.14%	↓4.16%	↓5%	↓1.07%	↓2.35%

In the treatment outcomes of Cardivas (Carvedilol 3.125mg) and the results of comparative therapeutic evaluation on before treatment heart rate 90bpm and after treatment heart rate 85bpm then after comparative therapeutic evaluation after treatment heart rate is ↓ 5.55% and RR interval is ↓ 1.14% PR interval is ↓ 4.16% QRS complex is ↓ 5% QT interval is ↓ 1.07% and QTC interval is ↓ 2.35%.

DISCUSSION:

In this study reveals that we collected two hospitals case wise distribution of cardiac patients in Narasaraopet. The two hospitals are a government area hospital and Vivekananda super specialty hospital of various cardiac patients. We observed the various conditions of hypertension with co-morbid conditions and hypotension & hypotension with co-morbid conditions and aginapectoris & anginapectoris with co-morbid conditions. We observed and collected the patient case sheets then found out the ECG values and evaluated the meaning of the ECG values.

Comparative treatment of various cardiac drugs:

Tab Cardivas (3.125mg): Cardivas is a tablet containing carvedilol which belongs to the group

called beta blockers. It is a anti-hypertensive drug which is used to treat high blood pressure. We observe how the drug works on the patient before treatment and after treatment.

Tab Clopilet (A75/150mg): Clopilet is tablet containing clopidogrel which belongs to anti-platelet drug. It is used to prevent blood clots due to atherothrombosis which leads to atherothrombotic events such as stroke or heart attack. we observe how the drug works on the patient before treatment and after treatment.

After that in this study population of cardiac patient case wise distribution of various cardiac patients like hypertension and hypertension co-morbid conditions and hypotension and hypotension co-morbid conditions, anginapectoris, palpitation and

asthma etc. In these patient conditions, the medicines like cardivas, clopilet, zofer, heparin, monocef and ascorbic are used. In cardiac patient we collected ECG values and evaluated the mean of the heart rate and ECG values mean and find out the therapeutic changes.

SUMMARY AND CONCLUSION

This study reveals the case wise distribution of study population & study sites of various hospitals and hospital wise patients. The cases are collected from the government area hospital Narasaraopet in general medicine ward and Vivekananda super specialty hospital in cardiac ward.

We have collected various cardiac patients of hypertension & hypertension patients co-morbid conditions, hypotension & hypotension patients with co-morbid conditions, angina pectoris & angina pectoris patients with co-morbid conditions and palpitation & palpitation patients with co-morbid conditions are considered in this study.

We have observed ECG values, ECG pattern and ECG intervals in various cardiac patients like hypertension, hypotension, palpitation and angina pectoris and their co-morbid conditions are considered.

We have collected and evaluated ECG values and then we find out their mean values. Likewise, we observed heart rate and find out their mean values. Then we find out the therapeutic changes in patients before treatment and after treatment of various drugs in cardiac patients.

This is about the summary and the conclusion about a prospective observational study on comparative therapeutic evaluation, treatment outcomes and prescription pattern in cardiac patients.

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