



## CLINICAL STUDY ON THE THERAPEUTIC MANAGEMENT OF ANGINA PECTORIS AND TO STUDY THE IMPACT OF PATIENT COUNSELING

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### ABSTRACT

The study is aimed to assess the patient knowledge with the help of knowledge assessment questionnaire (KAQ) about the disease and to evaluate the importance of education as an instrument of therapy in controlling the disease. The patients were evaluated about the knowledge of disease among them and adherence to the drug therapy. An intervention based, randomized study is designed to evaluate the effect of patient counseling. A patient information leaflet (PIL) was prepared this was first designed in English and was then translated into the local language (Telugu) the demographic details (age distribution, sex, literacy residence, food habits co morbidities, adverse drug reactions of the therapy etc.) were calculated. Most of the patients were in the age group of 50-60 years (36%). In our study about 53% of patients were overweight 23% and 24% were normal weight and obese respectively. It was found that 75% were non vegetarian 28% were having smoke and 8% were having alcohol habits. The major co-morbidities that are present in the study population were hypertension and diabetes. In the present study we found that about 28% of study population was having abnormal blood cholesterol levels. In the present study knowledge was assessed in patients with angina pectoris regarding disease, factors that influence CAD, life style modification and complication of Angina. It was found that most of the patients were unaware about the basic concepts. In our study we found that patients in the intervention group, who received counseling by the pharmacist showed significant improvement in the knowledge compared with the before intervention.

**Key words:** Angina pectoris, Myocardial ischemia, Patient knowledge assessment and Patient counseling.

### INTRODUCTION

Angina pectoris, commonly known as angina, severe paroxysmal Episodic constricting chest pain, often radiating to the left shoulder and down the left arm, caused by an insufficient supply of blood to the heart (Arthur Schoenstadt M *et al.*, 2001). Angina pectoris is the result of myocardial ischemia caused by an imbalance between myocardial blood supply and oxygen demand.

This is generally due to obstruction atherosclerosis or spasm of the coronary arteries (Baladier V *et al.*, 1996). The WHO estimated in 2002, that 12.6 percent of worldwide deaths were from ischemic heart disease Coronary heart disease is responsible for 1 in 5 deaths in the United States in India were 32% of all deaths in 2007 and are expected to rise from 1.17 million in 1990 and 1.59 million in 2000 to 2.03 million in 2010 Although deaths due to CVD expected to double during 1985-2015. Mortality estimation due to CVD in Andhra Pradesh is 31%. Patient counseling is the responsibility of the pharmacist to counsel the patient, before dispensing the medication. During the consultation the pharmacist

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should provide him with sufficient information (e.g. how to take it, how long to take it, at what times, proper storage, frequently encountered side effects). In addition to verbal information, audio visual and illustrative materials are beneficial.

Coronary artery disease is a major cause of mortality and morbidity in India. A number of risk factors associated with an increased incidence of CAD can be identified. The presence of one risk factor greatly increases the chance of developing heart diseases and the presence of two or more increases the risk disproportionately. The patient may lack an understanding of the illness, therapy and medication effects. Once the compliance problem and its causes are understood, the pharmacist is prepared better to tailor an information giving section that addresses the patient's specific needs. An attempt was made to identify the patient with risk factors and educate them by giving advice in overall health conscious ness and encouraging compliance with prescribed regimen, stressing on the importance of proper lifestyle, including diet, exercise, smoking cessation. This movement is transferring the traditionally the passive patient into an active, informed and effective participant. To provide information that the patient is able to understand and use an approach that will be reassuring to the patient and will not unnecessarily cause alarm, as may occur when an overzealous discussion of adverse effects makes the patient afraid to use the drug (Bhatt AB *et al.*, 2006; B. Pope *et al.*, 2005).

## METHODOLOGY

### Study Site

This study was conducted in the out-patient department of Medicine of Rajesh cardiac center in Vijay Wada and Rave cardiac and diabetic center in Penury in Andhra Pradesh.

### Study Design

This study is an observational, descriptive study consisting of 100 patients with coronary artery disease, and they were evaluated about the knowledge of disease among them and adherence to the drug therapy. An intervention based, randomized study is designed to evaluate the effect of patient counseling.

### Study Period

The study was conducted from December 2010 to July 2011.

### Inclusion criteria

- Patients who were diagnosed as having coronary artery disease of either sex.
- Those patients with or without co-morbidities and are in general medicine ward.

- Patients who were willing to give their information consent to participate in the study.

### Exclusion criteria

- Pregnant coronary artery disease patients.
- Patients who were in intensive care units or critical care units.
- Patients who were not willing to participate in the study

### Source of data

Patient's data relevant to the study was obtained from the following sources.

- Patient data collection form
- Treatment chart / case sheet
- Direct patient interview
- Knowledge assessment questionnaire (KAQ)

### Patient data collection form includes

- Patients demographic details
  - Co-morbid conditions
  - Post medical and medication history
  - Family history
  - Life style
  - Laboratory data
  - Present medication etc,
- Body weight and height of all patients were measured. Body mass index (BMI) was compared as the weight in kilograms divided by the square of the height in meter.

### Study Procedure

The patient who had been diagnosed as Angina pectoris was included in the study. Patients with Angina pectoris, those who were satisfying the study criteria were included in the study to assess patient knowledge about CAD and adherence to the drug therapy.

### Measuring Patients knowledge

Patient's knowledge about CAD and its management was assessed using knowledge assessment questionnaire (KAQ). This questionnaire was first prepared in English and then translated into local language i.e. Telugu.

This questionnaire assessed the patient basic knowledge about CAD, its risk factors, complications, life style modification and drug related information.

### Intervention Study

All the Angina pectoris patients who were meeting the inclusive criteria were included in the study after getting consent from the patient. The patients were randomized as control and study group. The base line knowledge was measured using KAQ in both groups. The study group was provided with the written and verbal

information about disease and its management by the clinical pharmacist. After taking the base line knowledge on an average 20-45 min were spent with each patient depending on the educational level and understanding capability of the patients. To the control group no information was provided by the clinical pharmacist. On the day of discharge the same KAQ was administered again and patient's knowledge was assessed about CAD in both groups. The base line and final knowledge was compared in both control and study group.

**Preparation of patient information leaflet**

A patient information leaflet (PIL) was prepared this was first designed in English and was then translated into the local language (Telugu) The leaflet contained information about CAD, causes of CAD, symptoms, complications of CAD, and dietary and life style modifications that has to follow. This PIL was provided to patients in the study groups during interview and to control group at the time of discharge from the hospital.

**RESULTS**

**Age Distribution with Sex**

A total of 100 patients were enrolled in the present study during the study period. Out of that 63(63%) were males and 37(37%) were females. Most of patients, about 36% were from 50-60 years age group. It

shows that the incidence of Angina pectoris is more in males compared to females.

**Literacy of the study population**

It was found that the education background of patients was fine, most of them were literate 81%, and only 19% of patients are illiterates.

**Residence of the Study Population**

In the present study about 41% were from rural area and 59% were from urban area.

**Food Habits of the Study Population**

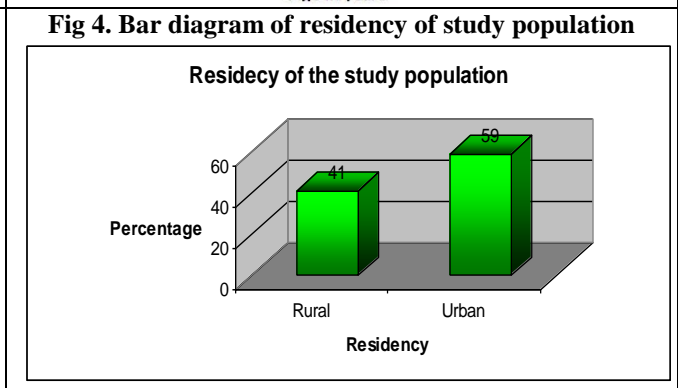
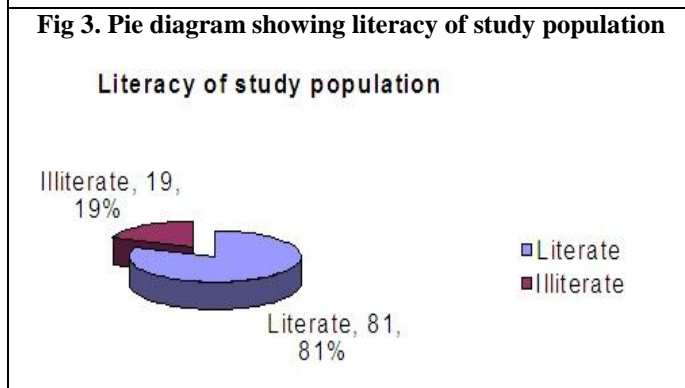
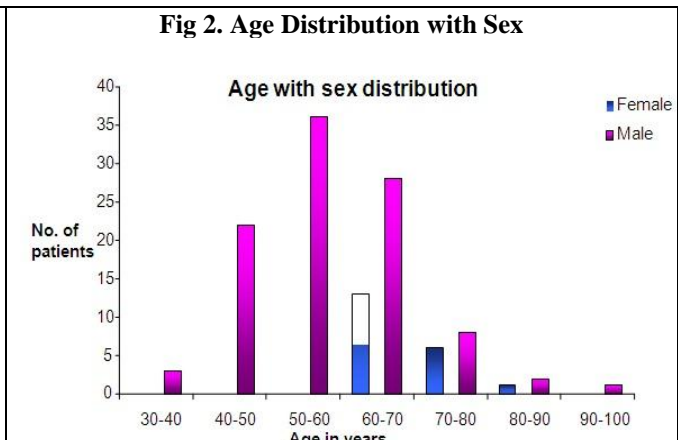
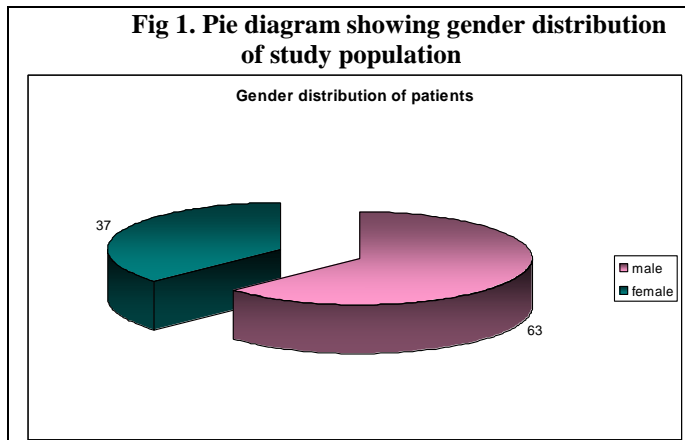
In this about 75% were non-vegetarian and 25% were vegetarians. 8% are Alcohol, 28% are tobacco addicts.

**Co Morbid Conditions**

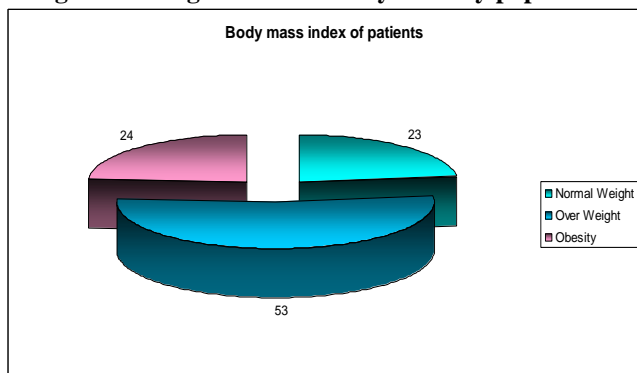
The results revealed that 59%ere hypertensive, 45%ere diabetic and 31% patients having both hypertension and diabetes

**Blood Cholesterol Level**

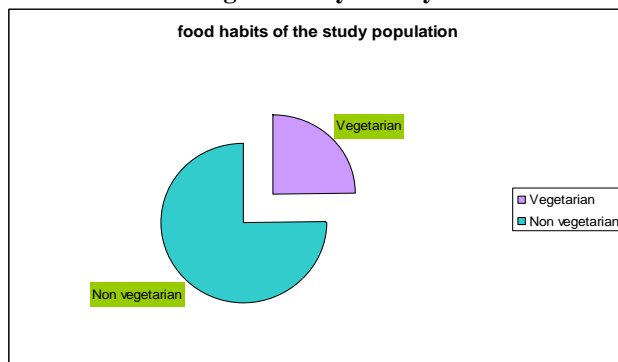
The values show that 72 were having normal blood cholesterol levels and 28 were having abnormal blood cholesterol levels.



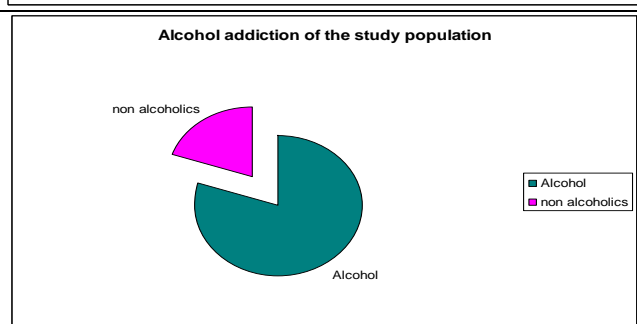
**Fig 5. Bar diagram of residency of study population**



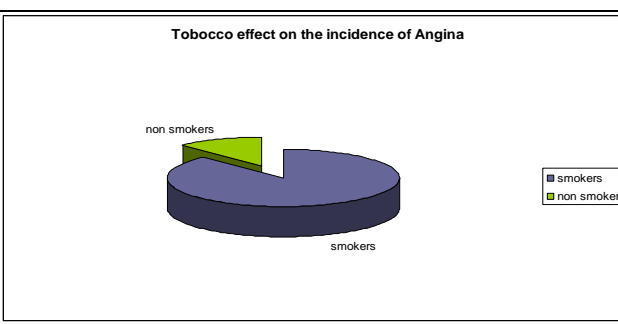
**Fig 6. Family history**



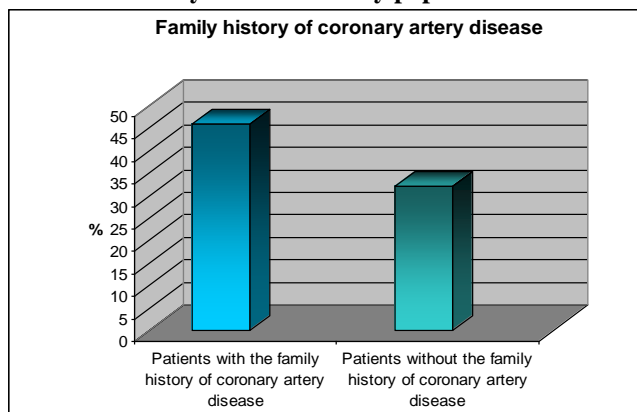
**Alcohol addiction of the study population**



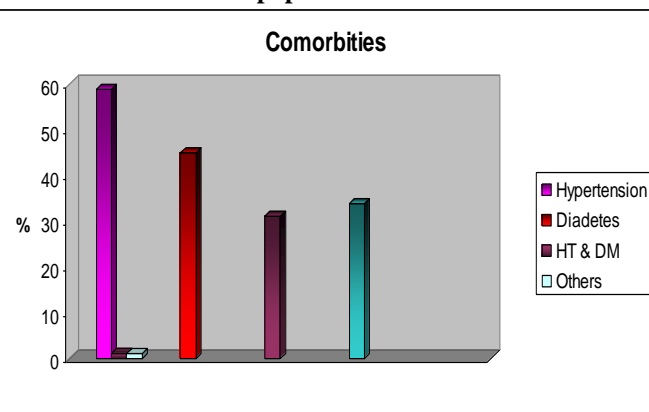
**Tobacco effect on the incidence of Angina**



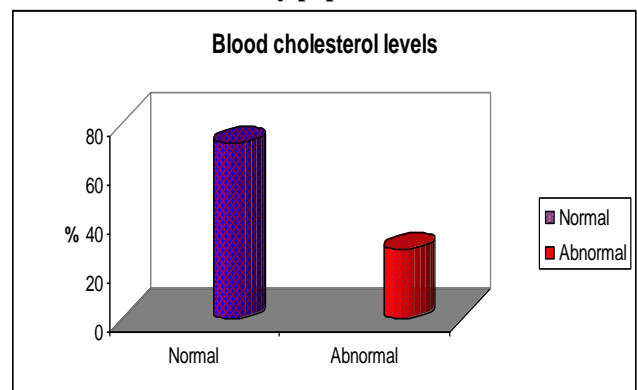
**Fig 7. Bar diagram showing family history of coronary artery disease in study population**



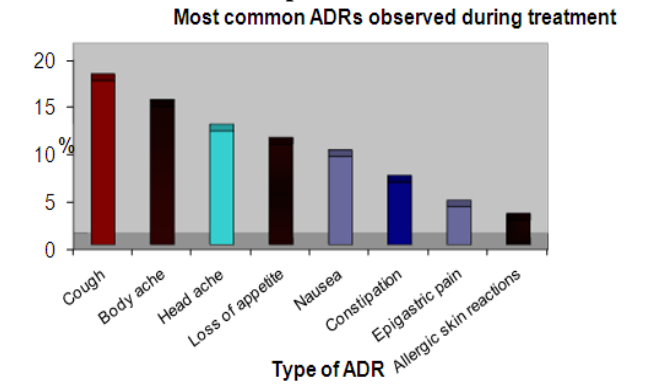
**Fig 8. Bar diagram showing co-morbidities of study population**



**Fig 9. Bar diagram showing blood cholesterol levels of study population**



**Fig 10. Most Common ADR Reported By the Study Population**



**Table 1. Drugs Distributed In Patients with Angina**

S.No	Drug (Brand Name)	Drug (Generic Name)	Number	Percentage
1	Metolar 250	Metoprolol	6	6
2	Enace OD	Enalapril+Hydro chlorthiazide	21	21
3	Froselac	Furusemide+Spiranolactone	4	4
4	Sorbitrate	Isosorbide dinitrate	50	53
5	Ecosprin	Asprin	50	50
6	Clopilet	Clopidogrel	39	39
7	Ramistar	Ramipril	15	15
8	Dilzem	Diltiazem	13	13
9	Clopitab	Clopidogrel	39	30
10	Isordil	Isosorbide dinitrate	30	30
11	Atocar	Atorvastatin	13	13
12	Betaloc	Metoprolol	13	13
13	Tonact	Atorvastatin	4	4
14	Repace	Losartan	9	9
15	Amlodip/lupidip	Amlodipine	4	4
16	Enalapril	Enalapril	4	4
17	Lipikind	Atorvastatin	4	4
18	Deplatt H	Clopidogrel	4	4
19	Aztor	Atorvastatin	11	11
20	Met XL	Isosorbide mononitrate+Asprin	4	4
21	Clopidogrel+ Asprin	Clopidogrel+ Asprin	6	6
22	Atorvastatin	Atorvastatin	17	17
23	Montrate	Isosorbide mononitrate	15	15
24	Amlovas	Amlodipine	17	17
25	losar	Losartan	9	9
26	Atenelol	Atenelol	4	4
27	Angigen	Diltiazems	9	9
28	Ismolor	Isosorbide mononitrate	13	13

**Table 2. Intervention study group (study) knowledge assessment in study group (assessed based on correct answers)**

Questions [n=50]	Before intervention		After intervention		% Difference	P value
	Number	%	Number	%		
1. Do you know the disease you are suffering from	2	4	50	100	96	0.04
2. Do you know what the cause of Angina is?	9	18	35	70	52	0.04
3. Do you know what the symptoms of Angina?	16	32	47	94	62	0.04
4. Do you know the importance of taking regular treatment of Angina	3	6	38	76	70	0.04
5. Do you know how long medication for Angina should be taking?	2	4	32	64	60	0.04
6. Do you have any side effects?	0	0	17	34	34	0.04
7. Do you know the preventive measures?	7	14	42	84	60	0.04
8. Do you know how to take medication?	2	4	50	100	96	0.04
9. Do you know precaution during chest pain?	4	8	49	98	90	0.04
10. Do you know that life style modification is necessary for you	5	10	45	90	80	0.04
Mean+/- SD	5+/-4.69		40.5+/-10.42		35.5	

**DISCUSSIONS**

In the present study 100 coronary angina patients are participated, out of that about 63% were males and

37% were females. It shows that in our study population the incidence of disease is more in male. Most of the patients were in the age group of 50-60 years (36%). In

our study about 53% of patients were overweight. 23% and 24% were normal weight and obese respectively. It was found that 75% were non vegetarian 28% were having smoke and 8% were having alcohol habits.

Katz *et al.*, in their epidemiological studies suggest that communities with a high incidence of coronary artery disease are once with a high consumption of animal fat, and communities with a low incidence are once with a low consumption. Subrata Bagchi *et al.*, in their case control study found that strong statistical association between smoking and CHD. The major co-morbidities that are present in the study population were hypertension and diabetes. 59% of study populations were having hypertension as a major co-morbidity. Most of the persons nearly 31% were having both hypertension and diabetes. 45% of the study population was having only diabetes as a co morbid condition. It was found that major risk factors for coronary artery disease are hypertension and diabetes. Gupta *et al.*, (2002) found a high prevalence of standard risk factors for coronary artery disease is physical inactive, hypertension, hypercholesterolemia, diabetes and obesity. Sonmeh K *et al.*, also found hyperlipidemia, family history of CAD, smoking, obesity as risk factors in patients with angiographically established coronary artery disease. In the present study we found that about 28% of study population was having abnormal blood cholesterol levels. Medications that used in the treatment of coronary artery disease were studied during our study period. The medication used was nitrates, antiplatelets,  $\beta$ -blockers, ACE inhibitors, calcium channel blockers and lipid lowering drugs during hospitalization.

Sonmeh K *et al.*, in their study they found the use of antiplatelets,  $\beta$ -blockers, ACE inhibitors, statins and calcium antagonists in patients with angiographically established CAD. Laura P. Kimble *et al.*, (2000)

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conducted a study on the knowledge and use of sublingual Nitro glycerin. The findings support the need for more frequent reinforcement of patient education, especially in the areas of preventive use of sublingual nitroglycerine and side effect management. Ali E. Denktaş *et al.* conducted a study on the new approaches to the pharmacological treatment of angina.

During our study we observed the Adds of the treatment in patients who were enrolled in the study. During study the ADRs that are experienced by he patients were cough, body ache, head ache loss of appetite at a percentage of 17, 14, 12 10 respectively. The less most ADRS of the treatment were constipation, epigastric pain and allergic skin reaction. In the present study knowledge was assessed in patients with angina pectoris regarding disease, factors that influence CAD, life style modification and complication of Angina. It was found that most of the patients were unaware about the basic concepts.

Assiri, A.S. *et al.*, in their study they found the level of education about CAD in the majority of patients who is admitted in hospital with a diagnosis of acute coronary syndrome was poor regarding their disease, risk factors. Pia Tingstrom *et al.*, in their study found after educational program patients showed increased knowledge about disease. Annette Williams *et al.*, found in their study patients who watched the educational video received no educational video.

## CONCLUSION

In our study we found that patients in the intervention group, who received counseling by the pharmacist showed significant improvement in the knowledge compared with the before intervention.

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