

# Evaluation of Prevalence of Patients with Chest Pain Visited in a Tertiary Care Hospital of Gujarat

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## Abstract

**Background:** Chest pain is a commonly occurring symptom affecting between 20 and 40% of the general population during their lifetime. Hence; the present study was planned for assessing the prevalence of patients with chest pain visited in hospital. **Subjects and Methods:** A total of 718 patients were analyzed Clinical and past medical history of all the patients was obtained. Categorization of the etiologies of all the patients with chest pain was done into following categories: Cardiovascular cause, Respiratory cause, Psychiatric cause, gastrointestinal cause, and Unknown. All the results were recorded in Microsoft excel sheet and were analyzed by SPSS software. **Results:** Prevalence of chest pain in the present study was 29.67 percent. Cardiovascular cause was the main reason (27.70 percent patients) for the admission of patients with chest pain. Respiratory cause was the next major cause responsible for chest pain in 25.82 percent of the patients. **Conclusion:** Cardiovascular, respiratory and psychiatric causes are the reasons for admission of patients due to chest pain.

**Keywords:** Chest Pain, Prevalence.

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## Introduction

Chest pain is a commonly occurring symptom affecting between 20 and 40% of the general population during their lifetime. Approximately 1.5% of the general population consults a primary care physician each year because of chest pain symptoms. In the UK, a presenting complaint of chest pain makes up 1% of all primary care consultations.<sup>[1-3]</sup> Furthermore, more than 5% of visits to emergency departments, and up to 40% of emergency admissions, are due to chest pain. Chest pain management is one of the biggest challenges in the emergency department (ED). This symptom accounts for 5 to 20 % of all ED admissions, being the second most common reason to present to the ED in the United States of America.<sup>[4-6]</sup> Causes of chest pain vary from musculoskeletal chest pain to potentially life-threatening emergencies. Therefore, accurate and fast risk stratification is paramount in the acute management of these patients, mainly to identify those patients with immediate risk of complications, as those with an acute coronary syndrome.<sup>[7]</sup> Hence; under the light of above mentioned data, the present study was planned for assessing the prevalence of patients with chest pain visited in hospital.

## Subjects and Methods

The present study was planned for assessing the prevalence of patients with chest pain visited in Department of General

Medicine, Dr. N.D. Desai Faculty of Medical Science and Research, Nadiad, Gujarat, India. A total of 718 patients were analyzed.

### Inclusion criteria for the present study included:

- Patients within the age group of 20 to 60 years,
- Patients who gave the informed consent,
- Patients with negative history of any known drug allergy

Clinical and past medical history of all the patients was obtained. Categorization of the etiologies of all the patients with chest pain was done into following categories:

- Cardiovascular cause,
- Respiratory cause,
- Psychiatric cause,
- Gastrointestinal cause, and
- Unknown

All the results were recorded in Microsoft excel sheet and were analyzed by SPSS software. Chi- square test was used for assessment of level of significance. P- value of less than 0.05 was taken as significant.

## Results

In the present study, a total of 718 patients were analyzed. Chest pain was present among 213 patients. Prevalence of chest pain in the present study was 29.67 percent. Chest pain

was more commonly seen in males (135 patients) in comparison to females (78 patients). Also, chest pain was found to be more common among patients more than 50 years of age.

**Table 1: Prevalence of chest pain**

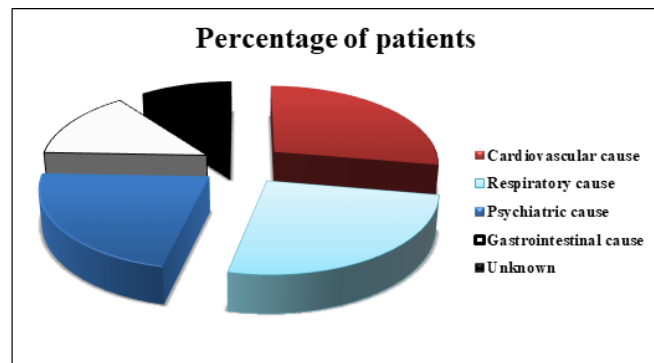
Parameter		Number of patients
Age group (years)	Less than 30	50
	30 to 50	79
	More than 50	84
Gender	Males	135
	Females	78

**Table 2: Distribution of patients with chest pain according to different causes**

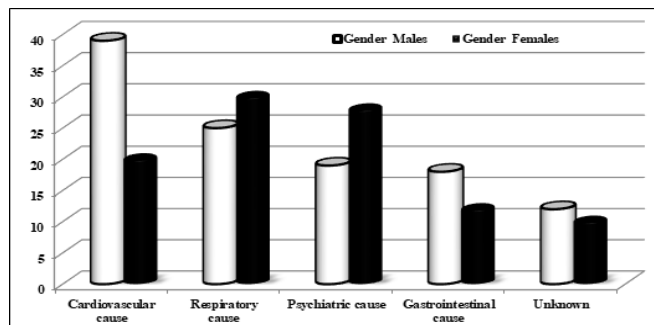
Cause of chest pain	Number of patients	Percentage of patients
Cardiovascular cause	59	27.70
Respiratory cause	55	25.82
Psychiatric cause	47	22.06
Gastrointestinal cause	30	14.08
Unknown	22	10.34
Total	213	100

**Table 3: Correlation of patients with chest pain divided on the basis of gender**

Cause of chest pain	Gender		p- value
	Males	Females	
Cardiovascular cause	39	20	0.00 (Significant)
Respiratory cause	25	30	
Psychiatric cause	19	28	
Gastrointestinal cause	18	12	
Unknown	12	10	



**Figure 1: Distribution of patients with chest pain according to different causes**



**Figure 2: Correlation of patients with chest pain divided on the basis of gender**

In the present study, cardiovascular cause was the main reason (27.70 percent patients) for the admission of patients with chest pain. Respiratory cause was the next major cause responsible for chest pain in 25.82 percent of the patients.

In the present study, among males, the major reason for chest pain was cardiovascular cause, whereas among females, the major reason for chest pain was psychiatric cause. Significant results were obtained Correlation of patients with chest pain divided on the basis of gender.

## Discussion

Chest pain can be cardiac (angina) as well as non-cardiac in origin. Patients present with a wide spectrum of signs and symptoms reflecting several potential etiologies of chest pain including life-threatening, urgent conditions such as: myocardial infarction (MI), pulmonary embolism, or aortic dissection; and non-urgent conditions such as: musculoskeletal pain, gastro-esophageal reflux disease (GERD), pericarditis, or others. Chest pain is the most common presenting complaint of an MI. 6-8 Chest pain can be triggered by a range of different illnesses, including cardiac, gastrointestinal, musculoskeletal, psychological, malignant and pulmonary diseases. While life-threatening cardiac disease is of the greatest immediate concern to both patient and physician, cardiac disease is estimated to account for only a minority (8–18%) of all cases of chest pain. 10 Hence; under the light of above mentioned data, the present study was planned for assessing the prevalence of patients with chest pain visited in hospital.

In the present study, a total of 718 patients were analyzed. Chest pain was present among 213 patients. Prevalence of chest pain in the present study was 29.67 percent. Chest pain was more commonly seen in males (135 patients) in comparison to females (78 patients). Also, chest pain was found to be more common among patients more than 50 years of age. Bösner S et al studied the epidemiology of chest pain with respect to underlying aetiologies and to establish pre-work-up probabilities for the primary care setting. They included 1212 consecutive patients with chest pain, aged 35 years and older, attending 74 general practitioners (GPs). GPs recorded symptoms and findings of each patient and provided follow-up information. An independent interdisciplinary reference panel reviewed clinical data of every patient and decided on the aetiology of chest pain at the time of patient recruitment. The prevalence of chest pain among all attending patients was 0.7%. The majority (55.9%) of patients were women. Mean age was 59 (35-93) years. Of these patients, 53.2% had chest pains at the time of consultation and 29.6% presented with acute (<48 hours' duration) chest pain. Pain originating from the chest wall was diagnosed in 46.6% of all patients, stable ischaemic heart disease (IHD) in 11.1%, and psychogenic disorders in 9.5%; 3.6% had acute coronary syndrome (ACS). The study added important information about the epidemiology of chest pain as a frequent reason for consulting primary care practitioners.<sup>[11]</sup>

In the present study, cardiovascular cause was the main

reason (27.70 percent patients) for the admission of patients with chest pain. Respiratory cause was the next major cause responsible for chest pain in 25.82 percent of the patients. Among males, the major reason for chest pain was cardiovascular cause, whereas among females, the major reason for chest pain was psychiatric cause. Significant results were obtained Correlation of patients with chest pain divided on the basis of gender. Al-Ani M et al investigated symptoms and noncardiac conditions in a cohort of patients with chest pain at low risk of cardiac disease. They analyzed data from a prospective registry of patients who were evaluated in our chest pain evaluation center. Registry participants completed standardized and validated instruments for depression (by Patient Health Questionnaire PHQ-9), anxiety (by Generalized Anxiety Disorder GAD-7), and Gastroesophageal Reflux Disorder (GERD; by GERD Symptom Frequency Questionnaire). Chest pain characteristics were recorded; severity was reported on a 10-point scale. No correlation was observed between any of the scores and body mass index, smoking tobacco, diabetes mellitus, hypertension, or hyperlipidemia. In their cohort of low-risk acute chest pain patients, depression, anxiety, and GERD were common, substantial overlap was observed.

## Conclusion

Under the light of above obtained results, it can be concluded that cardiovascular, respiratory and psychiatric causes are the reasons for admission of patients due to chest pain. However; further studies are recommended.

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