Research Report

PREVALENCE OF PANIC DISORDER AMONG PATIENTS WITH NON-CARDIAC CHEST PAIN ATTENDING CARDIOLOGY OUTPATIENT DEPARTMENT IN A TERTIARY CARE CENTRE IN KERALA – A CROSS-SECTIONAL STUDY

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Abstract

Background: Non-cardiac chest pain, a term that serves as a broad canvas, has a multitude of potential causes in which panic disorder emerges as a prevailing cause. The recognition and accurate diagnosis of panic disorder among patients with non-cardiac chest pain is important. Hence a study was conducted to understand the prevalence of panic disorder among patients with non-cardiac chest pain in a tertiary care center in Kerala. **Methods:** A hospital-based, cross-sectional study was done among 118 patients who were diagnosed with non-cardiac chest pain by a cardiologist. The study was conducted in the cardiology OPD in a tertiary care center in Kerala. Mini-International Neuropsychiatric Interview Panic disorder – Version 6.0.0 (M.I.N.I.) was used to diagnose panic disorder among these patients. **Results:** It was found that panic disorder was present in 39.8% (95% Confidence Interval - 30.9-49.3%). **Conclusion:** The prevalence of panic disorder in patients diagnosed with non-cardiac chest pain was 39.8%. Consultation liaison treatment using pharmacotherapy and/or psychotherapy with the help of a psychiatrist may benefit such patients.

Keywords: Panic disorder, non-cardiac chest pain, cross-sectional study, prevalence

Introduction

Panic disorder is a very common and often disabling type of anxiety disorder with profound effects on quality of life, which is seen in 1 to 4 of every 100 persons.[1] A panic attack is an abrupt episode of intense fear associated with many physical and psychological reactions that can be severe when there is no real objective danger, which can be frightening.[2] Among anxiety disorders, panic disorder has been independently linked to an increased risk of suicide attempts.[3] Panic disorder is characterized by recurrent panic attacks with persistent worry or behavior change that results from such attacks. Because of this persistent worry and behavioral changes associated with such attacks, these patients experience a significant amount of functional disability due to the symptoms. In panic attacks, the physical reactions include many symptoms ranging from chest pain, palpitations, shortness of breath, dizziness, or abdominal distress; psychological reactions include fear of losing control, having a heart attack, or a sense of impending doom; these symptoms are present

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for one month or more.[4] Chest pain in health care settings can be caused by a spectrum of conditions – ranging from diseases with favorable prognoses like musculoskeletal disorders to acute and potentially life-threatening cardiovascular conditions like coronary heart disease.

Table 1. Sociodemographic and clinical details of the study sample

Sociodemographic variables		Frequency % (N = 118)
Age group in years	18-28	13 (11.0)
	29-38	16 (13.6)
	39-48	46 (39.0)
	49-58	32 (27.1)
	59-68	11 (9.3)
Gender	Male	46 (39.0)
	Female	72 (61.0)
Type of family	Nuclear	75 (63.6)
	Joint	39 (33.0)
	Extended	4 (3.4)
Educational status	Graduate	37 (31.4)
	Higher Secondary	26 (22.0)
	High School	35 (29.7)
	Upper Primary	15 (12.7)
	Lower Primary	5 (4.2)
Marital status	Married	72 (61.0)
	Married, separated	7 (5.9)
	Divorced	1 (0.8)
	Unmarried	18 (15.3)
	Widow/widower	20 (16.9)
Occupational status	Professional	34 (28.8)
	Skilled	17 (14.4)
	Unskilled	33 (27.9)
	Unemployed	34 (28.8)
Socioeconomic status	APL	25 (21.2)
	BPL	93 (78.8)
Comorbid psychiatric illness	Yes	12 (10.2)
	No	106 (89.8)
History of substance use	Yes	42 (35.6)
	No	76 (64.4)
Type of substance	Alcohol	31 (26.3)
	Nicotine	11 (9.3)
	No substance use	76 (64.4)
Comorbid medical Illness	Yes	54 (45.8)
	No	64 (54.2)

APL – Above Poverty Line, BPL – Below Poverty Line

Around 50% of patients presenting with chest pain to the emergency department and more than 80 % of patients presenting to a primary care setting can have an adverse cardiac workup. Still, the symptoms can persist in such patients. This type of recurring chest pain of non-cardiac origin is called 'non-cardiac chest pain,' and the lifetime prevalence of non-cardiac chest pain is around 33%.[4]

Non-cardiac chest pain (NCCP) is a term used to describe chest pain that resembles heart pain (also called angina) in patients who do not have heart disease. The pain is typically felt behind the breast bone (sternum) and is described as oppressive, squeezing, or pressure-like. [5] Of the patients with unexplained chest pain, 50%-70% experience persistent chest pain, 19% to 51% of the patients are seen to experience occupational losses, and 40% to 100% are seen to experience functional losses. Such patients are exposed to high rates of medical interventions, which also include high rates of hospitalization and inappropriate drug intake. [6]

A study done by Hocaoglu et al. (2008) determined the psychiatric comorbidity in patients with chest pain without a cardiac etiology. It was found that panic disorder was diagnosed in 47.1% of patients in the non-cardiac chest pain group. This study highlights that the psychiatric disorder rate is high in patients with non-cardiac chest pain, and also, understanding the psychiatric symptom profile of the patient will contribute to the appropriate treatment of patients with non-cardiac chest pain. [7]

Given the profound functional incapacity that is associated with panic disorder and also that there is the availability of effective treatment for panic disorder, missing out on diagnosing panic disorders in such situations is very unfortunate, and it affects the quality of life in such patients. Fortunately, panic disorder is manageable with adequate and appropriate treatment. Selective Serotonin Reuptake

Inhibitors (SSRIs)/Benzodiazepines/Cognitive Behavior Therapy (CBT) effectively reduce the symptoms and bring about profound relief in patients' symptoms, improve quality of life, and reduce functional disability and medical service utilization among such patients. [8]

Hence, this study was done to understand the prevalence of panic disorder among patients with non-cardiac chest pain in a tertiary care center in Kerala.

Materials and Methods

The purpose of this hospital-based cross-sectional study, conducted from May 2021 to April 2022, was to investigate the prevalence of panic disorder in patients aged 18 years and above who presented to the cardiology outpatient department (OPD) with non-cardiac chest pain. The study received approval from the Institutional Ethics Committee. The sample size was determined based on the expected proportion of panic disorder in patients with non-cardiac chest pain, as per previous studies,[7] and considering a 10% non-response rate. The calculated sample size was 118. The study included consecutive patients who visited the cardiology OPD with chest pain, including referred cases from the medicine department. To be included in the study, all patients had to undergo cardiology evaluation, which involved ruling out any abnormalities in the echocardiogram (ECG), no abnormally elevated troponin levels, no functional or structural abnormalities in echocardiography, and no inducible signs of ischemia in the Treadmill test. Patients who were below 18 years of age, those with unstable vital signs, uncooperative or disoriented patients, and patients with a previous history of coronary artery disease were excluded from the study. Once a diagnosis of non-cardiac chest pain was made, the aims of the study, the procedure involved, and the time required for participation were explained to these patients. Written informed consent was obtained from each patient, ensuring the confidentiality of their information. A detailed history of each patient was obtained, and Mini International Neuropsychiatric Interview (MINI) panic disorder, version 6.0.0,[9] was applied for each patient to diagnose panic

Table 2. Sociodemographic and clinical profile of the participants with panic disorder

Sociodemographic variables		Frequency (%) (N = 47)
Age group (Years)	18-28	5 (10.6)
	29-38	8 (17.0)
	39-48	21 (44.7)
	49-58	11 (23.4)
	59-68	2 (4.3)
Gender	Male	16 (34.0)
	Female	31 (66.0)
Type of family	Nuclear	29 (61.7)
	Joint	18 (38.3)
	Extended	0 (0.0)
Educational status	Graduate	13 (27.7)
	Higher Secondary	10 (21.3)
	High School	18 (38.3)
	Upper Primary	6 (12.8)
	Lower Primary	0 (0.0)
Marital status	Married, living together	30 (63.8)
	Married, living separately	0 (0.0)
	Divorced	0 (0.0)
	Unmarried	6 (12.8)
	Widow/widower	11 (23.4)
Occupational status	Professional	14 (29.8)
	Skilled	6 (12.8)
	Unskilled	12 (25.5)
	Unemployed	15 (31.9)
Socioeconomic status	APL	9 (19.0)
	BPL	38 (81.0)
Comorbid psychiatric illness	Yes	6 (12.7)
	No	41 (87.3)
History of substance use	Yes	15 (32.0)
	No	32 (68.0)
Type of substance	Alcohol	14 (32.0)
	Nicotine	1 (2.0)
	No substance use	32 (68.0)
Comorbid medical Illness	Yes	27 (57.4)
	No	20 (42.6)

APL – Above Poverty Line, BPL – Below Poverty Line

disorder. As per the Mini International Neuropsychiatric Interview Panic Disorder version 6.0.0, there are mainly four questions with which we can diagnose panic disorder as panic disorder, current; panic disorder lifetime; and panic disorder, limited symptom attacks, lifetime. If the patient has one panic attack followed by a month with persistent concern of having another attack or if the patient made a significant change in behavior to avoid such an attack in the future, it can be diagnosed as panic disorder, lifetime. If the patient has had two or more attacks in the past one month, it is diagnosed as panic disorder, current. If the patient has had only a few symptoms of the attack, it is diagnosed as a limited symptom attack, lifetime. The collected data was appropriately coded and entered into MS Excel for further analysis, which was performed using R statistical software version 4.3.2.

Results

In this study, 118 subjects with non-cardiac chest pain were evaluated for panic disorder. The socio-demographic description of the sample is given in Table 1. It was found that 47 participants (39.8%) were diagnosed with panic disorder, with a 95% Confidence Interval (95% CI) of 30.9-49.3%. Most cases were between the 3rd and 5th decade of life, belonged to the Below Poverty Line (BPL) group, and had a female preponderance. Among the cases, 12.7% had a comorbid psychiatric illness, 57.4% had a history of comorbid medical illness, and 32% cases had a history of substance abuse (see Table 2).

Out of the 47 cases with panic disorder, 34 (72.3%) had a diagnosis of panic disorder, lifetime, of whom 18 (38.3%) had a diagnosis of panic disorder, current, while 13 (27.7%) had a diagnosis of panic disorder, limited symptom attack, lifetime (see Table 3). Panic disorder, lifetime, and panic disorder, current are not mutually exclusive, and they can co-occur in the same patient according to the MINI diagnostic tool, which results in a higher number if the total is calculated. In the present study of the

Table 3. Panic Disorder

Panic Disorder	Frequency (%) (N= 47)
Lifetime	34 (72.3%)
Current	18 (38.3%)
Limited symptom attack, lifetime	13 (27.7%)

34 patients diagnosed with panic disorder lifetime, 18 patients also had a diagnosis of panic disorder current.

Discussion

This hospital-based cross-sectional study was conducted on the prevalence of panic disorder among patients with NCCP who attended the cardiology outpatient department in a tertiary care center in Kerala. Out of the total 118 patients who were diagnosed with NCCP by the cardiologist, the prevalence of panic disorder was 39.8%, out of which 72.3% had a diagnosis of panic disorder, lifetime, 38.3% had a diagnosis of panic disorder, current and 27.7% had a diagnosis of panic disorder, limited symptoms. In a study by Sinha et al. (2013), the prevalence of panic disorder in patients with NCCP was 44.9%, which was a study carried out in a similar sociodemographic setting to this study and may have resulted in a similar prevalence rate of panic disorder in patients with NCCP.[10] In the study by Hocaoglu et al. (2008), the prevalence of panic disorder in patients with chest pain without a cardiac etiology was 47.1%.[7] In a study by Alexander et al. (1998), the prevalence of panic disorder in patients with non-cardiac chest pain was 50%.[11] In another study by Cormier et al. (1988), chest pain with negative cardiac diagnostic studies, the prevalence of panic disorder was found to be 47%.[12] The possibility of the current study having a reduced prevalence compared to other studies may be because the data collection of this study was during the COVID-19 pandemic period, and patients with milder symptoms may not have presented to the hospital with their complaints. As in this study, it is imperative to consider panic disorder as a differential diagnosis. In the

case of panic disorder, the symptoms of anxiety and fear are excessive. They can cause significant impairment in the quality of life of an individual if not correctly diagnosed. Detecting panic disorder in patients with NCCP can promote early intervention. The collaborative efforts of cardiologists, psychiatrists, and other healthcare professionals are indispensable in delivering comprehensive care, thereby improving these patients' quality of life. Overall, acknowledging the prevalence of panic disorder among patients with NCCP underscores the significance of integrated care and a holistic approach to healthcare delivery.

Conclusion

With a prevalence of 39.8% among patients diagnosed with NCCP, panic disorder emerges as a significant comorbidity that demands comprehensive and targeted treatment strategies. In light of this high prevalence, consultation-liaison with a psychiatrist becomes crucial in optimizing patient care and improving their overall functioning. By engaging in this collaborative approach, the expertise of the psychiatrist can be harnessed to assess and address the underlying panic disorder in patients with NCCP.

By implementing consultation liaison with a psychiatrist and integrating pharmacotherapy (e.g., SSRIs) and psychotherapy like CBT, patients with NCCP diagnosed with panic disorder can experience significant improvements in their overall functioning. This comprehensive approach can address the physical and psychological aspects of their condition, offering relief from symptoms and enhancing their quality of life.

Limitations of the Study

The present study was done in a tertiary hospital in a specialized cardiology setting, and hence, the results cannot be generalized to the entire population. Other causes of non-cardiac chest pain, like GERD, pleurisy, musculoskeletal pain, etc, were not specifically excluded because of feasibility factors.

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