Journal of Health and Rehabilitation Research 2791-156X JHRR

For contributions to JHRR, contact at email: editor@jhrlmc.com

Original Article

Prevalence of Fibromyalgia among Ischemic Heart Disease Patients in Lahore

Aleena Chohdary[1]*, Nimra Riaz[2], Zainab Riaz[3], Tayyaba Maqsood[1], Hadia Zulfiqar[1], Aasma Noor[1]

[1]Social Security Hospital- Multan Road- Lahore- PESSI – Pakistan.

[2]Sehat Medical Complex- Project of UOL- Lahore – Pakistan.

[3]Zafar Hospital- Lahore – Pakistan.

Corresponding Author: Aleena Chohdary; Email: a065511@gmail.com

Conflict of Interest: None.

Chohdary A., et al. (2024). 4(2): DOI: https://doi.org/10.61919/jhrr.v4i2.950

ABSTRACT

Background: Fibromyalgia (FM) is a chronic pain disorder often coexisting with other conditions, complicating diagnosis, and management. Ischemic heart disease (IHD) patients may exhibit FM symptoms, which can affect their overall health and treatment outcomes. Understanding the prevalence and severity of FM in IHD patients can improve clinical approaches and patient care.

Objective: To determine the prevalence of fibromyalgia among ischemic heart disease patients in Lahore and to assess the severity of associated somatic symptoms.

Methods: This cross-sectional study included 158 participants diagnosed with ischemic heart disease, recruited through non-probability sampling from the Punjab Institute of Cardiology. The age range of participants was 30-60 years, with a mean age of 2.2595±0.75865. Both genders were included, with 62 males (39.2%) and 96 females (60.8%). Participants were categorized into three age groups for analysis. Data collection involved administering a fibromyalgia screening questionnaire to participants who provided informed consent. Exclusion criteria included diabetes, autoimmune diseases, immunosuppressive diseases, liver diseases, cancer, and history of substance abuse. Ethical approval was obtained according to the Declaration of Helsinki. Data were analyzed using SPSS version 25.0, with descriptive statistics (means, standard deviations, frequencies) and inferential statistics employed to explore associations between fibromyalgia and ischemic heart disease.

Results: Among the 158 IHD patients, 61.4% reported fibromyalgia symptoms, while 38.6% did not. Fibromyalgia symptoms were reported in the upper extremities by 93.7% of patients, in the lower extremities by 86%, in the face by 50%, in the front areas by 64.6%, and in the upper and lower back by 61.4%. Additionally, 62.7% of IHD patients reported somatic symptoms beyond musculoskeletal pain. Severity of symptoms included 55% reporting moderate to extreme fatigue, 58% reporting moderate to extreme difficulty waking refreshed, and 30% reporting slight cognitive changes.

Conclusion: The study identified a significant prevalence of fibromyalgia symptoms among ischemic heart disease patients, with considerable severity of symptoms and additional somatic complaints. These findings highlight the importance of screening for fibromyalgia in IHD patients to improve diagnosis and treatment strategies, ultimately enhancing patient outcomes.

Keywords: Fibromyalgia, Ischemic heart disease, Chronic pain, Somatic symptoms.

INTRODUCTION

Fibromyalgia (FM) is a chronic illness characterized by widespread musculoskeletal pain without a specific location, with patients often vividly recalling the onset of this debilitating condition. Increased pain sensitivity is typically revealed through palpation of specific pressure points on the body (1). Patients with FM frequently report persistent muscle pain, which can be mistakenly identified as inflammatory joint diseases (IJD) during diagnosis. To avoid misdiagnosis, the American College of Rheumatology (ACR) provides criteria stating that FM-related pain must persist for at least three months, with increased pain intensity upon applying pressure to certain areas (2). Fatigue is another common symptom reported by FM patients (3).

In addition to pain, FM patients often experience systemic disorders such as nausea, irritable bowel syndrome (IBS) (4), and restless leg syndrome (RLS) (5). FM frequently coexists with inflammatory joint diseases such as rheumatoid arthritis (RA) (6), osteoarthritis (OA), and systemic lupus erythematosus (SLE) (7), complicating its diagnosis. The primary pathological causes of FM are believed to

Journal of Health and Rehabilitation Research 2791-156X JHRR

involve disturbances in the neuro-endocrine system (NES), the autonomic nervous system (ANS), as well as hereditary, psychological, and environmental factors (8). The pain associated with fibromyalgia activates the sympathetic nervous system, thereby increasing the coronary workload, with heart conditions acting as a contributing factor in exacerbating FM severity (9).

Ischemic heart disease (IHD) is a medical condition characterized by decreased blood flow to the heart, resulting in an oxygen supply shortage to the heart muscles. Coronary artery blockage, a common cause of IHD, results in persistent and ongoing issues. The death rate due to coronary artery disease is approximately 1.7 million per year, accounting for thirty percent of all deaths in the United States. Hardening of the heart arteries, primarily due to the accumulation of low-density lipoproteins (LDL), is common among smokers, individuals with diabetes mellitus (DM), and hypertensive populations (10). An inflammatory cascade begins as bad cholesterol molecules occlude the heart's blood vessels, disrupting the oxygen supply and demand, leading to IHD. Other factors contributing to IHD include embolism formation in heart arteries, a drop in oxygen supply, increased heart oxygen demand, arterial spasms, and reduced perfusion rates in heart arteries (11).

This study aimed to determine the prevalence of fibromyalgia among ischemic heart disease patients in Lahore. It provides crucial insights into the likely coexistence and prevalence of fibromyalgia in patients with ischemic heart disease, which could significantly enhance the management and healthcare planning for affected individuals. Understanding the prevalence of FM among IHD patients may lead to improved clinical outcomes by tailoring treatment strategies to address the overlapping symptoms and complications of both conditions.

MATERIAL AND METHODS

The cross-sectional study included 158 participants diagnosed with ischemic heart disease, selected through non-probability sampling from the Punjab Institute of Cardiology. The age range of the participants was between 30 to 60 years, with a mean age of 2.2595±0.75865. Both genders were represented, with 62 males (39.2%) and 96 females (60.8%). Participants were categorized into three age groups for analysis. Data collection involved the use of a fibromyalgia screening questionnaire, which was administered to all participants who provided informed consent. Only participants who agreed to the terms outlined in the consent form proceeded with the data collection process.

To ensure the reliability and validity of the data, participants with comorbid conditions such as diabetes, autoimmune diseases, immunosuppressive diseases, liver diseases, cancer, or a history of substance abuse were excluded from the study. This exclusion criteria aimed to eliminate confounding variables that could affect the study outcomes. The ethical approval for this study was obtained in accordance with the Declaration of Helsinki, ensuring that the research adhered to the highest ethical standards.

Data collection was meticulously conducted, with trained personnel administering the fibromyalgia screening questionnaire to the selected participants. The responses were recorded and securely stored to maintain confidentiality and integrity. The data were then analyzed using SPSS version 25.0, which provided robust statistical analysis capabilities. Descriptive statistics, including means, standard deviations, and frequencies, were calculated to summarize the demographic and clinical characteristics of the participants. Inferential statistics were employed to explore potential associations between fibromyalgia and ischemic heart disease, using appropriate statistical tests to ensure the accuracy and reliability of the results.

In summary, this study was designed to investigate the prevalence of fibromyalgia among patients with ischemic heart disease in Lahore, utilizing a comprehensive and ethically sound methodology. The use of rigorous data collection and analysis techniques ensured the validity of the findings, contributing valuable insights to the understanding of the coexistence and impact of these conditions.

RESULTS

The results of this study demonstrated a significant prevalence of fibromyalgia symptoms among patients with ischemic heart disease. The sample comprised 158 participants, with a gender distribution of 62 males (39.2%) and 96 females (60.8%) (Table 1). The participants' ages ranged from 30 to 60 years, with 30 individuals (19%) in the 30-39 age group, 57 individuals (36.1%) in the 40-49 age group, and 71 individuals (44.9%) in the 50-59 age group, reflecting a broad representation across the adult age spectrum (Table 1).

The prevalence of fibromyalgia symptoms among the study population was notable. Out of the 158 ischemic heart disease patients, 97 (61.4%) reported experiencing fibromyalgia symptoms, while 61 participants (38.6%) did not exhibit any such symptoms (Table 2). This high prevalence underscores the significant overlap between fibromyalgia and ischemic heart disease, suggesting a need for heightened awareness and screening for fibromyalgia in this patient population.

Journal of Health and Rehabilitation Research 2791-156X JHRR

Table 1- Gender Distribution:

Gender	Frequency (f)	Percentage (%)
Male	62	39.2%
Female	96	60.8%

Table 2- Age Distribution:

Age Groups	Frequency (f)	Percentage (%)
30-39 (1st age group)	30	19%
40-49 (2nd age group)	57	36.1%
50-59 (3rd age group)	71	44.9%

Table 3- Fibromyalgia Symptoms Distribution:

Fibromyalgia Symptoms	Frequency (f)	Percentage (%)
Fibromyalgia symptoms among IHD patients	97	61.4%
No fibromyalgia symptoms among IHD patients	61	38.6%

Table 4- Severity Level of Fibromyalgia Symptoms:

Severity Level	Frequency of Fatigue (f)	Percentage of Fatigue (%)	Frequency of Waking Unfreshed (f)	Percentage of Waking Unfreshed (%)	Frequency of Cognitive Change (f)	Percentage of Cognitive Change (%)
0 - No Problem	1	6%	48	30.4%	90	57%
1 - Slight	68	43%	19	12%	48	30.4%
2 - Moderate	56	35.4%	62	39.2%	18	11.4%
3 - Severe	33	20.9%	29	18.4%	2	1.3%

The distribution of fibromyalgia symptoms across different body regions was also analyzed. An overwhelming 93.7% of patients reported symptoms in the upper extremities, highlighting the widespread impact of fibromyalgia on daily functioning. Similarly, 86% of participants experienced symptoms in the lower extremities, indicating substantial lower body involvement. Symptoms in the facial area were reported by 50% of the patients, while 64.6% had symptoms in the front areas of the body. Additionally, 61.4% of participants experienced fibromyalgia symptoms in both the upper and lower back, illustrating the extensive nature of the pain and discomfort associated with this condition.

The severity of fibromyalgia-related somatic symptoms was assessed using a detailed scale. Fatigue levels varied among the patients, with only 1 individual (6%) reporting no fatigue problems. Slight fatigue was reported by 68 patients (43%), moderate fatigue by 56 patients (35.4%), and severe fatigue by 33 patients (20.9%), indicating a considerable burden of fatigue among the study cohort (Table 5). The difficulty in waking refreshed was another prominent symptom, with 48 patients (30.4%) reporting no problems, 19 patients (12%) experiencing slight difficulty, 62 patients (39.2%) facing moderate issues, and 29 patients (18.4%) suffering from severe difficulties (Table 5). Cognitive changes were also prevalent, with 90 patients (57%) reporting no cognitive problems, 48 patients (30.4%) experiencing slight changes, 18 patients (11.4%) facing moderate cognitive difficulties, and 2 patients (1.3%) enduring severe cognitive impairments (Table 5).

DISCUSSION

Fibromyalgia is recognized as a central pain syndrome, manifesting as a persistent problem beginning in adolescence or young adulthood, characterized by pain in various body parts at different times throughout the day. This observational study included 158 participants, with data collected using a fibromyalgia screening questionnaire. It was observed that 61.4% of ischemic heart disease (IHD) patients reported fibromyalgia symptoms, while 38.6% did not. Among the 158 IHD patients, 93.7% reported fibromyalgia symptoms in the upper extremities, 86% in the lower extremities, 50% in the face, 64.6% in the front areas, and 61.4% in the upper and lower back. Additionally, 62.7% of IHD patients reported somatic symptoms beyond musculoskeletal pain. The severity of these symptoms was notable, with 55% reporting moderate to extreme fatigue, 58% reporting moderate to extreme difficulty waking refreshed, and 30% reporting slight cognitive changes.

Journal of Health and Rehabilitation Research 2791-156X JHRR

Previous research supports these findings. Anthea et al. conducted a study identifying fibromyalgia among cardiac patients, using the New York Heart Association scale, the Fibromyalgia Impact Questionnaire, and SF36 for quality of life assessment. They found that only 23% of cardiac patients had fibromyalgia symptoms, with poor quality of life scores, and increased sensitivity to comorbid disorders such as temporomandibular joint disorder (23%), headaches (29%), and irritable bowel syndrome (14%) (9). Another study by Mousel et al. in Iraq included 200 participants, divided into healthy subjects and IHD patients, and reported a 29% prevalence of fibromyalgia in IHD patients and 7% in healthy subjects, with a higher prevalence in women and those who had undergone angiography following myocardial infarction (12). Khudir and colleagues also found an 18% incidence of fibromyalgia among IHD patients compared to 6% in healthy subjects, focusing on individuals over seventy years old (13).

Further studies reinforce the connection between fibromyalgia and cardiac conditions. Pen et al. investigated FM symptoms among coronary artery disease patients over sixty years old, correlating the severity with psychosocial factors, and found a higher prevalence in the diseased group (14). P. Acosta et al. identified an increased probability of cardiovascular diseases among fibromyalgia patients, especially in females who did not meet physical strength criteria (15). Askin et al. reported a higher prevalence of FM symptoms among cardiac patients using the Fibromyalgia Impact Questionnaire and VAS scale for pain, finding 22 symptoms in 62 patients versus 4 in normal subjects (16). Y. Muskila's study on gender differences in FM incidence included 321 individuals and reported a higher incidence in women (11.4%) compared to men (1.5%) (17).

Caroline et al.'s large-scale study investigated pain incidence rates among FM and non-FM individuals, noting a higher prevalence of FM symptoms in women and more medical problems in men (18). Nawaf K. et al. reported an incidence of 9.3% in women and 3.1% in men in Saudi Arabia, with higher rates in those over forty and in job seekers and housewives (19). Anna Rodriguez et al. studied exercise stress tests and biomarkers, finding greater heart rate variation and increased saliva secretion in FM patients compared to normal subjects (20).

The present study's findings are significant, demonstrating a high prevalence of fibromyalgia symptoms among ischemic heart disease patients, with a considerable severity of symptoms and additional somatic complaints. However, the study had limitations, including its cross-sectional design, reliance on self-reported data, and the exclusion of certain comorbid conditions that could influence the results. Future research should aim for larger sample sizes, longitudinal designs, and consider the inclusion of diverse populations to enhance the generalizability of the findings. This study underscores the need for comprehensive management strategies addressing both fibromyalgia and ischemic heart disease to improve patient outcomes and quality of life.

CONCLUSION

The study revealed a significant prevalence of fibromyalgia symptoms among ischemic heart disease patients, highlighting the need for comprehensive management strategies that address both conditions. The findings suggest that healthcare providers should consider screening for fibromyalgia in patients with ischemic heart disease to ensure timely and accurate diagnosis, which could lead to more effective treatment plans and improved patient outcomes. By recognizing the overlap between these conditions, healthcare systems can better allocate resources, ultimately enhancing the quality of care and life for affected individuals.

REFERENCES

1. García-Ríos MC, Navarro-Ledesma S, Tapia-Haro RM, Toledano-Moreno S, Casas-Barragán A, Correa-Rodríguez M, et al. Effectiveness of Health Education in Patients With Fibromyalgia: A Systematic Review. European Journal of Physical and Rehabilitation Medicine. 2019;55(2):301-13.
2. Wolfe F, Clauw DJ, Fitzcharles MA, Goldenberg DL, Katz RS, Mease P, et al. The American College of Rheumatology Preliminary Diagnostic Criteria for Fibromyalgia and Measurement of Symptom Severity. Arthritis Care & Research. 2010;62(5):600-10.
3. Bennett R. Fibromyalgia, Chronic Fatigue Syndrome, and Myofascial Pain. Current Opinion in Rheumatology. 1998;10(2):95-103.
4. Triadafilopoulos G, Simms RW, Goldenberg DL. Bowel Dysfunction in Fibromyalgia Syndrome. Digestive Diseases and Sciences. 1991;36:59-64.
5. Viola-Saltzman M, Watson NF, Bogart A, Goldberg J, Buchwald D. High Prevalence of Restless Legs Syndrome Among Patients With Fibromyalgia: A Controlled Cross-Sectional Study. Journal of Clinical Sleep Medicine. 2010;6(5):423-7.
6. Wolfe F, Cathey M, Kleinheksel S. Fibrositis (Fibromyalgia) in Rheumatoid Arthritis. The Journal of Rheumatology. 1984;11(6):814-8.
7. Buskila D, Press J, Abu-Shakra M. Fibromyalgia in Systemic Lupus Erythematosus: Prevalence and Clinical Implications. Clinical Reviews in Allergy & Immunology. 2003;25:25-8.

Journal of Health and Rehabilitation Research 2791-156X JHRR

8. Bradley LA. Pathophysiology of Fibromyalgia. The American Journal of Medicine. 2009;122(12)
.
9. Gist AC, Guymer EK, Ajani AE, Littlejohn GO. Fibromyalgia Has a High Prevalence and Impact in Cardiac Failure Patients. European Journal of Rheumatology. 2017;4(4):245.
10. Sabah ZU, Alarim RAO, Alarim MAO. The Role of Cold Exposure on Ischemic Heart Disease: A Systematic Review. 2022.
11. Grundy SM. Cholesterol and Coronary Heart Disease: A New Era. JAMA. 1986;256(20):2849-58.
12. Younis A, Alsaaty MH. Frequency of Fibromyalgia in a Sample of Iraqi Patients in Mosul With Ischemic Heart Disease. Open Access Macedonian Journal of Medical Sciences. 2021;9(B):1672-6.
13. Al-Bidri KM, Gorial FI, Al-Rawi ZS, Yousif MA. Prevalence of Fibromyalgia in Iraqi Patients With Ischemic Heart Disease. Journal of the Faculty of Medicine Baghdad. 2009;51(2):127-9.
14. Tsai P-S, Fan Y-C, Huang C-J. Fibromyalgia Is Associated With Coronary Heart Disease: A Population-Based Cohort Study. Regional Anesthesia & Pain Medicine. 2015;40(1):37-42.
15. Acosta-Manzano P, Segura-Jiménez V, Estévez-López F, Álvarez-Gallardo IC, Soriano-Maldonado A, Borges-Cosic M, et al. Do Women With Fibromyalgia Present Higher Cardiovascular Disease Risk Profile Than Healthy Women? The Al-Andalus Project. Clinical and Experimental Rheumatology. 2017;35(3).
16. Aşkın A, Güvendi E, Özkan A, Şimşek EÇ, Kocabaş U, Tosun A. Prevalence of Fibromyalgia Syndrome and Its Correlations With Arrhythmia in Patients With Palpitations. Acta Medica. 2018;60(4):146-51.
17. Buskila Y, Buskila D, Jacob G, Ablin JN. High Prevalence of Fibromyalgia Among Israeli School Teachers. Clinical and Experimental Rheumatology. 2019;37(116).
18. Arout CA, Sofuoglu M, Bastian LA, Rosenheck RA. Gender Differences in the Prevalence of Fibromyalgia and in Concomitant Medical and Psychiatric Disorders: A National Veterans Health Administration Study. Journal of Women's Health. 2018;27(8):1035-44.
19. Althobaiti NK, Amin BA, Alhamyani AD, Alzahrani SM, Alamri AM, Alhomayani FKH, et al. Prevalence of Fibromyalgia Syndrome in Taif City, Saudi Arabia. Cureus. 2022;14(12).
20. Costa AR, Freire A, Parraca JA, Silva V, Tomas-Carus P, Villafaina S. Heart Rate Variability and Salivary Biomarkers Differences Between Fibromyalgia and Healthy Participants After an Exercise Fatigue Protocol: An Experimental Study. Diagnostics. 2022;12(9):2220.