IJBPAS, June, 2021, 10(6): 1795-1802

ISSN: 2277–4998

International Journal of Biology, Pharmacy and Allied Sciences (IJBPAS)

'A Bridge Between Laboratory and Reader'

www.ijbpas.com

# GENDER PREVALENCE, AGE DISTRIBUTION AND MAIN CAUSES OF ACUTE MYOCARDIAL INFARCTION IN DIFFERENT CITIES OF PAKISTAN

**AYESHA SIDDIQ[1*], TAHREEM SIDDIQUE[2], ALI ARSHAD[3], SAMIA LATIF[4] AND ALI AHMED[5]**

1: M.Phil. Pharmacy Practice Lahore College for Women University, Lahore, Pakistan

**2:** M.Phil. Pharmacy Practice Lahore College for Women University, Lahore, Pakistan

**3:** PGR Trainee (Cardiology), Punjab Institute of Cardiology, Pakistan

**4:** M.Phil. Pharmacy Practice Lahore College for Women University, Lahore, Pakistan

**5:** PhD Scholar Pharmacy Practice Quaid e Azam University, Islamabad, Pakistan

***Corresponding Author: Ayesha Siddiq: E Mail: ghoriayesha@yahoo.com**

**Received 10th July 2020; Revised 8th Aug. 2020; Accepted 7th Sept. 2020; Available online 1st June 2021**

https://doi.org/10.31032/IJBPAS/2021/10.6.5498

## ABSTRACT

**Background:** This study was designed to evaluate the prevalence, age distribution, main symptoms and reason of acute myocardial infarction in different cities of Pakistan. The purpose of study was to identify those factors which mainly contribute to heart attack in Pakistan.

**Method:** A prospective observational study based on self-administer questionnaire was conducted on march-2018 to june-2018. Data of 100 patients was collected from different cities of Pakistan (Lahore, Sargodha, kasoor and Dera ghazi khan)**.**

**Results:** This study identifies acute myocardial infarction is more prevalent in male (63%) as compare to female (30%).This disease is more common in age group 40-60 which is (59%) , in 60-80 (26%) and (15%) with age groups 20-40 years. Further, this study shows the main symptoms during acute myocardial infarction (99%) shows left arm pain, (85%) chest pain, (82%) neck pain, (69%) back pain and (45%) weakness. This study also found the main reasons of acute myocardial infarction in different cities of Pakistan. In Lahore the main reason was

found hypertension i.e. (95%), in Sargodha the main reason was smoking i.e. (90%), in kasoor it was diabetes i.e. (70%) and in Dera Ghazi khan it was obesity i.e. (65%).

**Conclusion:** The males are more prevalent to acute myocardial infarction. The age group 40-60 suffers this disease as compare to others and the main symptoms were common as in different cities of Pakistan but the main reasons of acute myocardial infarction was not similar in different cities of Pakistan.

**Keywords: Gender Prevalence, Age Distribution, Acute Myocardial Infarction, Pakistan**

## INTRODUCTION

Acute myocardial infarction is also known as heart attack which is caused by sudden loss of oxygenation to the muscles of heart due to complete blockage of coronary artery **[1]**. After myocardial necrosis heart has diminish ability to repair itself **[2]**. In this condition patient is on risk of recurrent attack these risk factor are age, smoking, alcohol, physical activities and different co-morbidities. There should be reduction in heart muscles perfusion which cause cell necrosis **[3]**.

Even after survival of AMI patients are still on risks due to different co-morbidities like diabetes, hypertension, stroke and old age etc. In general populations, the relative risk (death, CVS outcomes, recurrent MI) were at least 30% higher 1-5 years after **[4]**. It was found from autopsy data that other co-morbidities like epilepsy, cancer, renal disease, stroke , psychiatric disorder , atherosclerosis and abdominal aorta was cause of fertility after first myocardial infarction **[5]**.

## MATERIAL AND METHODS

A prospective and observational study was conducted from March-2018 to June-2018. The data of 100 patients was collected from emergency departments of hospitals from different cities of Punjab in Pakistan. Data was collected on the basis of causes, symptoms and main cause during myocardial infarction, using a self-administered questionnaire. Participants were from four major cities of Pakistan like Lahore, Sargodha, kasoor and Dera Ghazi khan. Seven hospitals from which two was semi government and others were government. Data was selected of hundred patients who were clinically evaluated. Different hospitals were visited and collected data randomly. Statistical analysis of data was performed using SPSS-20 and results are plotted in form of bar and pie charts.

**INCLUSION AND EXCLUSION CRITERIA**

All the myocardial infarction cases were collected in the form of Performa's. Cases including were of different type of causes in different age groups. All patients having other diseases were excluded.

**RESULTS**

**Gender prevalence**

**Figure 1** illustrates the gender prevalence of acute myocardial infarction. The percentage of male is (63%) which is more prevalent to females (37%).

**Age distribution**

**Figure 2** shows most of the cases were between the age of 40 -60 i.e. (59%) then was age group of 60-80 i.e. (26%).only 15% cases were of 20-40 years.

**Symptoms of myocardial infractions**

It is found most common presentation was left arm pain (99%) followed by chest pain (85%) ,neck pain (82%), back pain (69%), weakness (45%).others symptoms were less common **(Figure 3)**

**Distribution of main causes of myocardial infarction in cities of Pakistan**

**Figure 4** elicit the occurrence of Acute Myocardial infarction in Pakistan is due to main four reasons i.e. hypertension, smoking, diabetes and obesity. In different cities, the causes of the disease were different. In Lahore, the main cause of acute myocardial infarction was hypertension. There were (95%) patients having high blood pressure during acute myocardial infarction. In Sargodha, the major cause of myocardial infarction was smoking i.e. (90%). In kasoor, (70%) of patients were diabetics and got acute myocardial infarction. In Dera Ghazi Khan (65%) were obese and having concomitant myocardial infarction.

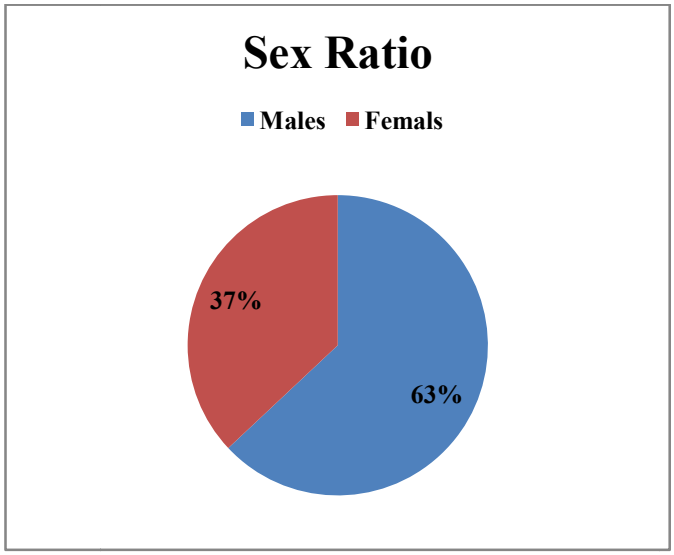


Figure 1: Gender prevalence of myocardial infarction

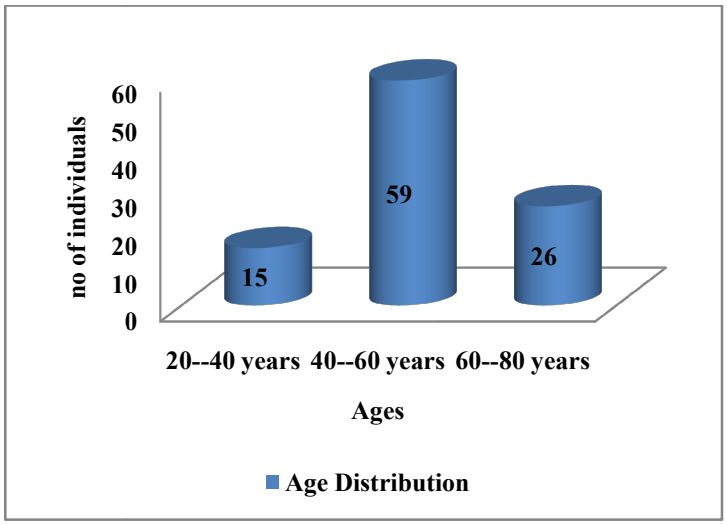


Figure 2: Age distribution of myocardial infarction

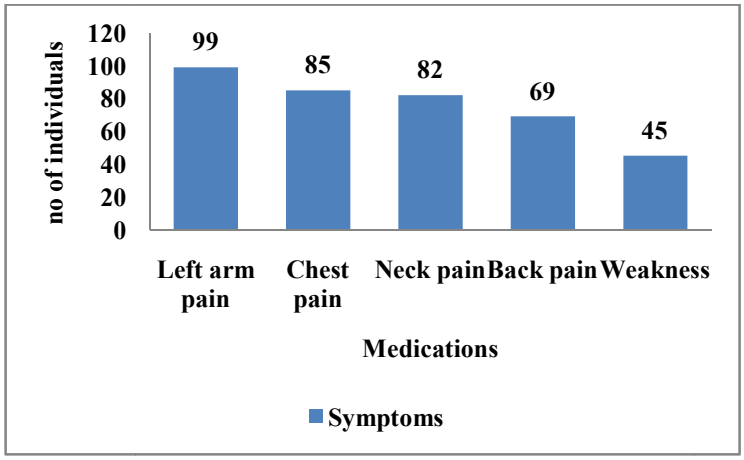

**Figure 3: Symptoms of myocardial infarction**

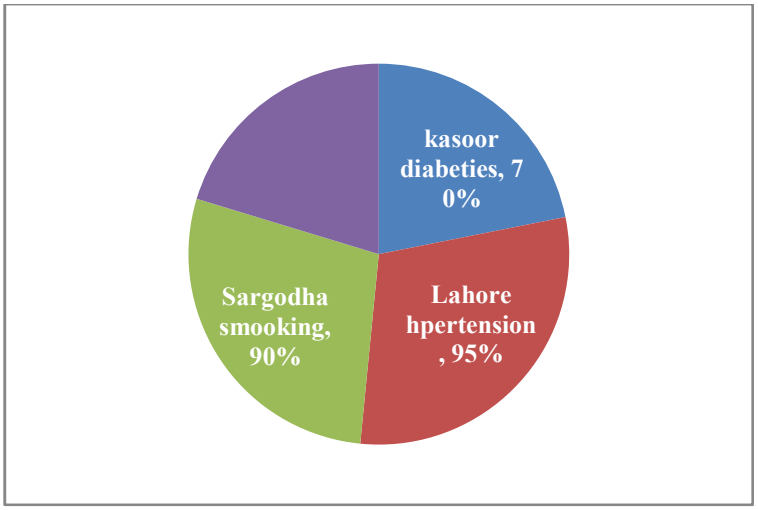


**Figure 4: Main causes of myocardial infections in cities of Pakistan**

## DISSCUSION

Myocardial infarction is one of the most prevalent diseases in Pakistan. It is a serious health problem in Pakistan Our study shows that males more affected which were (63%) men as compare to females. and most affected age group are 40-60 year of age which covered (59%). The adults (20-40%) are least affected in population that is (15%). A study in which participants were two groups: young (<45 years) and old one (>45 years). It was found that there was (16.1%) were young with acute myocardial infarction and (93.1%) were old patients **[6]**. Presenting symptoms populations chest pain, left arm pain weakness vomiting were not different from other cities of Pakistan and south Asian adults. The causes of myocardial infarction in Pakistan are also very similar to other countries in world. In Lahore the main cause of myocardial infarction was hypertension, according to our study there are (95%) of patients got heart attack due to high blood pressure. A study proclaimed that there is strong association between hypertension and CVs and cerebrospinal disorder **[7]**.

A retrospective cohort study shows that there is significant association between mortality and smoking status in patients with acute ST-segment elevation myocardial infarction **[8]**. A study in which 257 subjects was survived their first AMI ≤ 35 year of age it was found that smoking was the strongest independent predictor of Acute Myocardial infarction which was (93.7%) prevalent **[9]**. There was (30% to50%) decrease in acute MI and mortality due to smoking cessation. But smoking after AMI will leads toward angina

and worsen the health related quality of life (HRQOL) **[10]**. In Sargodha it is found that the (90%) of patients were smoker who has got myocardial infarction. Smoking an established risk factor for acute myocardial infarction is associated with endothelial dysfunction and can precipitate coronary spasm.

The prevalence of diabetes with acute MI is higher in females (14.9%) as compare to male (7.6%) **[11]**. In Pakistan there are (70%) of patients in kasoor got myocardial infarction due diabetes. A study analysis on patients with heart failure with preserved ejection fraction shows that patients with diabetes and cardiac complications are on higher risks of hospitalization **[12]**.

Obesity is worldwide important issue which has bad consequences on cardiovascular diseases as it causes metabolic issues like high level of triglycerides, co-morbidities like diabetes and high blood pressure **[13]**. According to our study there were (65%) of patients were obese with heart attack.

## CONCLUSION

Acute Myocardial Infarction count is increasing in Pakistan. To tackle the problem community awareness is necessary about the possible causes. Preventive measures and supportive guidelines about the therapy are necessary at community level. Based on our findings, to restrict the consumption of ghee, smoking cessation programs and the promotion of exercise and other lifestyle and dietary measures to improve glucose tolerance, cholesterol screening programs, and improving the level of education are likely to have a profound effect on the burden of premature ischemic heart disease in Pakistan.

## REFRENCES

**[1]** Wu, J. C.Acute Myocardial Infarction. Essential Echocardiography: A Companion to Braunwald's Heart Disease E-Book, 2018, 195.

**[2]** Martin-Rendon, E., Brunskill, S. J., Hyde, C. J., Stanworth, S. J., Mathur, A., & Watt, S. M. Autologous bone marrow stem cells to treat acute myocardial infarction: a systematic review. European heart journal, 2008, 29(15), 1807-1818.

**[3]** Boateng, S., & Sanborn, T. Acute myocardial infarction. Disease-a-Month, 2013,59(3), 83-96.

**[4]** Johansson, S., Rosengren, A., Young, K., & Jennings, E. Mortality and morbidity trends after the first year in survivors of acute myocardial infarction: a systematic review. BMC

cardiovascular disorders, 2017, 17(1), 53.

**[5]** Quintana, H. K., Janszky, I., Kanar, A., Gigante, B., Druid, H., Ahlbom, A, Leander, K. (2018). Comorbidities in relation to fatality of first myocardial infarction. Cardiovascular Pathology, 2018, 32, 32-37.

**[6]** Saleheen, D., & Frossard, P. CAD risk factors and acute myocardial infarction in Pakistan. Acta cardiologica, 2004, 59(4), 417-424.

**[7]** Psaty, B. M., Furberg, C. D., Kuller, L. H., Cushman, M., Savage, P. J., Levine, D., . . . Lumley, T. Association between blood pressure level and the risk of myocardial infarction, stroke, and total mortality: the cardiovascular health study. Archives of internal medicine, 2001, 161(9), 1183-1192.

**[8]** Steele, L., Lloyd, A., Fotheringham, J., Sultan, A., Iqbal, J., & Grech, E. D. A retrospective cohort study of the association between smoking and mortality after acute ST-segment elevation myocardial infarction. Postgraduate Medical Journal, postgradmedj- 2017, 2016-134605.

**[9]** Rallidis, L. S., Sakadakis, E. A., Tympas, K., Varounis, C., Zolindaki, M., Dagres, N., & Lekakis, J. The impact of smoking on long-term outcome of patients with premature (≤ 35years) ST-segment elevation acute myocardial infarction. American heart journal, 2015 ,169(3), 356-362.

**[10]** Buchanan, D. M., Arnold, S. V., Gosch, K. L., Jones, P. G., Longmore, L. S., Spertus, J. A., & Cresci, S.Association of smoking status with angina and health-related quality of life after acute myocardial infarction. Circulation: Cardiovascular Quality and Outcomes, 2015,8(5), 493-500.

**[11]** Rytter, L., Troelsen, S., & Beck-Nielsen, H. Prevalence and mortality of acute myocardial infarction in patients with diabetes. Diabetes Care, 1985, 8(3), 230-234.

**[12]** Sandesara, P. B., O'Neal, W. T., Kelli, H. M., Samman-Tahhan, A., Hammadah, M., Quyyumi, A. A., & Sperling, L. S. The prognostic significance of diabetes and microvascular complications in patients with heart failure with preserved ejection fraction. Diabetes Care, 2018,41(1),150-155.

**[13]** Varbo, A., Freiberg, J. J., & Nordestgaard, B. G. Remnant Cholesterol and Myocardial Infarction in Normal Weight, Overweight, and Obese Individuals from the Copenhagen General Population Study. Clinical chemistry, 2018 ,64(1), 219-230.