



CODEN [USA]: IAJPBB

ISSN: 2349-7750

INDO AMERICAN JOURNAL OF  
**PHARMACEUTICAL SCIENCES**

<http://doi.org/10.5281/zenodo.3943773>

Available online at: <http://www.iajps.com>

Research Article

## ASSOCIATION OF OBESITY WITH MYOCARDIAL INFARCTION IN 40-60 YEARS OF AGE IN OF FAISALABAD

<sup>1</sup>Muhammad Faheem\*, <sup>2</sup>Marryam Amjad, <sup>3</sup>Waqas Nasim

<sup>1</sup>RHC 153 RB Sahianwala, Faisalabad, Pakistan, Email: Faheemagri@gmail.com, <sup>2</sup>DHQ Hospital Faisalabad, Pakistan, Email: Marryamamjad193@yahoo.com, <sup>3</sup>DHQ Hospital Faisalabad, Email: Drwellsaid@yahoo.com.

**Article Received:** May 2020

**Accepted:** June 2020

**Published:** July 2020

**Abstract:**

**Introduction:** Obesity is a condition where a person has accumulated so much body fat that it might have a negative effect on their health. If a person's bodyweight is at least 20% higher than it should be, he or she is considered obese. If your Body Mass Index (BMI) is between 25 and 29.9 you are considered overweight. Obesity is a common risk factor for several subtypes of cardiovascular disease (CVD), including coronary heart disease (CHD), stroke, Myocardial infarction and heart failure (HF).

**Objective:** The objectives of our study were

**1:** To study the prevalence of Myocardial Infarction among obese people

**2:** To study comorbidities of obesity

**Methodology:**

**Settings:** Cardiology Wards of Allied Hospital Faisalabad, Faisalabad Institute of Cardiology, District Health Quarters Faisalabad

**Duration:** From January 2017 to August 2017

**Sample size:** This research consists of 3 groups of patients, Total of 60 patients were included in this research

**Sampling technique:** Non-probability sampling technique

**Inclusion criteria:** Patients of Myocardial infarction of age ranging from 40-60 years were included in this research

**Exclusion criteria:** Patients below and above the age of 40-60 years were not a part of this research

**STUDY DESIGN:** Descriptive Cross-Sectional study

**Results:** 53% that is 32 out of 60 patients with myocardial infarction were obese with BMI greater than or equal to 25 and waist circumference greater than reference range. 26 out of 60 patients had history of Myocardial infarction in their family. Only 36% that is 22 out of 60 patients were involved in physical exercise/walk but these many of these 36% were also not very punctual in this routine and this sedentary lifestyle is the one of the major causes of obesity

**Conclusion:** Obesity is significantly associated with Acute Myocardial Infarction. These findings support the current emphasis on controlling obesity to prevent rapidly increasing events of Myocardial Infarction

**Key Words:** Obesity, Body mass index, Waist circumference, Waist to hip ratio

**Corresponding author:**

**Muhammad Faheem,**  
RHC 153 RB Sahianwala,  
Faisalabad, Pakistan,  
Email: [Faheemagri@gmail.com](mailto:Faheemagri@gmail.com)

QR code



Please cite this article in press Muhammad Faheem et al, *Association Of Obesity With Myocardial Infarction In 40-60 Years Of Age In Of Faisalabad., Indo Am. J. P. Sci, 2020; 07(07).*

**INTRODUCTION:**

Obesity is a condition where a person has accumulated so much body fat that it might have a negative effect on their health. If a person's bodyweight is at least 20% higher than it should be, he or she is considered obese. If your Body Mass Index (BMI) is between 25 and 29.9 you are considered overweight [1].

Obesity is a common risk factor for several subtypes of cardiovascular disease (CVD), including coronary heart disease (CHD), stroke, Myocardial infarction (MI) and heart failure (HF); however, increasing evidence suggests that obesity leads to various subtypes of CVD through multiple distinct pathways. Some traditional risk factors, including hypertension, diabetes mellitus, and dyslipidemia, are established as mediators between obesity and atherosclerotic vascular disease. Although weight management is a fundamental component of CVD prevention, most of the persons with obesity in the general population do not achieve enough and sustained weight loss. Consequently, there is great emphasis on controlling the traditional CVD risk factors resulting from obesity as a strategy for reducing cardiovascular risk. Nevertheless, uniform approaches to the control of cardiovascular risk factors may not have the same impact on the likelihood of developing different subtypes of CVD [2].

MI was common in the males at the age of 41 - 60 years as compared to the females ( $P = 0.015$ ) [3]. Patients with a positive parental history of CHD experienced MI at a younger age ( $P = 0.0001$ ) at a body mass index (BMI)  $\leq 25$  kg/m<sup>2</sup>. Sedentary lifestyle (70%) and smoking (60%) had a male predominance. Hypertension accounted for nearly 37%, hyperlipidemia 26%, and diabetes 19.4% of the rural and urban subjects ( $P < 0.01$ ). High-density lipoprotein cholesterol decreased (up to 34 mg/dl), while low-density lipoprotein cholesterol and hypertension increased with age [3].

Higher BMI, positive family history, smoking, hypertension, hyperlipidemia, and diabetes were the strong predictors of MI in North Punjab, Pakistan. Preventive efforts are needed to start early in life and continue throughout the life course [3].

Over  $\approx 23$  years of follow-up, there were 2235 HF events, 1653 CHD events, and 986 strokes. For each subtype of CVD, higher BMI was associated with a greater adjusted incidence of events at mean levels of demographic variables, smoking, alcohol use, and physical activity. The incidence rate difference for severe obesity versus normal weight (per 1000 person-years) was 12.1 for HF, 4.0 for CHD, and 2.7 for stroke. The median time to incident events for each CVD subtype was 15.7 years for HF, 12.7 years for CHD, and 13.7 years for stroke [4].

Among 4131 men and women with suspected stable angina pectoris, obese men carried an 80% and 60% higher risk of AMI and CV death, respectively, compared to normal weight men [4].

Association between obesity & in-hospital mortality among patients with cardiogenic shock (CS) complicating AMI (N=290,894) was retrospectively studied. Obese patients (n=25,835, 8.9%) had more cardiovascular (CV) comorbidities & more likely to receive revascularization than non-obese patients (73.0% vs. 63.4%) [4].

**METHODOLOGY:**

**Settings:** Patients from Cardiology Wards of Allied Hospital Faisalabad, Faisalabad Institute of Cardiology and District Health Quarters Faisalabad were part of this study.

**Duration:** From January 2017 to August 2017.

**Sample size:** This research consists of 3 groups of patients, Total of 60 patients were included in this research

**Sampling technique:** Non-probability sampling technique

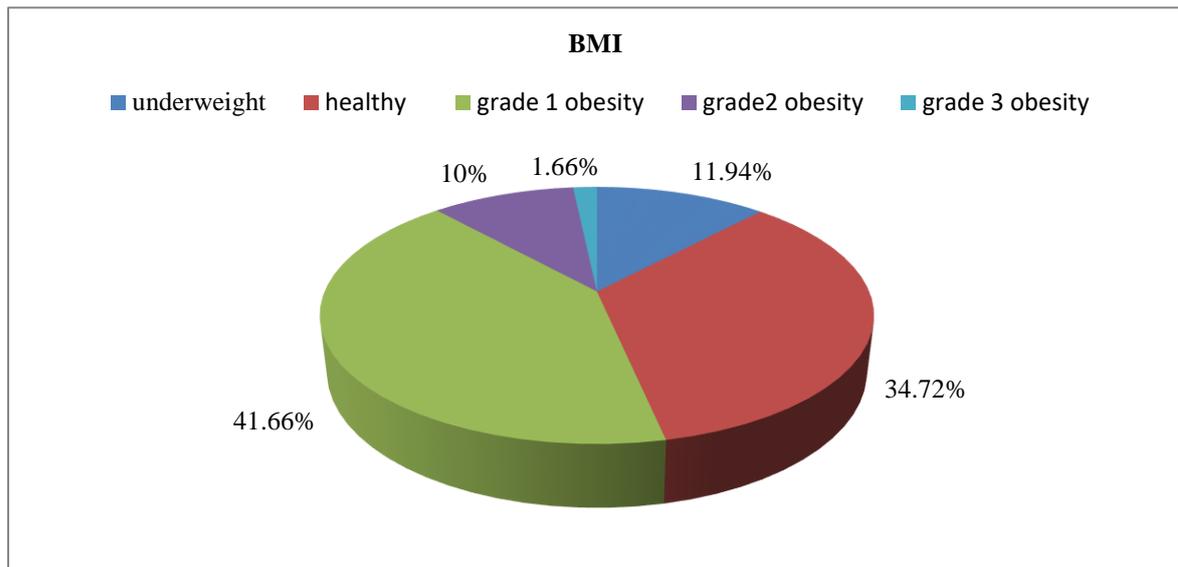
**Inclusion criteria:** Patients of Myocardial infarction of age ranging from 40-60 years were included in this research

**Exclusion criteria:** Patients below and above the age of 40-60 years were not a part of this research

**Study design:** Descriptive Cross-Sectional study

**RESULTS:**

53% of patients that is 32 out of 60 patients with Myocardial Infarction were obese.

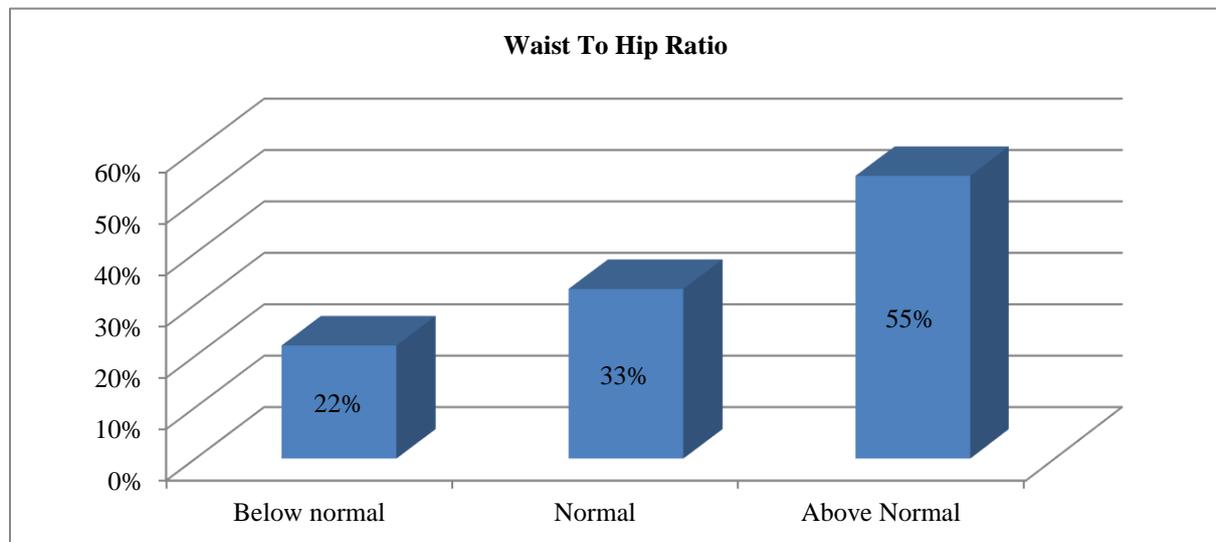


**Figure 1:** BMI of participated patients 53% patients that is 32 of 60 had BMI greater than or equal to 25

Waist circumference					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below reference range	9	15.0	15.0	15.0
	within reference range	19	31.7	31.7	46.7
	above reference range	32	53.3	<b>53.3</b>	100.0
	Total	60	100.0	100.0	

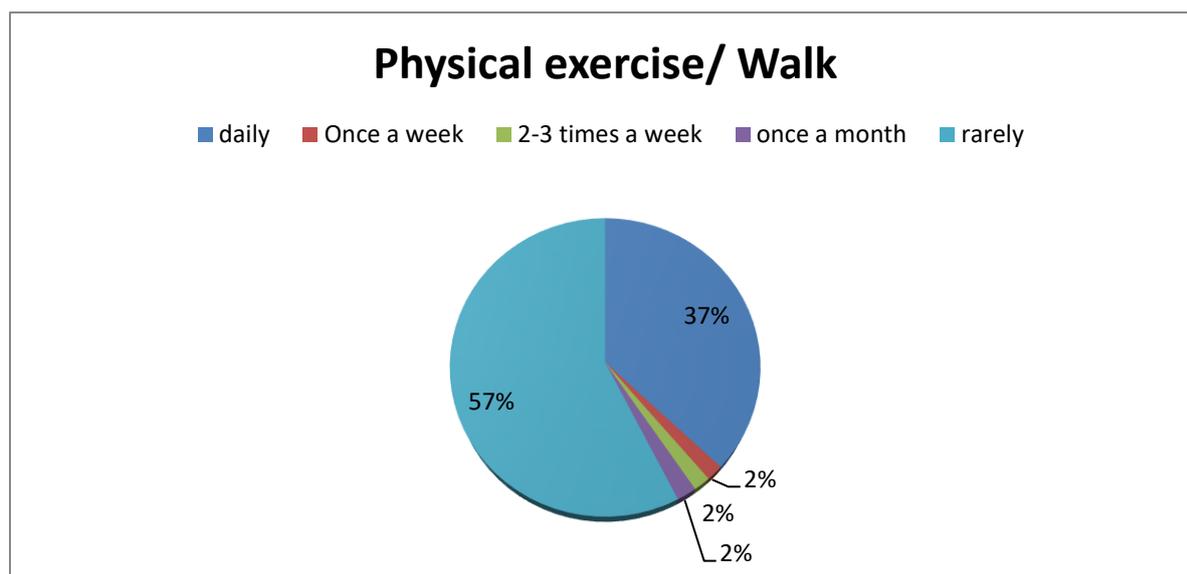
**Figure 2: Waist circumference of participated patients**

53.3% of patients with Myocardial Infarction have waist circumference above the reference range i.e. >35 inches (women), >40 inches (men).



**Figure 2:** Waist to hip ratio of participated patients

Waist to hip ratio of about 33% of participated patients are within the reference range, 55% of the patients had waist to hip ratio above the normal range and 22% of them lie under the reference range About 43.3% of patients had positive family history while the rest of 56.7% had no history of MI in their family 37% of the patients chosen for this survey walk daily, 57% of the patients involved in physical activities rarely or never.



**Figure 3:** Physical Activities

#### DISCUSSION:

In this study we compared the relationship of higher BMI with incident of Myocardial Infarction. We found that overweight status and obesity were most strongly associated with Myocardial infarction. In our study we found that 53% of patients with myocardial infarction were obese i.e. with BMI greater than or equal to 25 and waist circumference greater than reference range. 26 out of 60 patients had history of Myocardial infarction in their family. Only 36% that is 22 out of 60 patients were involved in physical exercise/walk but many of these 36% were also not very punctual in this routine and this sedentary lifestyle is the one of the major causes of obesity.

In our study we measure the BMI of patients admitted in cardiac Care Units of three major hospitals of the city, out of 60 patients 32 had BMI greater than or equal to 25 which shows association of obesity with Myocardial Infarction. This concept has been proved in many other studies like in one of the studies it is proved that “with increasing BMI values, the risk of myocardial infarction increased. Patients in the highest BMI quintile ( $>28.2$  in women or  $>28.6$  in men) had a 44% increased risk of myocardial infarction compared with those with a BMI in the lowest quintile ( $22.7$  in women or  $22.5$  in men)” [5].

Measurement of waist circumference is one the major tool in declaring someone obese, in our study about 33 of patients had waist circumference above the reference range. One of the studies says that for men, if the measurement is greater than 39.6 inches, you have a significant risk that you will have a myocardial infarction. For women, if the measurement is greater than 39 inches, you have a

significant risk that you will have a myocardial infarction<sup>5</sup>. In this study, waist circumference was strongly related to myocardial infarction risk. This persisted even after adjustment for BMI and height. The highest waist circumference ( $>97.4$  cm [39 inches] women and  $>99.0$  cm [39.6 inches] males) compared to the lowest quintile ( $<75.8$ cm [30 inches] in women and  $<80.5$  cm [32.2 inches] in men) was 77% greater to have a myocardial infarction [6]. In another study it said that waist circumference was divided into five categories or quintiles during data analysis as part of the IDEA study. Men in the highest waist circumference quintile ( $\geq 107$ cm) had 2.2 times more cardiovascular disease than those in the lowest quintile ( $<84$ cm); for women, when the most abdominally obese quintile were compared to the least abdominally obese quintile ( $\geq 101$  versus  $<76$ cm), the ratio was 2.6 [6].

Increased waist to hip ratio is strongly associated with myocardial Infarction in our study we found that 55% of total participated patients had increased waist to hip ratio. One the study says that waist circumference, waist–hip ratio and waist–height ratio, have been suggested as being superior to BMI in predicting CVD risk. This is based largely on the rationale that increased visceral adipose tissue is associated with a range of metabolic abnormalities, including decreased glucose tolerance, reduced insulin sensitivity and adverse lipid profiles, which are risk factors for type 2 Diabetes and CVD [7].

#### Limitations:

As this research is conducted in a very short period of time that’s why it was not possible to cover large

area of population. Due to small sample size this research is not applicable to whole population.

**Recommendation:**

It is proved to major extent that obesity is one of the risk factor of Myocardial Infarction, so it is recommended that we should take all necessary steps to avoid obesity by having balanced diet and increasing several physical activities in our life style because sedentary life style is not only cause of obesity but also associated with many diseases.

**CONCLUSION:**

Compared with normal weight subjects, obese individuals had an increased risk of AMI. Weight management is likely critical for MI prevention. Findings in this study and many other studies shows that obesity is significantly associated with many diseases especially CVD's. Different steps should be taken to control risk factors of Myocardial Infarction especially obesity which now become a serious issue in west and in our society, obesity is also increasing rapidly due to our sedentary lifestyles like food habits and lack of physical exercises.

**REFERENCES:**

1. Hannah Nichol. What is obesity?, Medical News Today, 2016, <http://www.medicalnewstoday.com/info/obesity>
2. N Dumele CE, Matsushita K, Lazo M, Bello N, Blumenthal RS, Aerstenblith G, et al. Obesity and Subtypes of Incident Cardiovascular Disease, Journal of the American Heart Association, August 2016, Volume 5, Issue 8, 1
3. N Dumele CE, Matsushita K, Lazo M, Bello N, Blumenthal RS, Aerstenblith G, et al. Obesity and Subtypes of Incident Cardiovascular Disease, Journal of the American Heart Association, August 2016, Volume 5, Issue 8, 1
4. Chatterjee K, Gupta T, Goyal A, et al. Association of obesity with In-Hospital mortality of Cardiogenic shock complicating Acute Myocardial infarction. Am J Cardiol. 2017
5. Yusuf S, Hawken S, Ounpuu S, Bautista L, Commerford P, et al. Obesity and the risk of myocardial infarction in 27,000 participants from 52 countries: a case-control study, The Lancet, November 11, Volume 366, Issue 9497
6. Health Improvement through Weight management and waist reduction , Cut The Waist 2009-2011 , <http://www.cutthewaist.com/importance.html>
7. Waist circumference and waist-hip ratio: report of a WHO expert consultation, Geneva, 8-11 December 2008