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ASSESS SELECTED ANTHROPOMETRIC MEASURMENT AND ITS ASSOCIATION WITH ACUTE MYOCARDIAL INFARCTION.

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Abstract

Introduction

Health is that the degree of valuable and additionally metabolic intensity of a living being. In humans, it's the overall condition of an individual within the mind, body and spirit, sometimes desiring to be free from illness, injury or pain .The World Health Organization (WHO) outlined health in its broader sense in 1946 as "a state of complete physical, mental, and social well-being and not just the absence of illness or bad condition.[1]

Methods

A Quantitative approach is used. Quantitative methods emphasize objective measurements and the statistical, mathematical, or numerical analysis of data collected through polls, questionnaires, and surveys, or by manipulating pre-existing statistical data using computational techniques. As this study involves assessment of anthropometric measurements and its association with AMI the researcher used Correlational research design. Study Population of the study comprises of patients who are admitted in CATH Lab ICU and came for the follow up in OPD and are diagnosed with AMI. The sample chosen were of 81 samples, which were admitted in CATH Lab ICU and came for the follow up in OPD and are diagnosed with AMI.

Conclusion

There was significant difference between WH ratio, BMI and AMI Variables for different interventions ($p<0.05$).It was found that there was significant association between S.Cholesterol, S.Triglyceride, S.Cholesterol VLDL and S.Cholesterol HDL with age groups and also there was significant association between socio economic status and AMI.

Keywords: Anthropometric, Acute Myocardial infarction, Measurement.

INTRODUCTION:

Illness (sometimes observed as ill-health or ailment) could be a state of poor health. illness is typically thought-about another word for illness. A debilitation of the customary condition of an individual's being that hinders or changes its significant capacities is comprehended as illness. It includes communicable and non-disease.[1]

Four anthropometric measures are commonly registered in the health care: height, weight,hip circumference (hip) and waist circumference (waist). Additionally, two quotients derived from these measures, body mass index and waist-to-hip ratio, are often used. Obesity is a major risk factor for several cardiovascular diseases (CVD), including an increased risk of heart failure (HF). Obesity is associated with a higher risk of hypertension insulin resistance and diabetes mellitus, inflammation, status and lifestyle all of which could increase the cardiovascular risk.[2]

The prevalence and socio-economic influence of obesity are dramatically increasing over the globe. In general, obesity is well known to be related to aggravated cardiovascular disease. However, several studies showed restrictive impacts on cardiovascular outcomes in patients undergoing Coronary angioplasty.[3] Clinical effects of body mass index (BMI) after coronary angioplasty in acute myocardial infarction (AMI) are still controversial. Some previous reports revealed that obesity paradox was observed but not reached to the significant difference after the multivariate analysis. whereas other studies showed that obese patients with AMI had an improved prognosis after primary coronary angioplasty.[4]

A central fat pattern has adverse health implications in both children and adults. Because adiposity tracks from childhood into adulthood, the ability of simple anthropometric techniques to correctly measure truncal adiposity in childhood needs to be assessed.[5]

CVA, including transient ischemic attacks (TIA), as well as ischemic and hemorrhagic strokes, represent the second most prevalent causes of mortality worldwide,4,5 and are considered to be the main cause of disability in the elderly.6–8 One-third of patients experiencing a stroke show high levels of disability after 1 year.9,10 About 7%–12% of patients who experienced a previous TIA will experience an ischemic stroke within 1 year (with an additional 4%–7% of patients experiencing strokes after 5 years from the initial TIA).[6]

Metabolic Syndrome is a common condition worldwide and has been associated with increased risk for other comorbidities notably cardiovascular events and diabetes mellitus. It is initially associated with obesity and insulin resistance and over the years, different criteria were developed for the diagnosis of this condition namely NCEP III, WHO, IDF, NCEP/ATP III-AHA/NHLBI, but this basically includes 5 main criteria: abdominal obesity, elevated triglycerides, low High Density Lipoprotein, elevated fasting blood sugar and hypertension.[7]

Acute myocardial infarction is a life-threatening condition that occurs when blood flow to the heart muscle is cut off, causing tissue damage. This is the result of a blockage in one or more of the arteries. A blockage can develop due to a buildup of plaque, a substance mostly made of cholesterol, fat and cellular products.[8]

Heart is the main organ in our cardiovascular system, that includes different types of blood vessels. Arteries are the most important vessels in our body. These arteries take oxygen-rich blood to all

body parts and all of your vital organs. Heart muscles are supplies oxygen rich blood by the coronary arteries. The blood flow to your heart can decrease significantly or stop completely, when these arteries become blocked or narrowed due to a buildup of plaque. This can cause a heart attack. Several factors may lead to a blockage in the coronary arteries.[9]

Problem statement: -

"A study to assess selected anthropometric measurement and its association with acute myocardial infarction."

Objectives of study: -

1. To find out association between waist hip ratio (W:H ratio) and acute myocardial infraction.
2. To find out association between body mass index (BMI) and acute myocardial infraction.
3. To find out association between socio demographic variables and acute myocardial infraction.

Methods:

In this present study Quantitative approach is used. Quantitative methods emphasize objective measurements and the statistical, mathematical, or numerical analysis of data collected through polls, questionnaires, and surveys, or by manipulating pre-existing statistical data using computational techniques. As this study involves assessment of anthropometric measurements and its association with AMI the researcher used Correlational research design. Study Population of the study comprises of patients who are admitted in CATH Lab ICU and came for the follow up in OPD and are diagnosed with AMI. The sample chosen were of 81 samples, which were admitted in CATH Lab ICU and came for the follow up in OPD and are diagnosed with AMI.

Results:

It was found that there was significant association between all AMI variables and WH ratio.S.Cholesterol, Triglyceride, S.Cholesterol VLDL and S.Cholesterol LDL were significantly higher for overweight patients ($p<0.001$) than normal patients and vice versa for S.Cholesterol HDL ($p<0.001$).It was found that there was significant association between all AMI variables and BMI.S.Cholesterol, S.Triglyceride, S.Cholesterol VLDL and S.Cholesterol LDL were significantly higher for obese patients followed by overweight patients then normal weight and lastly underweight patients ($p<0.001$) and vice versa for S.Cholesterol HDL ($p<0.001$).It was found that there was significant association between S.Cholesterol, S.Triglyceride, S.Cholesterol VLDL and S.Cholesterol HDL with age groups.

SECTION A: DEMOGRAPHIC VARIABLES:

Sr. No.	Demographic variables	Frequency	Percent
1	**Age groups**		
	<40 years	15	18.5
	41-50 years	14	17.3
	51-60 years	18	22.2
	61 and above years	34	42
2	**Sex**		
	Males	40	49.4

3	Females	41	50.6
	Religion		
	Hindu	54	66.7
	Muslim	5	6.2
	Christian	22	27.2
4	**Marital Status**		
	Married	72	88.9
	Unmarried	9	11.1
5	**Type of family**		
	Joint family	28	34.6
	Nuclear family	53	65.4
6	**Residential Background**		
	Urban area	33	40.7
	Rural area	48	59.3
7	**Educational Status**		
	Illiterate	24	29.6
	Primary school	21	25.9
	Higher secondary	36	44.4
8	**Occupation**		
	Farmer	18	22.2
	Worker	13	16
	Buisness	35	43.2
	Government servnt	15	18.5
9	**Socio Economic Status**		
	Rs. 5000- Rs. 10000	12	14.8
	Rs. 10001- Rs. 15000	42	51.9
	Above Rs. 15000	27	33.3
10	**Family History of AMI**		
	Yes	7	8.6
	No	74	91.4
Total		**81**	**100**

Section B: Findings related to association between waist hip ratio (W: H ratio) and acute myocardial infraction.

Unpaired t test was done to check the association between waist hip ratio and AMI.

It was found that there was significant association between all AMI variables and WH ratio.

S. Cholesterol, S. Triglyceride, S. Cholesterol VLDL and S. Cholesterol LDL were significantly higher for overweight patients ($p<0.001$) than normal patients and vice versa for S. Cholesterol HDL ($p<0.001$).

AMI variables	Waist Hip ratio	n	Mean	Std. Deviation	t statistic	p value
S. Cholesterol	Normal weight	73	263.5	51.4	3.9	**<0.001**
	Overweight	8	296.1	16.0		
S. Triglyceride	Normal weight	73	284.8	107.2	3.6	**<0.001**
	Overweight	8	356.5	44.4		
S. Cholesterol VLDL	Normal weight	73	42.9	13.5	2.8	**<0.001**
	Overweight	8	50.5	6.4		
S. Cholesterol LDL	Normal weight	73	172.1	29.9	5.2	**<0.001**
	Overweight	8	200.0	11.6		
S. Cholesterol HDL	Normal weight	73	35.4	18.0	3.6	**<0.001**
	Overweight	8	24.4	6.1		

Section C: Findings related to association between body mass index (BMI) and acute myocardial infraction.

One way ANOVA was done to compare between BMI and AMI. It was found that there was significant association between all AMI variables and BMI. S.Cholesterol, S. Triglyceride, S.Cholesterol VLDL and S.Cholesterol LDL were significantly higher for obese patients followed by overweight patients then normal weight and lastly underweight patients ($p<0.001$) and vice versa for S.Cholesterol HDL ($p<0.001$).

Body Mass Index	N	Mean	Std. Deviation	F statistic	p value
	S. Cholesterol				
Underweight	1	180.0	Nil	34.9	**<0.001**
Normal weight	24	212.3	39.5		
Overweight	42	288.8	30.4		
Obese	14	300.4	28.9		
	S. Triglyceride				
Underweight	1	148.0	Nil	32.7	**<0.001**
Normal weight	24	177.7	82.0		
Overweight	42	336.2	68.3		
Obese	14	365.3	55.8		
	S. Cholesterol VLDL				
Underweight	1	24.0	Nil	22.3	**<0.001**
Normal weight	24	30.7	8.4		
Overweight	42	48.9	10.7		
Obese	14	51.4	9.1		
	S. Cholesterol LDL				
Underweight	1	101.0	Nil	35.3	**<0.001**

Normal weight	24	143.9	25.8		
Overweight	42	187.7	17.5		
Obese	14	195.0	12.2		
	S. Cholesterol HDL				
Underweight	1	65.0	Nil	33.2	**<0.001**
Normal weight	24	53.3	17.5		
Overweight	42	25.5	9.0		
Obese	14	26.1	4.6		

Summary

The primary aim of the study was to assess the selected anthropometric measurement and its association with acute myocardial infarction among patients admitted in ICU's of tertiary care hospital in Karad city.

Experimental approach was used to evaluate the association of selected anthropometric measurement with acute myocardial infarction among patients admitted in ICU's of tertiary care hospital in Karad city.

The collected data was organized, tabulated, analyzed and interpreted using descriptive and inferential statistics. Descriptive Statistics used were frequencies, percentage, mean and Std. deviation to describe the data. Inferential Statistics used to test the hypothesis and to draw conclusions were:

Unpaired t test and One way ANOVA followed by Tukey's Post comparison test was done to check whether there is association of selected anthropometric measurement with acute myocardial infarction among patients admitted in ICU's of tertiary care hospital in Karad city.

DISCUSSION:

The results were supported by many of the studies.

Canto JG, Shlipak MG, Rogers WJ, et al. (2000) Among the patients diagnosed as having MI, 142,445 (33%) didn't have chest pain on presentation to the hospital. This group of MI patients was, on the average , 7 years older than those with pain (74.2 vs 66.9 years), with a better proportion of women (49.0% vs 38.0%) and patients with DM (32.6% vs 25.4%) or prior coronary failure (26.4% vs 12.3%). Also, MI patients without pain had a longer delay before hospital presentation (mean, 7.9 vs 5.3 hours), were less likely to be diagnosed as having confirmed MI at the time of admission (22.2% vs 50.3%), and were less likely to receive thrombolysis or primary angioplasty (25.3% vs 74.0%), aspirin (60.4% vs 84.5%), β-blockers (28.0% vs 48.0%), or heparin (53.4% vs 83.2%). myocardial infarct patients without chest pain had a 23.3% in-hospital deathrate compared with 9.3% among patients with pain (adjusted odds ratio for mortality, 2.21 [95% confidence interval, 2.17-2.26]).[17] It was concluded that patients without chest pain on presentation represent a large segment of the MI population and are at increased risk for delays in seeking medical attention, less aggressive treatments, and in-hospital mortality.[17]

Vaccarino V, Krumholz HM, Yarzebski J, Gore JM, Goldberg RJ (2001) The overall 2-year mortality rate was higher in women (28.9%) than in men (19.6%). When patients were examined by age bracket , however, only women younger than 60 years old had a higher mortality rate than men of similar age. The sex difference decreased with increasing age; among the oldest patients, women had a lower deathrate than men (P = 0.009 for the interaction between sex and age). This relationship wasn't affected by adjustment for demographic characteristics and medical history, clinical characteristics, and hospital and discharge treatments; the hazard of 2-year death for ladies compared with men increased 15.4% (95% CI, 4.3% to 27.6%) for each 10-year decrease in age. In absolute terms, after adjustment for demographic characteristics and medical record , among patients younger than 60 years old women were at greater risk than men (risk difference, 1.8 percentage points). At older ages, however, women were at lower risk than men.[16]

It was concluded that younger, but not older, women who survive hospitalization for myocardial infarct have a higher long-term mortality rate than men. This provides additional evidence that younger ladies with myocardial infarction are at greater risk for death than men.[16]

Conclusion:

Finding of the study revealed that there was significant difference between WH ratio, BMI and AMI Variables for different interventions ($p<0.05$).It was found that there was significant association between S.Cholesterol, S.Triglyceride, S.Cholesterol VLDL and S.Cholesterol HDL with age groups and also there was significant association between socio economic status and AMI.

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