

Original Research Article

Abdominal obesity in primary care

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Received: 03 June 2017

Revised: 13 June 2017

Accepted: 17 June 2017

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ABSTRACT

Background: Obesity is one of the important challenge in primary care. Abdominal obesity is associated with future cardiovascular disease when compared to non-obese individuals. The objective was to study the prevalence of abdominal obesity in patients attending primary care physician and to analyse abdominal obesity across different age groups and gender.

Methods: The study was done as cross-sectional study at primary care centres in and around Pondicherry. Patients visiting primary care physician were included in the study. All adult patients of age more than 18 years, of both sexes visiting the primary care physician were included in study. Pregnant women, patients with abdomen diseases and patients those who are not willing to give written consent for participation in the study were excluded from the study. Demographic profile, anthropometric measurements were recorded. Abdominal circumference of all patients were recorded using a standard measuring tape. Abdominal obesity was diagnosed when the abdominal circumference was more than 90 centimetres in male and more than 80 centimetres in female.

Results: A total number of 1030 patients were included in the study. There were 189 patients in age group 60-69. Females 535 outnumbered males 484. In the age group 50-59, 33 (40%) of males and 45 (44%) of females had increased abdominal circumference more than 90 centimetres in males and 80 centimetres in females. Across all age groups 121 (24%) males had abdominal circumference more than 90 centimetres in the study and 147 (28%) females had abdominal circumference more than 80 centimetres.

Conclusions: Abdominal obesity is common at primary care level. The prevalence of abdominal obesity is more in females when compared with males. Hence all primary care physicians have to be stressed about the importance of abdominal obesity.

Keywords: Abdominal obesity, Cardiovascular disease, Primary care

INTRODUCTION

Obesity represents a rapidly growing threat for health problems in both developing and developed countries according to world health organization.^{1,2} Obesity is associated with increased morbidity and mortality.³⁻⁵ The prevalence of obesity has reached epidemic level all over the world Body Mass Index as measured from height and

weight is the most widely used to diagnose obesity.^{6,7} But body mass index has limitations on defining the body mass index is not accurate way of measurement of body fat.⁸ Abdominal obesity is more important when compared to generalised obesity as a risk factor for cardiovascular disease.⁹ Data from the large-scale Inter heart study showed abdominal obesity is more related to acute myocardial infarction and it is better predictor than body mass index.¹⁰ Abdominal obesity is more practical

way of measuring obesity and fat distribution.¹¹ Though various studies stress the importance of abdominal obesity in clinical practice in assessing and to prevent future cardiovascular diseases, the practice of measuring abdominal circumference is lacking among primary care physicians. Hence, we wanted to study the prevalence of abdominal obesity at primary care level. We, in our study have used the International Diabetes Federation consensus for identifying abdominal obesity as it gives specific guidelines with regards to Asian Indian population.¹²

METHODS

The study was done as cross-sectional study at primary care centres in and around Pondicherry. The study was during the period of September 2014 to December 2016. The study was done after obtaining proper institutional ethical committee clearance. To avoid sampling error, every 5th patient visiting primary care physician on all Wednesdays for various ailments were taken up for study. All adult patients of age more than 18 years of both sexes, who were willing to participate in the study were included after obtaining informed consent in patient’s own language. Pregnant patients and patients with diseases of abdomen, and those not willing to give informed consent were excluded from the study. Demographic profile, anthropometric measurements, vital signs were recorded.

Abdominal circumference of all patients was recorded using standard measuring tape at the level of waist, with the observer recording the measurement from the back. Waist was marked at a point mid-way between the iliac crest below and the lowest rib. The measurement was taken at the end of expiration with subjects breathing normally keeping the abdominal wall relaxed. Abdominal obesity was diagnosed when abdominal circumference was more than 90 cm in male and more than 80 cm in female as per International Diabetes Federation consensus.

RESULTS

A total number of 1030 patients were included in the study. Table 1 shows distribution of age of the study group. There were 189 patients in age group 60-69.

Table 1: Distribution of age.

Age group (years)	Number
18-29	168
30-39	174
40-49	162
50-59	185
60-69	189
70-79	127
>80	25

Table 2 shows sex distribution of the study group in which Females 535 outnumbered males 484 (Table 2).

Table 2: Distribution of sex.

Sex	Number
Male	484
Female	546

Table 3 shows abdominal obesity in males in different age groups. In the age group 50-59, 33 (40%) of males.

Table 3: Distribution of abdomen obesity in males.

Age group (years)	<90 cms	>90 cms
18-29	67	10
30-39	72	13
40-49	51	27
50-59	50	33
60-69	77	24
70-79	48	13
>80	9	1

Table 4 shows abdominal obesity in females in different age groups, in the age group 50-59 years, 45 (44%) of females had increased abdominal circumference.

Across all age groups 121 (24%) males had abdominal circumference more than 90 centimeters in the study.

Table 4: Distribution of abdomen obesity in females.

Age group (years)	<80 cms	>80 cms
18-29	79	12
30-39	76	13
40-49	49	35
50-59	57	45
60-69	63	25
70-79	51	15
>80	13	2

147(28%) females had abdominal circumference more than 80 centimeters (Table 5).

Table 5: Distribution of abdomen obesity in different sex.

	<90cms (male)	%	>90cms (male)	%
	<80cms (female)		>80cms (female)	
Male	374	76	121	24
Female	388	72	147	28

DISCUSSION

Abdominal obesity is associated with future cardiovascular disease.⁷ Abdominal obesity is defined as

a waist circumference ≥ 90 cm for men and ≥ 80 cm for women for Asian-Indian population as per International Diabetes Federation consensus.¹² As per American Heart Association statement the presence of abdominal obesity is calculated as Waist circumference > 88 cm in women and > 102 cm in men.¹³ Waist-to-hip ratio of > 0.85 in Women and > 0.9 in men is included in the diagnosis of abdominal obesity by World Health Organization.¹⁴ Waist is measured midway between the lower end of thoracic cage and the top of iliac crest and hip is measured at the level of maximum protuberance of gluteal region. In present study, applied the International Diabetes Federation consensus on abdominal obesity as it is the only statement which gives specific guidelines for Asian-Indian population and also the prevalence of coronary artery disease in on the rise in these Asian-Indian population.^{15,16} The study was conducted on 1030 patients, 570 (56%) were females and 460 (44%) were males. In present study, the overall prevalence of abdominal obesity was 268 (26%) and the prevalence in females 147 (28%) was more than the prevalence in males 121 (24%). The study result with regards to increased prevalence of abdominal obesity in females more than males was in accordance with the study done by Deepa et al.¹⁷

In current study, abdomen obesity was more prevalent in the age group of 40-59 years. With similar body mass index, Asians are more prone for obesity related cardiovascular disease.¹⁸⁻²¹ Hence abdominal obesity is a better predictor of coronary vascular disease when compared to body mass index in South Asia. The presence of abdominal obesity also correlates well with insulin resistance, diabetes mellitus, hypertension, dyslipidemia, coronary artery diseases.¹⁶⁻²⁰ During the study, it was noted that abdominal obesity was not given due importance at primary care level when compared to generalised obesity.

Most of primary care physicians were using body mass index calculated from height and weight for diagnosing generalised obesity. But there are numerous studies showing abdominal obesity is more important when compared to generalised obesity in predicting future cardiovascular risk and also diabetes, hypertension, dyslipidaemia.⁹⁻¹¹ Hence all primary care physicians should be stressed about the due importance of measuring abdominal circumference to diagnose abdominal obesity, so that early preventive measures can be done at the primary care level for cardiovascular disease and metabolic disorders.

CONCLUSION

Abdominal obesity is common at primary care level. The prevalence of abdominal obesity is more in females when compared with males. Hence all primary care physicians have to be stressed about the importance of abdominal obesity.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the institutional ethics committee

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Cite this article as: Shankar SP, Kartikeya G. Abdominal obesity in primary care. *Int J Adv Med* 2017;4:915-8.