Research Article

Study of Comorbidities in Overweight and Obese Patients

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Abstract: In past few decades in developing countries, obesity has a rapid increment leading to increased risk of cardio-vascular disease and its morbidity and mortality consequences. In 2014, a Lancet study estimated that the number of overweight adults in the world was 2.1 billion in 2013, compared with 857 million in 1980. Our study included 100 overweight and obese patients. This study was done in Department of Medicine, G.R. Medical College, Gwalior between year 2011 and 2012. Our study was aimed at finding comorbidities in obese and overweight patients. The main comorbidities which were found in our study were hypertension, dyslipidemia, sleep disorder and diabetes mellitus. So in order to prevent comorbidities one should go for lifestyle modification and change in dietary habits.

Keywords: Obesity, Overweight, Comorbidity, Hypertension.

INTRODUCTION

Obesity holds a unique place in the public health and medical fields as it is both a risk factor for other health outcomes and a health outcome all its own. Obesity is defined as the condition of having an abnormally high proportion of body fat and body mass index (BMI) ≥ 30 while overweight BMI 25-29.9[1]. It is emerging as an important health problem in India, particularly in urban areas. Almost 30% to 65% of adult urban Indian are either overweight or obese or have abdominal obesity [2]. According to a study, India is just behind US and China in this global hazard list of top 10 countries with highest number of obese people. India is under siege: junk food, alcohol and sedentary lifestyle are leading us to silent self-destruction, making one in every five Indian men and women either obese or overweight. Overweight and obese persons are at risk of a number of medical conditions which can lead to further morbidity and mortality. Obesity contributes to numerous and varied comorbid conditions like heart disease, diabetes, hypertension, gallbladder disease, osteoarthritis, sleep disorders, and some cancers (uterine, breast, colorectal, kidney, and gallbladder) [3].

The aim of our study was to determine the prevalence of comorbidities in overweight and obese patients.

MATERIALS AND METHODS

Our study was conducted in Department of Medicine, G.R. Medical College, Gwalior between year 2011 and 2012. Total 100 overweight and obese patients were taken in this study. These patients were subjected to detailed history and clinical examination. Anthropometric measurements (height, weight and waist circumference), relevant biochemical investigations (blood sugar, cardiac biomarkers, lipid profile, uric acid level), Electrocardiography (ECG), Blood pressure measurement with sphygmomanometer were taken and Body Mass Index (BMI) was calculated with the formula- BMI= weight in kgs /(height in m)^2 and data was analyzed.

RESULTS

Our study includes 100 patients of obesity and overweight out of which 56 were males (56%) and 44 were females (44%) (Table-1).

In age wise distribution of patients, maximum patients belong to age group 21-50 years (53%) while 21% patients were $\leq$20 years of age (Table-2).

In our study mean age of male patients was 41.41 yrs while female 37.86 years. Mean height was 159.23 cms and 156.97 cms for males and females respectively. Mean weight for males was 76.46 kg and for females it was 73.13 kg. Mean body mass index for males was 30.37 and for females, 29.7. Mean waist circumference was 95.28 cms and 92.68 for males and females respectively (Table-3).

Most of the patients in our study belong to class 1 obesity (52%) followed by overweight 38% when classified according to BMI (Table-4).

Hypertension was found in maximum number of patients (59%) followed by dyslipidemia in 51% cases(Table-5).

Table-1: Gender wise distribution of patients

	Males	Females
No. of patients	56	44

Table-2: Age wise distribution of patients

Age group	No. of patients	% of patients
≤20	21	21%
21-30	20	20%
31-40	12	12%
41-50	21	21%
51-60	9	9%
61-70	9	9%
≥ 71	8	8%

Table-3: Distribution of patients according to mean anthropometric measurements

Anthropometric measurements	Males(56)	Females(44)
Mean age(yrs)	41.41	37.86
Mean height (cms)	159.23	156.97
Mean weight (kgs)	76.46	73.13
Mean BMI	30.37	29.72
Mean waist circumference (cms)	95.28	92.68

Table-4: Distribution of patients according to BMI

BMI (kg/m^2)	Class	No. of patients
25-29.9	Overweight	38
30-34.9	Obese	52
35-39.9	Severely obese	8
≥40	Morbidly obese	2

Table-5: Distribution of patients according to comorbidities

Comorbidity	No. of patients	% of patients
Diabetes mellitus	16	16%
CAD	12	12%
Dyslipidemia	51	51%
Arthritis	17	17%
Hypertension	59	59%
Hyperuricemia	35	35%
Sleep disorder	47	47%

DISCUSSION

In our study of 100 overweight and obese patients 56 were males while 44 were females, this shows males are more affected with obesity. Most of the obese patients belongs to 21-50 years (53%), 21% of patients were below 20 years of age which shows that our teen population has increasing prevalence of obesity. Mean weight for males was 76.46 kg as compared to females (73.13 kg). Most of the patients belongs to class 1 obesity (52%) followed by overweight (38%).

Most number of comorbidity which was found with obesity was hypertension (59%), this is comparable with the study done by Bramlage P [4] which showed prevalence of hypertension in obesity was 60-70%. Our study showed 51% patients of dyslipidemia, the study done by SZA Shah [5] found prevalence of dyslipidemia in obese patient was 40-50%. Sleep disorder was found in 47% of patients of obesity and overweight in our study, Indra Narang [6] study stated that 60% of obese children had obstructive sleep apnea. Hyperuricemia was seen in 35% of patients in this study while study done by Remedios [7] which had 44.6% prevalence of hyeruricemia in Indian obese. Diabetes mellitus was found in 16% of patients and this is similar to the study done by Federica Vinciguerra [8] which had 14% patients of diabetes mellitus in severely obese patients. Coronary artery disease was found in only 12 % patients in our study.

CONCLUSIONS

Obesity is associated with many metabolic complications, increasing the risk of diabetes mellitus, hypertension, CAD, dyslipidemia and sleep apnea. Hypertension was consistently present in obese patients, These results highlight the need for specific pharmacologic management of obesity-related hypertension in primary practice. Dyslipidemia is a group of biochemical disorders which is frequently encountered in obese individuals. The effects of BMI and WC on metabolic and cardiac diseases are multiplicative. So the weight loss should be urged for all those with a high body mass index and high waist circumference patients.

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