Original article

A STUDY OF OBESE PATIENTS ADMITTED AT A TERTIARY CARE HOSPITAL

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ABSTRACT

Introduction: Obesity is a chronic non-communicable disease, characterized by deposition of fat and adipose tissue resulting from the discrepancy between energy consumption and expenditure. Obesity is largely a lifestyle disease and its two largest causes are poor eating habits and inactivity.

Aims: To study the demographic data, causes & associations of obesity with other disease processes and how emergency physicians should approach obese patients in the emergency department.

Material & Method: This was a hospital-based, cross sectional observational study carried out over a period of one year from NOVEMBER 2017 to OCTOBER 2018.

Result: Details about demographic data, risk factors, clinical presentation, co-morbid conditions and lipid profile & TSH level were collected & analyzed. In our study maximum no of obesity was seen in 41-60 yrs of age group & more common in females with dietary habits as the most common risk factor & HTN is the most common co-morbidities.

Conclusion: The result in our study shows dietary habits and life style has a major role in obesity. Emergency physicians with good knowledge and specially equipped departments are helpful to decrease the morbidity and mortality.

Key words: Obesity, Emergency departments, dietary habits, sedentary life style

Key words: obese patients , surgery out come ,at a tertiary care hospital

ABSTRACT

INTRODUCTION & EPIDEMIOLOGY:-

Obesity is often defined simply as a condition of abnormal or excessive fat accumulation in adipose tissue, to the extent that health may be impaired.(1)

Obesity is a chronic non-communicable disease, characterized by deposition of fat and adipose tissue resulting from the discrepancy between energy consumption and expenditure. The morbidity & mortality attributable to obesity was expected to increase up to 57 % by 2020. Almost half of the deaths are attributable to cardiovascular disease and Diabetes Mellitus.(2) Since 1980, worldwide obesity has more than doubled. In 2008, more than 1.4 billion adults, 20 and older, were overweight. Of these, over 200 million men and nearly 300 million women were obese. Sixty-five percent of the world population resides in countries where overweight and obesity kill more people than underweight. In 2010, more than 40 million children under the age of 5 were overweight.(3)

A high incidence of obesity was reported from developed countries including USA where 65% of adult population was overweight and in addition another 30 % were obese. The longitudinal and cross section data analysis in intermediate developed countries also revealed an increase in incidence of obesity from 30 % to 100% over the past decade.(3)

Obesity is largely a lifestyle disease and its two largest causes are poor eating habits and inactivity.(4,5) Obesity has far-reaching ramifications as it can have a huge impact on the health and wellbeing of a person. The prevalence is higher in the urban than in the rural areas. Prevalence varies within the country because of differences in the lifestyle, mainly in the dietary patterns, and physical activity. Obesity is associated with increased risk factors for all systems in the human body.(5,6,7,8,9)

Many beliefs about obesity persist in the absence of supporting scientific evidence (presumption). The promulgation of unsupported beliefs may yield poorly informed policy decisions, inaccurate clinical and public health recommendations, and an unproductive

allocation of research resources may divert attention away from useful, evidence-based information.[7,8,9,10]

AIM:-

To study the demographic data, causes and associations of obesity with other disease processes and how emergency physicians should approach obese patients in the emergency department.

MATERIALS & METHOD:-

This was a hospital-based, cross sectional observational study carried out over a period of one year from NOVEMBER 2017 to OCTOBER 2018. The sample size was estimated to be 150. We adopted a random sampling procedure.

The subjects included were of age group (19-75yrs) of both sexes male & female. Any pregnant female, history of bariatric surgery and subjects not willing for study were excluded from study. Demographic data (including age, sex, occupation, monthly family income, socio economic status) & medical data (associated co-morbidities, risk factor, past illness, any treatment) were collected and studied with regard to the disease processes.

RESULT:-

Table 1- Age wise distribution

Age (in Years)	No. of patients	Percentage (%)
19-30	16	10.67
31-40	28	18.66
41-50	39	26.00
51-60	34	22.67
61-70	25	16.67
71-75	08	05.33
TOTAL	**150**	**100**

According to above Table-1 maximum no of patients with obesity is seen in 41- 60 years of age group (48.67%) and minimum in 71- 75 years (5.33%) in our study. In study of Manohar et all have shown maximum no of obese patients in the age group of 40-49 yrs (62 pts).[3]

Table 2- Sex wise distribution

Age Group (yrs)	Male	Female	Total
19-30	09	07	16
31-40	13	15	28
41-50	17	22	39
51-60	18	16	34
61-70	13	12	25
71-75	04	04	08
Total	**74**	**76**	**150**

According to sex distribution in our study maximum no of patients with obesity is seen in females of age group of 41-50 years(22) followed by males of age group of 51-60 years(18).

As in the age group of 41-50 yrs, males are more active and level of activity decreases thereafter which leads to obesity. More no females in the age group of 41-50 may be related to the hormonal changes during menopause. Study of Manohar Pradhan et all have shown obesity is more common in females.(80 pts)

Table 3: Risk factors for obesity

Risk Factors	No of pts	Percentage (%)
Dietary habits	68	45.33
Sedentary life style	57	38.00
Smoking	44	29.33
Hypothyroidism	32	21.33

Alcoholics	29	19.33
Hereditary	28	18.66
OC pills intake	14	09.33
Psychiatric	12	08.00
Steroid Therapy	05	03.33

According to our study, Dietary Habits (45.33%) (non vegetarian and person with poor eating habits) and sedentary life style (38%) are the most common risk factors for obesity followed by Smoking (29.33), Hypothyroidism (21.33) and alcoholics (19.33). In females of child bearing age Oral Contraceptive Pills intake is also one of the risk factors for obesity.

In our study we found 3.33% of patients taking steroid therapy compared to 3.7% in study of Yasser et all.

Table 4- Co-morbidities

Co-Morbidities	**No. of pts**	**Our Study (%)**	**Manohar Pradhan Study [3] (%)**
DM	48	32.00	23.30
OSA	47	31.33	-
Dyslipidaemia	38	25.33	56.80
Hypothyroidism	37	24.66	06.50
HTN	32	21.33	54.00
CVA	26	17.33	08.00
Others	22	14.66	-
Alcoholics	19	12.66	52.70
IHD	16	10.66	08.00

In our study most common co-morbidities associated with obesity are Diabetes mellitus(32%), Dyslipidaemia(31.33%) and Hypothyroidism(24.66%) followed by Hypertension(21.33%) and CVA (17.33%)(ischemic stroke), while in study of Manohar Pradhan et all have found

dyslipidaemia (56.80%) followed by HTN(54%) and alcoholics(52.70%) as more common co-morbidities associated with obesity.[3]

In our study we found we found 32% of patients with diabetes compared to 9.2% in study by Yasser et all.[11]

Table 5- Level of TSH in all patients

TSH level (mIU/ml)	**No of pts (New + Old)**	**%**
<0.5	4 (0+4)	02.66
0.5- 5 (n)	114 (90+24)	76.00
>5	33 (24+9)	22.00
Total	**150 (113+37)**	**100**

TSH was done in all patients, out of all TSH was normal in 114 patients. 37 patients were already taking treatment for Hypothyroidism. Out of these 24 had normal level of TSH, 4 had low TSH and 9 were having high level of TSH despite taking regular drug treatment.

In 9 patients hypothyroidism was diagnosed newly. All patients with abnormal level of TSH were referred to endocrinologist.

Table 6- Level of LDL, HDL, Triglycerides & Cholesterol in No. of patients

	No. of Patients			
	LDL (mg/dl)	**HDL (mg/dl)**	**Triglyceride (mg/dl)**	**Total Cholesterol (mg/dl)**
Desirable	29	14	17	12
Borderline	32	21	24	19
High Risk	99	115	109	119
Total patients	**150**	**150**	**150**	**150**

Serum lipid profile was done in all patients. Out of 150 patients, HDL & Total Cholesterol was high in 115 & 119 patients respectively. Out of 58 patients who were taking LDL lowering agents, 37 had borderline & 12 had high levels of LDL.

More no of patients with high level of LDL(99) and Total Cholesterol(119) was due to obesity and it has an strong association with poor dietary habits and sedentary life styles.

Table 7- Clinical presentation

Clinical presentation	**No of pts**	**%**
Breathlessness	59	39.33
Chest pain	37	24.66
Altered sensorium	30	20.00
OTHERS	26	17.33
Abdominal Pain	22	14.66
Hypotension	19	12.66
Lower limb pain	16	10.66

During analysis of the data we found maximum no of patients presented with breathlessness (39.33%) followed by chest pain (24.66%) and Altered sensorium.(20%)

Table 8- Primary cause for admission

Cause	**No. of pts**	**Percentage %**	**Yasser et all[11] %**
Medical	98	65.33	55.30
Trauma	25	16.67	0 6.80
Surgical	14	09.33	37.30
Others	13	08.67	00.70
Total	**150**	**100**	**100**

Maximum no of patients were admitted for medical cause (65.33%) followed by Trauma (16.66%) and surgical cause. Our results for medical admissions are comparable to Yasser et all. We have more no of trauma patients as we have a dedicated trauma centre and patients with trauma are coming to our centre from all nearby places.

Table 9- Requirement of Mechanical ventilation

Mechanical ventilation	No. of pts	%
Invasive	12	08.00
Non invasive	25	16.67
No	113	75.33
TOTAL	150	100

Out of all patients, 24.67% required mechanical ventilation of which 16.67% required Non invasive & 8% invasive ventilation compared to 48.9% of Study by Yasser et all.[11] O_2 support was given whenever required.

DISCUSSION-

Medical knowledge and professional skill that are specific to morbidly obese patients that all emergency physicians should possess including airway assessment and management, intravenous access, medication dosing/administration adjusted for weight and differential diagnoses of emergency conditions and how they are best assessed.[11]

Table 10- Classification of BMI (WHO Classification; for adults)

Classification	BMI kg/ M^2	Risk of morbidity
Under Weight	<18.5	Low
Normal range	18.5- 24.9	Average
Over Weight	**>25.0**	

Pre- Obese	25.0 - 29.9	Mild
Obese- class 1	30.0 – 34.9	Moderate
Obese –class 2	35.0- 39.9	Severe
Obese-class 3	>40	Very severe

According to WHO, Body mass index (BMI) is a simple index for weight for height that is commonly used to classify overweight and obesity in adults. It is defined as a person's weight in kilograms divided by the square of his height in meters (kg/m^2).[12]

Worldwide obesity has nearly tripled since 1975. In 2016, more than 1.9 billion adults, 18 years and older, were overweight. Of these over 650 million were obese. 39% of adults aged 18 years and over were overweight in 2016, and 13% were obese.[12]

Table 11- Level of LDL, HDL, Triglycerides & Cholesterol

	LDL (mg/dl)	**HDL (mg/dl)**	**Triglyceride (mg/dl)**	**Total Cholesterol (mg/dl)**
Desirable	**60-129**	**≥60**	**<150**	**<200**
Borderline	**130-159**	**35-45**	**150-199**	**200-239**
High Risk	**≥160**	**<35**	**>200**	**>240**

Obesity is a complex medical condition that has roots in genetic, environmental and social exposures that attributed management of obese patients.[11] There is little doubt that the rising prevalence of obesity places an increasing number of adults and children at risk for chronic diseases that will be challenging to manage. Now a days there is an increasing prevalence of obesity-related illness, so when an obese patient comes to emergency department There are difficulties in examination, evaluation, diagnosis and treatment of them along with issue of care and emergency physicians have to look for all. Many a times emergency department is the main assess point for such patients which brings a lot of challenges to emergency physicians.[11,13]

Frequently there are limitations in the availability of special equipment, diagnostic modalities and treatments feasibility.[14]

There are very few specialized centers taking care of obese patients, But in emergency most of the time these patient comes to emergency department of a hospital having limitations in caring of such patients.[11,13,15] This creates a series of ethical dilemmas for emergency physicians and the facilities in which they practice. Health care facilities have to spend scarce resources on specialized equipment for a relatively small portion of such patient population; there is a professional necessity for emergency physicians to have specialized knowledge in caring for the obese population. Emergency physicians have a special role within the health care system to care for such patients to the maximum ability of themselves and their facility regardless of socioeconomic status.[11,15]

Caring for the obese patient is not merely a matter of scaling up but it also require knowledge for existing treatment protocols based on weight, airway management, medication dosing, risk assessment from injury or complications derived from common disease processes, such as COPD or coronary artery disease.[11,16]

CONCLUSION

Now a days there is increase in no of obese patients attending emergency department at any time. Emergency physicians should have adequate knowledge, attitude and practice (training) to manage such patients. Also emergency department should be adequately equipped to accept and manage such patients.

LIMITATION OF OUR STUDY

Being in the emergency Department we could not study the outcome of our patients.

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