Original Article

Obesity in candidates for bariatric surgery*

Obesidade em pacientes candidatos a cirurgia bariátrica

Obesidad en pacientes candidatos a cirugía bariátrica

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ABSTRACT

Objective: To identify the demographic and clinical profile of individuals with severe obesity who were candidates for bariatric surgery. **Methods:** This was a descriptive study. Data were extracted from 252 medical records of candidates for bariatric surgery in the Hospital of the Federal University of Mato Grosso do Sul from 2004 through 2007. **Results:** The prevalence of obesity was associated with other chronic diseases related to the eating habits. The majority of candidates for bariatric surgery were whites (86.53%) and female (80.15%). The mean age of the candidates was 36.07±10.16 years. The most common commorbidities included high blood pressure (63.49%), dyspnea (55.56%), varicose veins (45.63%), and depression (36.51%). **Conclusion:** The major comorbidity associated with obesity is high blood pressure; individuals need be followed by a multidisciplinary team of health care providers.

Keywords: Obesity/epidemiology; Obesity/surgery; Obesity/complications; Comorbidity

RESUMO

Objetivo: Estudar a obesidade grau III ou grave, identificando o perfil demográfico, clínico e as doenças de maior ocorrência, em pacientes atendidos na consulta de enfermagem, candidatos a cirurgia bariátrica do Núcleo do Hospital Universitário da Universidade Federal de Mato Grosso do Sul. **Métodos:** Trata-se de um estudo descritivo, com análise dos registros em 252 prontuários dos pacientes atendidos no Programa de Cirurgia Bariátrica do Núcleo do Hospital Universitário da Universidade Federal de Mato Grosso do Sul, entre 2004 a 2007. **Resultados:** A prevalência crescente de sobrepeso e obesidade está associada a doenças crônicas relacionadas à dieta (comorbidades). Dos 252 pacientes atendidos 80,15% eram do sexo feminino; a média da idade foi de 36,07±10,16 anos; quanto à etnia 86,53% eram brancos, 8,57% pardos e 4,90% negros; houve predomínio das comorbidades: hipertensão arterial (63,49%), dispnéia (55,56%), varizes de membros inferiores (45,63%) e depressão (36,51%). **Conclusão:** observa-se que a doença de maior ocorrência na obesidade é a hipertensão arterial, devendo o paciente ser acompanhado por uma equipe multidisciplinar.

Descritores: Obesidade/epidemiologia; Obesidade/cirurgia; Obesidade/complicações; Comorbidade

RESUMEN

Objetivo: Estudiar la obesidad con grado III o grave, identificando el perfil demográfico, clínico y la enfermedades de mayor ocurrencia, en pacientes atendidos en la consulta de enfermería, candidatos a cirugía bariátrica del Núcleo del Hospital Universitario (NHU) de la Universidad Federal de Mato Grosso do Sul (UFMS). **Métodos:** Se trata de un estudio descriptivo, con análisis de los registros en historias clínicas de los pacientes atendidos en el Programa de Cirugía Bariátrica del Núcleo del Hospital Universitario de la Universidad Federal de Mato Grosso do Sul, entre el 2004 al 2007. **Resultados:** La prevalencia creciente de exceso de peso y obesidad está asociada a enfermedades crónicas relacionadas a la dieta (comorbidades). De los 252 pacientes atendidos el 80,15% eran del sexo femenino y el 19,84% del masculino; el promedio de edad fue de 36,07±10,16 años; en cuanto a la etnia el 86,53% eran blancos, el 8,57% pardos y el 4,90% negros; hubo predominio de las comorbidades: hipertensión arterial (63,49%), disnea (55,56%), várices de miembros inferiores (45,63%) y depresión (36,51%). **Conclusión:** Se observa que la enfermedad de mayor ocurrencia en la obesidad es la hipertensión arterial, siendo necesario que el paciente sea acompañado por un equipo multidisciplinario.

Descriptores: Obesidad/epidemiologia; Obesidad/cirurgía; Obesidad/complicaciones; Comorbilidad

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INTRODUCTION

The global epidemics of obesity is a reflex of social, economic and cultural problems currently faced by developing countries or recently industrialized countries, as well as by ethnical minorities in situations of disadvantage in developed countries. Obesity is a complex disease with severe social and psychological consequences, affecting all age and social groups.

The genetic factor is an important determiner in people's susceptibility to weight gain, and weight balance, determined by caloric intake versus the caloric expenditure. Thus, obesity epidemics has been driven by changes in society and in diet habits, caused by economic growth, modernization, urbanization and globalization[1-2].

When compared with normal weight individuals (Body Mass Index - BMI 18.5-24.9 kg/m²), those overweight (BMI 25-29.9 kg/m²) present greater risks of developing diabetes mellitus, dyslipidemia and blood hypertension, conditions that favor the development of heart diseases and also certain forms of cancer. The consequences vary from increase in the prevalence of premature death, to severe chronic diseases that reduce quality of life[3].

There is a worldwide epidemics of overweight, obesity (BMI 30-39.9 kg/m2) and obesity class III or severe (BMI $\geq$ 40.0 kg/m2) which is reaching critical proportions, affecting 1.7 billion people[4].

Obesity is inserted in a group of incommunicable diseases and its prevalence is extensively increasing, reaching epidemic proportions. There are more than 1 billion overweight adults and, at least 300 million of them clinically obese, being a major contributor for chronic and disabling diseases. In developed countries, such as the United States (USA), 73% of the population is obese, and the mortality due to obesity can reach up to 300 thousand cases per year[4].

In Brazil, around 40% of the population is overweight, 10.1% are obese and 28.5% are overweight. The mortality rate is 12 times higher in morbid obese individuals than in normal weight people with ages ranging from 25 to 40 years[5].

Bariatric surgery is the most effective treatment for obesity class III. The purpose of surgical treatment is to improve not only quality but also time of life of obese people, solving the physical and psychosocial problems caused by the excess of weight[1].

Obesity is a complex, difficult to treat disease with severe social and clinical consequences, such as blood hypertension, sleep apnea, and even some forms of cancer, affecting all ages and social groups.

A comprehensive analysis of the several clinical aspects of patients must be performed before the indication of bariatric surgery. A multidisciplinary team formed by surgeon, nurse, nutritionist, psychologist, physical therapist, among others must take part. Professionals involved must be aware of the changes caused by obesity and must be able to help and encourage patients for the best treatment, since the surgery acts on the consequence of obesity (weight) rather than on its cause.

Each professional from the multidisciplinary team is responsible for one part of the treatment and so care is more intensive and the results are faster. Nurses have a double role: they have to ensure the technical efficiency in the perioperative period and work as facilitators between professionals, patients and families[6].

Considering what was mentioned, the objective of the present article is to study obesity class III or severe, identifying the demographic and clinical profile, and the most common diseases presented by patients seen in the nursing appointment, applicants to Bariatric surgery in Núcleo do Hospital Universitário (NHU) at the Federal University of Mato Grosso do Sul (UFMS).

METHODS

A descriptive quantitative study assessing the records from 252 charts from patients undergoing evaluation during nursing appointment in the Program for Bariatric Surgery at NHU/UFMS, between February 2004 and February 2007, performed in the outpatient ward of the Surgical Clinics. In this evaluation, nurses interview and perform directed physical examination, to assess and check if patients fulfill the criteria for bariatric surgery.

The research project has been approved by the Ethical Committee of the UFMS and data collection was performed according to the information from the nursing care charts (chart), stored in EpiInfo V.3.3.2 - Feb.2005, and the variables are presented as descriptive statistics.

RESULTS

Two hundred and fifty two patients were assessed in the present study; ages ranged from 17 to 66 years with mean age of 36.07±10.16 years (mean ± average standard deviation). Regarding gender, 202 (80.15%) were female, and 50 (19.84%) were males. Among those reporting ethnic group, 212 (86.53%) were white, 21 (8.57%) mixed races, and 12 (4.90%) black.

When schooling was compared with BMI, among patients with incomplete high school, 13 (7.93%) presented BMI below 40kg/m², 94 (57.32%) between 40 and 50kg/m², and 57 (34.75%) above 50kg/m². Among patients that had finished high school or above, 2 (2.60%) presented BMI below 40kg/m², 55 (71.43%) between 40 and 50kg/m², and 20 (25.97%) above 50kg/m². There was no significant correlation between patients' schooling and their BMI (Chi-Square test, p=0.07).

Regarding clinical data from patients, overall, mean values obtained of weight were 136.89±91,75kg, of height 162±0.10m, and of BMI 48.12±6.69kg/m².

Regarding blood pressure, values observed for systolic and diastolic pressures with their respective means were 145.10±26.93mmHg, 98.05±21.22mmHg and 121.58±22.97mmHg, respectively.

Of the 252 people assessed, 92 (36.51%) reported depression, 79 (39.30%) were females and 13 (26.00%) males, among them 33 (30.36%) were undergoing psychiatric treatment. There was no significant correlation between patients' gender and the presence or absence of depression as a comorbidity (Chi-square test, p=0.11).

Table 1 – Distribution of patients seen in the Program of Bariatric Surgery, according to comorbidities, Núcleo de Hospital Universitário/UFMS, 2004-2007 (n=252)

Comorbidity	Number of patients (% of the total)			
	Present		Absent	
	N	(%)	N	(%)
Sleep apnea	44	17.46	208	82.54
Arrhythmias	33	13.10	219	86.90
Arthroses	67	26.59	185	73.41
Asthma	15	5.95	237	94.05
BED(1)	15	5.95	237	94.05
Bronchitis	20	7.94	232	92.06
Gallstones	16	6.35	236	93.65
Depression	92	36.51	160	63.49
Diabetes Mellitus	25	9.92	227	90.08
Erectile dysfunction(2)	9	18.00	41	82.00
Effort dyspnea	140	55.56	112	44.44
Menstrual irregularities(3)	58	28.71	144	71.29
GERD(4)	34	13.49	218	86.51
Hemorrhoids	21	8.33	231	91.67
Blood Hypertension	160	63.49	92	36.51
Hyperthyroidism	1	0.40	251	99.60
Hypothyroidism	14	5.56	238	94.44
Hirsutism(3)	78	38.61	124	61.39
Heart Failure	7	2.78	245	97.22
Urinary Incontinence	39	15.48	213	84.52
Nephrolithiasis	21	8.33	231	91.67
Peptic Ulcer	5	1.98	247	98.02
Varicose Veins	115	45.63	137	54.37
Other co-morbidities	128	50.79	124	49.21

(1) BED - Binge Eating Disorder.
(2) This comorbidity is associated only with male patients (n=50).
(3) These comorbidities are associated only with females (n=202).
(4) GERD-gastroesophageal reflux disease.

Regarding clinical treatment (diet, physical exercise and medication), 245 (97.22%) patients had already undergone some kind of diet to treat obesity, 211 (83.73%) reported they had performed physical activities, and 176 (69.84%) took medication for obesity.

In Table 1 we can see the most frequent diseases with predominance of the following comorbidities: Blood hypertension 160 (63.49%); Dyspnea 140 (55.56%); Varicose Veins 115 (45.63%) and Depression 92 (36.51%).

DISCUSSION

Of the 252 morbid obese researched, most were females (202). The predominance of females seem to demonstrate that women look for treatment more commonly[7] however, this may be because these women were at home and, therefore, have more time for the treatment[8].

Regarding age, data are similar to other studies[8-11]. However, a study developed with 50 patients, 10 men and 40 women, in the outpatient obesity clinics of the Federal University of São Paulo (UNIFESP) the Body Mass Index (BMI) recorded was 40 to 81.7 kg/m2 (mean =52.2±9.2 kg/m2) and age between 18 and 56 years (mean symbol) 38.5±9.7[7].

As for ethnic group, white color was predominant in the present study. When this data was discussed we referred to the local population, according to color, in the cities of Mato Grosso do Sul, where 71,139 (3.42%) are black, 788,797 (37.96%) are mixed race, 1,135.811 (54.65%) are white, 16,263 (0.78%) are yellow, 53,900 (2.59%) Indians and 12,162 (0.58%) did not report race[12].

When schooling was compared with BMI there was no significant correlation, however, there was a tendency for a correlation in the present study.

In a study investigating overweight and obesity in a sample of 1105 individuals 18 or over living in the metropolitan region of Belo Horizonte, women with poor schooling presented higher risk (OR = 5.95; CI95%: 2.51 to 14.12) of becoming obese than men[13].

Another study conducted in the urban area of Pelotas (RS) with 1,035 people to study the prevalence of obesity in adults demonstrated that people with more education are significantly less obese, thus there is an inverse correlation between level of education and obesity[14].

Regarding epidemiological and clinical data, the literature lacks studies on obesity class III, approaching these aspects on morbid obese patients.

When most common comorbidities were investigated, we have found respectively and in descending order predominance of the following: blood hypertension, dyspnea, varicose veins, and depression. Similar data have been found by other studies pointing out blood hypertension as the most common comorbidity[9, 10].

Similar results have been found in Bahia with a 66.6% prevalence of blood hypertension among 316 patients with obesity class III. A survey conducted in the outpatient clinics at UNIFESP, from 1998 to 1999 with 499 patients, showed a 67.1% prevalence of blood hypertension in patients with obesity class III[8, 15].

A study conducted between 1999 and 2000 in the USA, showed that the prevalence of blood hypertension increased 3.7% and BMI was responsible for 2.0% of this increase[16].

A survey carried out in the city of Porto Alegre showed

that obesity was accountable for an approximately 70% increase in the risk for blood hypertension[17].

Prevalence of obesity has increased worldwide and it has become a major health problem in modern society in developed and developing countries[2, 18].

Clinical treatment is the first option to treat obesity. Generally anorectic and inhibitor the absorption medications are used, together with psychological and dietary treatment, physical therapy and exercises, with satisfactory results when patients adhere to treatment, especially in mild and moderate forms of obesity (overweight and obesity)[2].

Diet and physical exercises have been inefficient in long-term treatments. Over 90% of the people who try to lose weight, even in specialized clinics where there is great weight loss, regain the weight after the treatment is suspended.

Most medications used for obesity are sympathomimetics, pharmacologically associated with amphetamines. Both suppress appetite through hypothalamus stimulation, presenting as one of the side effects increase in blood pressure, constipation, dry mouth, headaches, insomnia, vertigo and nervousness. Other commonly used medications are: Phentermine (Ionamin®), Sibutramine hydrochloride monohydrate (Meridia®), Orlistat (Xenical®)[19-20].

Bariatric surgery is currently the most effective treatment for obesity class III with exponential increase due to the global epidemics, up to the present among patients undergoing this surgery, only 1% regained weight[1, 19].

Periodical multidisciplinary follow-up in the postoperative period of bariatric surgery has a significant impact on weight loss, offering patients clinical follow-up and psychological support[2].

Treatment of obesity class III, by a multidisciplinary team results in a more efficient treatment and all the team should speak the same language with patients, stressing that the treatment success depends especially on patients' commitment. However, nurses present the technical abilities and the complementary information available and are responsible to ensure technical efficiency in the perioperative period[6].

The multidisciplinary team of the Program of Bariatric Surgery at NHU/UFMS is formed by two surgeons, a nurse, a nutritionist, a psychologist, and three physical educators. The nurse is responsible in the preoperative period for: screening (nursing appointment) applicant patients for bariatric surgery, lecturing on the surgery, scheduling surgeries; in the immediate postoperative period, she is responsible for: daily postoperative follow-up and guidelines on discharge; and in the late postoperative period she is responsible for: monthly nursing appointment for a year and then on every semester. The proposal of the multidisciplinary team is to follow-up patients for at least five years.

Obesity causes pathological changes in the body: size increase or production of hypertrophic fat cells, associated with clinical complications like: type 2 diabetes mellitus, gallstones, cardiovascular diseases such as: coronary diseases, blood hypertension, cerebral hemorrhage; hyperlipidemia, fatty liver, sleep apnea, joint osteoarthritis, gout, some forms of cancer (lung, endometrial and colon cancer), hypercholesterolemia, gestational complications, irregular period, hirsutism, urinary incontinence, increase in the risk for surgical interventions and psychological disorders such as: Binge Eating Disorder and depression[19, 21-22].

Among the diseases associated with obesity, blood hypertension is the most common comorbidity. Blood hypertension and high BMI have been strongly associated in people under 55 years old and approximately, 80% of the people with type 2 diabetes mellitus are obese[19].

CONCLUSION

Of the 252 patients assessed between 17 and 66 years, female Caucasians were predominant. There was no significant correlation between patients' schooling and their BMI. As for patients' clinical data, overall mean values of weight, height and BMI obtained were 136.89±91.75kg, 1.62±0.10m and 48.12±6.69kg/m², respectively. Regarding blood pressure, values observed for systolic, and diastolic blood pressure with the respective means were 145.10±26.93mmHg, 98.05±21.22mmHg and 121.58±22.97mmHg, respectively. When comorbidities were investigated, we have found in descending order the predominance of: blood hypertension, dyspnea, varicose veins and depression.

Therefore, obesity is a disabling disease that has reached worldwide proportions and is now considered as an epidemic, which can lead to severe disease associated with diet with predominance of blood hypertension in this obese population.

Among the forms to treat obesity, bariatric surgery is the most effective for obesity class III. Nurses should be aware of this new field, looking for specific education and thus, acting with scientific bases in the multidisciplinary team, since this kind of combined work tends to be increasingly present in our environment.

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