

DRUG THERAPIES FOR OBESITY IN ADULTS

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Abstract: Objective: Evaluate the basis for the emergence of obesity and the pharmacological possibilities available on the market for its treatment. **Methods:** An integrative review was carried out, using as criteria the search in the National Library of Medicine (PubMed) and Scientific Electronic Library Online (SciELO) databases using the descriptors (i) obesity (ii) Antiobesity Drugs, (iii) adults with the Boolean operator “AND”. Studies published from 2020 to 2024 were included. **Results:** Obesity is a chronic disease that goes beyond being overweight and is increasing in global prevalence, develops from a chronic and positive energy balance, under the influence of multiple factors of social, behavioral and environmental origin with the formation of an obesogenic environment. At the end of all the discussion it is clear that there are several therapy options for obesity on the market, which have their advantages and disadvantages and it is up to the medical professional together with the patient to opt for the therapy that best suits the patient’s profile so that they You can not only lose weight, but also keep it off over the years. **Conclusion:** It is concluded that, according to studies, multidisciplinary therapy is necessary in order to understand associated hereditary and environmental factors. It must also be highlighted that although drug therapies and surgical interventions, such as bariatric surgery, control obesity and alleviate its comorbidities, they do not solve the problem as the disease causes several changes in the body that must be addressed in the long term, aiming to an improved quality of life. **Keywords:** Obesity, anti-obesity and adult drugs.

INTRODUCTION

Obesity is a chronic disease that goes beyond being overweight and is increasing in global prevalence. It has become a public health problem in the world. As the prevalence increases, the prevalence of comorbidities associated with it also increases. It is imperative that healthcare professionals identify overweight and obese adults and children so that counseling and treatment can be provided. (CHAO et al.,2023).

This pathology develops from a chronic and positive energy balance, under the influence of multiple factors of social, behavioral and environmental origin with the formation of an obesogenic environment that includes all aspects that have been shown to be related to possible causes and effects. of the generation of obesity, such as poor diet and sedentary lifestyle (SIDIK et al.,2023).

Among the factors that make it difficult to have a good diet worldwide are the high prices of healthy foods such as fruits, vegetables and protein sources and, on the other hand, the low costs of foods rich in carbohydrates, which become more attractive to the consumer. (WEGHUBER et al.,2022).

Obesity is a multifaceted disease with varied origins. Another point to be mentioned by studies is that hereditary factors are responsible for 40 to 75% of the variation in adiposity. There are many genes with obesity-related polymorphisms that have been identified by genome-wide studies, there are a number of single-gene mutations associated with obesity, including clinical syndromes that include obesity as one of the features (RUBINO et al.,2021).

The treatment of obesity and conditions related to obesity represents a huge economic burden, in addition to patients with this condition presenting a reduction in quality of life and life expectancy, they also carry with them a series of associated comorbidities,

making their condition even more critical, which is why It is essential that studies seek to clearly explain the basis of obesity and its possible therapies (RUBINO et al.,2022).

DEVELOPMENT

INITIAL ASPECTS

Almost all aspects of behavior and metabolism that affect weight gain, and the responses to negative and positive energy balance, are hereditary, with regard to the endocrine role of adipose tissue we have that it is where energy is stored and when the individual exceeds caloric expenditure the product is transformed into triglycerides and stored in adipocytes as weight increases they increase in volume (SMIT Set al.,2021).

And the larger the adipocytes, the greater the production of leptin, a molecule that binds to the hypothalamus, inducing satiety. In obese patients, leptin levels are high, generating hypothalamic resistance, resulting in the accumulation of fat in the intra-abdominal organs (TAHRANI et al.,2022).

In addition to this mechanism to explain obesity, there are others such as endocrine disorders, changes in the intestinal microbiome, sleep-wake cycle, genetic factors and environmental factors. (TAK et al.,2021).

DIAGNOSIS

To make the initial diagnosis of obesity, body mass index (BMI) measurement is used, measurement of abdominal circumference and an analysis of body composition, and the measurement of abdominal circumference can vary depending on the body, gender and ethnic group, being important indicators of metabolic changes (WEINTRAUB et al.,2023).

The body mass index is a good indicator, but it has limitations as it does not distinguish lean mass from fat mass, and may be poorly estimated in elderly individuals due to their

loss of lean mass and decreased weight and overestimated in muscular individuals, but it continues to be method used, with its main advantage being its easy applicability and low cost (GRUNVALD et al.,2022).

CLASSIFICATION

Obesity is classified using BMI. The American Society for Bariatric Surgery presents 6 levels for classifying obesity. Are they:

BMI between 27 and 30: slight obesity
BMI between 30 and 35: moderate obesity
BMI between 35 and 40: severe obesity
BMI between 40 and 50: morbid obesity
BMI between 50 and 60: super obesity
BMI greater than 60: super-super obesity

The most common classification adopted by the WHO divides obesity into 3 degrees:

Grade I	BMI between 30 and 34.9
Grade II	BMI between 35 and 39.9
Grade III	BMI over 40

PILLARS OF TREATMENT

Treatment varies according to the degree and origin of obesity or overweight, it follows a base of pillars that are universal for all stages, such as dietary re-education and the practice of physical activity that best adapts, if carried out in a constant and continuous manner, they resolve the problem. In the vast majority of cases of overweight and obesity, it is worth highlighting the importance of a trained professional to better guide the patient, so that they can be monitored according to their specific needs (SINGH et al.,2022).

Where we see the growing need for a multidisciplinary team to monitor these patients, in an attempt that goes beyond weight loss but also its maintenance after loss.

DRUG THERAPY

Worldwide, there are several therapies available for the treatment of obesity, ranging from a lifestyle change to bariatric surgery, but the objective of this is to review the anti-obesity drug therapies available on the market.

Among the therapies are topiramate, a medication from the anticonvulsant class that blocks sodium channels, one of whose effects is weight reduction, which is related to a reduction in appetite and an increase in the feeling of satiety, which is also associated with reduced of binge eating and reducing the number of binge days. However, it has some unwanted side effects such as: nausea, changes in taste, nephrolithiasis, among others (WEDGE *et al.*,2023).

Another medication available on the market is sibutramine hydrochloride, which belongs to the class of anorectics, whose mechanism of action is capable of inhibiting the reuptake of serotonin, dopamine and norepinephrine, thereby increasing satiety in the central nervous system, in addition to increasing thermogenic, which helps with weight loss. Its main side effects are insomnia, sweating, xerostomia, among others (WEDGE *et al.*,2022).

GLP-1 receptor agonists are a class of medicationsthat have been gaining prominence in the treatment of obesity. Among this class are liraglutide and semaglutide, medications that were initially produced for the treatment of diabetes, and which demonstrate excellent metabolic outcomes at regarding weight reduction through modulation of the central nervous system, altering the sensation of hunger and satiety (GÓMEZ-AMBROSI *et al.*,2022).

At the end of all the discussion it is clear that there are several therapy options for obesity on the market, which have their advantages and disadvantages and it is up to the medical professional together with the

patient to opt for the therapy that best suits the patient's profile so that they You can not only lose weight, but also keep it off over the years.

CONCLUSION

It is concluded that, according to studies, multidisciplinary therapy is necessary in order to understand associated hereditary and environmental factors. It is considered that, in addition to genetic factors and metabolic disorders that obesity affects, there is a simultaneous behavioral risk for it in adults around the world, which consequently leads to an increased tendency in the emergence of this pathology (STREB *et al.*,2020).

Thus, it is hoped that we can understand that bad daily habits such as a sedentary lifestyle and consumption of ultra-processed, fatty and high-sugar foods are major influencers (STREB *et al.*,2020).

REFERENCES

- Chao, Ariana M et al. **“Semaglutido para o tratamento da obesidade.”** *Tendências em medicina cardiovascular* vol. 33,3 (2023): 159-166. doi:10.1016/j.tcm.2021.12.008
- Sidik, Saima. **“Além de Ozempic: novos medicamentos para obesidade serão mais baratos e eficazes.”** *Natureza* vol. 619,7968 (2023): 19. doi:10.1038/d41586-023-02099-9
- Weghuber, Daniel et al. **“Once-Weekly Semaglutide in Adolescents with Obesity.”** *The New England journal of medicine* vol. 387,24 (2022): 2245-2257. doi:10.1056/NEJMoa2208601
- Rubino, Domenica et al. **“Efeito do Semaglutide Subcutâneo Semanal Contínuo vs Placebo na Manutenção da Perda de Peso em Adultos com Sobrepeso ou Obesidade: O Ensaio Clínico Randomizado STEP 4.”** *JAMA* vol. 325,14 (2021): 1414-1425. doi:10.1001/jama.2021.3224
- Rubino, Domenica M et al. **“Effect of Weekly Subcutaneous Semaglutide vs Daily Liraglutide on Body Weight in Adults With Overweight or Obesity Without Diabetes: The STEP 8 Randomized Clinical Trial.”** *JAMA* vol. 327,2 (2022): 138-150. doi:10.1001/jama.2021.23619
- Smits, Mark M, and Daniël H Van Raalte. **“Safety of Semaglutide.”** *Frontiers in endocrinology* vol. 12 645563. 7 Jul. 2021, doi:10.3389/fendo.2021.645563
- Tahrani, Abd A e John Morton. **“Benefícios da perda de peso de 10% ou mais em pacientes com sobrepeso ou obesidade: Uma revisão.”** *Obesidade (Silver Spring, Md.)* vol. 30,4 (2022): 802-840. doi:10.1002/oby.23371
- Tak, Young Jin, and Sang Yeoup Lee. **“Long-Term Efficacy and Safety of Anti-Obesity Treatment: Where Do We Stand?.”** *Current obesity reports* vol. 10,1 (2021): 14-30. doi:10.1007/s13679-020-00422-w

Weintraub, Michael A et al. **“Five-year Weight Loss Maintenance With Obesity Pharmacotherapy.”** *The Journal of clinical endocrinology and metabolism* vol. 108,9 (2023): e832-e841. doi:10.1210/clinem/dgad100

Grunvald, Eduardo et al. **“AGA Clinical Practice Guideline on Pharmacological Interventions for Adults With Obesity.”** *Gastroenterology* vol. 163,5 (2022): 1198-1225. doi:10.1053/j.gastro.2022.08.045

Singh, Gurdeep et al. **“Wegovy (semaglutide): a new weight loss drug for chronic weight management.”** *Journal of investigative medicine : the official publication of the American Federation for Clinical Research* vol. 70,1 (2022): 5-13. doi:10.1136/jim-2021-001952

Cunha, Claudio Leinig Pereira da. **“Obesity-Induced Hypertension.”** “Hipertensão Induzida pela Obesidade.” *Arquivos brasileiros de cardiologia* vol. 120,7 (2023): e20230391. doi:10.36660/abc.20230391

Cunha, Claudio Leinig Pereira da. **“The Influence of Obesity and Physical Activity on Cardiovascular Risk.”** “A Influência da Obesidade e da Atividade Física no Risco Cardiovascular.” *Arquivos brasileiros de cardiologia* vol. 119,2 (2022): 244-245. doi:10.36660/abc.20220381

Gómez-Ambrosi, J, and V Catalán. *Anales del sistema sanitario de Navarra* vol. 45,1 e0993. 25 Apr. 2022, doi:10.23938/ASSN.0993

Streb, Anne Ribeiro et al. **“Simultaneidade de comportamentos de risco para a obesidade em adultos das capitais do Brasil”** [Simultaneity of risk behaviors for obesity in adults in the capitals of Brazil]. *Ciencia & saude coletiva* vol. 25,8 (2020): 2999-3007. doi:10.1590/1413-81232020258.27752018

Fusco, Suzimar de Fátima Benato et al. **“Anxiety, sleep quality, and binge eating in overweight or obese adults.”** “Ansiedade, qualidade do sono e compulsão alimentar em adultos com sobrepeso ou obesidade.” *Revista da Escola de Enfermagem da U S P* vol. 54 e03656. 11 Dec. 2020, doi:10.1590/S1980-220X2019013903656

Frigolet, María E et al. **“Obesity, adipose tissue, and bariatric surgery.”** “Obesidad, tejido adiposo y cirugía bariátrica.” *Boletín medico del Hospital Infantil de Mexico* vol. 77,1 (2020): 3-14. doi:10.24875/BMHIM.19000115