2019

Obesity: Modern Medicine vs. Lifestyle

Jenny Christianson
University of North Dakota

Follow this and additional works at: https://commons.und.edu/pas-grad-posters

Part of the Biochemical Phenomena, Metabolism, and Nutrition Commons, and the Surgery Commons

Recommended Citation
https://commons.und.edu/pas-grad-posters/133

This Poster is brought to you for free and open access by the Department of Physician Studies at UND Scholarly Commons. It has been accepted for inclusion in Physician Assistant Scholarly Project Posters by an authorized administrator of UND Scholarly Commons. For more information, please contact zeinebyousif@library.und.edu.
Obesity: Modern Medicine vs. Lifestyle

Jenny Christianson, PA-S
Department of Physician Assistant Studies, University of North Dakota School of Medicine & Health Sciences
Grand Forks, ND 58202-9037

Abstract

- Obesity is a rising epidemic, and is one of the most common, costly, and preventable health problems the world is experiencing today (Center for Disease Control and Prevention, [CDC], 2017).
- From this, it is important to establish an effective treatment plan that can be implemented across the nation for maximum patient benefit.
- Lifestyle changes such as diet and exercise are important to any health care plan and are equally necessary to reduce health risks. However, in certain patients, lifestyle changes are not enough due to the maladaptive biologic process in their brain. Thus, additional treatment options need to be available to these patients.
- Both medical therapies, pharmacological and surgical, were found to be beneficial in augmenting lifestyle changes in multiple studies. Therefore, it was concluded that pharmacologic and surgical therapies are valid options in resistant obesity in addition to lifestyle changes such as diet and exercise.

This study was a systematic literature review which evaluated studies from PubMed, Cochrane Library, and Pubmed to formulate a conclusion. Research focused on two-pharmacotherapy options, phentermine and orlistat, in addition to two surgical options, gastric bypass and sleeve gastrectomy, for added weight loss treatment when compared to lifestyle alone.

Introduction

- Adulthood obesity is one of the most common, costly and preventable diseases the world is experiencing today (Center for Disease Control and Prevention, [CDC], 2017).
- While obesity can be related to socioeconomic status and race, it is ultimately non-sidewise. Roughly 40% of Americans were obese by 2016, whereas this was in 2000 (National Center for Health Statistics, [NCHS], 2017).
- From this statistic it can be extrapolated that 32.75 million more Americans were diagnosed with obesity in 16 years, or 3 people every day.
- The purpose of this study is to determine the most effective treatment method available today to combat this rising epidemic.

Statement of the Problem

Obesity has a multitude of comorbidities associated with it such as: hypertension, hyperlipidemia, diabetes mellitus type 2, stroke, coronary artery disease, depression and others, including death. Therefore, it is important to evaluate studies regarding each treatment method's effectiveness and long-term outcomes to better assess where more research should take place.

Research Questions

- In obese populations, Body Mass Index (BMI) greater than or equal to 30, do drug therapies, such as phentermine and orlistat, provide better long-term health outcomes than lifestyle changes to diet and exercise patterns?
- In obese populations, BMI greater than or equal to 30, do surgeries, such as gastric bypass and sleeve gastrectomy (SG), provide better long-term health outcomes than lifestyle changes to diet and exercise patterns?

Literature Review

- After et al. (2012) examined the cost of obesity on the Canadian health care system over 11.5 years. Obese individuals averaged about $8,294.67 per person when they had no other health related comorbidities, whereas matched non-obese counterparts costed $7,323.59 (p=0.027). When one negative health related comorbidity was present, individuals cost increased $2700-$7000.
- Moldovan et al. (2016) performed a highly controlled study where participants were given Medifast meal replacements and instructed to follow Weight & Life Plan for weight loss and the Habits of Health program. There was a placebo group (no medication) and a phentermine HCI 37.5mg group. The phentermine group experienced a more substantial fat and sweet craving decrease (p=0.012 and 0.038). Participants in the phentermine group also yielded greater weight loss and a reduction with 12.1% weight loss when compared to the placebo group with an 8.9% weight loss (p=0.028). Specifically, phentermine participants lost 2.1% more than the placebo group with a p-value of 0.019.
- Samp, Al Tahani, Affin, Omar, and Rasool (2015) evaluated a 9-month study where patients were on orlistat 120 mg three times a day, and then reevaluated the patients again 4 months after cessation of orlistat by anthropometric parameters. Nine months of orlistat treatment resulted in statistically significant decreases in total body weight, BMI, waist circumference, body and visceral fat percent, and triglycerides, insulin levels and insulin resistance. There was continued cardiovascular benefit 4 months after cessation of orlistat.
- Foschi et al. (2018) evaluated lean hypertensive metabolic diversion sleeve gastrectomy (II-DSG) to standard medical care in type two diabetic patients. II-DSG’s mean fasting plasma glucose (FPG) fell from 154.6 ± 6.4 to 89.6 ± 2.4 mg/dL and mean HbA1c from 7.7 ± 0.1 to 5.6 ± 0.2% six months after surgery. These results were stable throughout the five years of the study with p < 0.0001. In 86% of the surgical patients there was complete diabetic remission and 56% had remission of cardiovascular risk factors. Only two patients in the standard medical care group achieved complete remission of diabetes with no cardiovascular risk factor change.
- Chopra, Chah, Ekin, Merkinger, Lieb, and Delany (2011) also evaluated 5G and its effects on health status. Chopra was able to find that 84% of their population had improvement in diabetics status, 49.99% had improvement in hypertension control, 90% had better asthma control, 90.74% found improvements in their obstructive sleep apnea symptoms, and 45.92% had better control of their gastroesophageal reflux disease.
- Brandt, Clemensen, Nielsen, and Sandergaard (2018) found that 39% of participants initiated a lifestyle change because their healthcare provider voiced concern about their health. Participants in this study also found it most effective to incorporate these into their life before medical therapies should be initiated.

Discussion

- Pharmacotherapies such as phentermine and orlistat, and weight loss surgeries such as gastric bypass and sleeve gastrectomy are valuable tools to treat obesity. They show increased weight loss results, and this helps patients to continue their weight loss efforts.
- However, all medical therapies come with risks. Therefore, all patients should be evaluated prior to starting any pharmacotherapy or surgical treatment.
- Additionally, weight loss will not be effective at reducing patient health risks without the adoption of lifestyle changes. Thus, in addition to evaluating for health contraindications, patients should be educated on lifestyle changes and show that they have incorporated these into their life before medical therapies should be initiated.
- As a clinician, it is imperative to provide support resources for the patient’s weight loss journey with extensive follow up to encourage continued efforts.
- With these efforts on the patient and clinician’s behalf, it may be possible to increase success rates in the treatment of obesity.

Applicability to Clinical Practice

- With the information provided in this systematic literature review of phentermine, orlistat, and weight loss surgeries should be able to address obese patient’s treatment plans and give valuable information to the patient regarding their long term weight loss outcomes with each method provided.
- Encouraging patients to work on diet and exercise for weight loss should be integral to every treatment plan.
- However, if the patient does not exhibit results from this month’s treatment, these options should be tried based on the patient’s individual health status, comorbidities, and benefit to risk ratios.

References

https://doi.org/10.1186/1472-6963-12-238

Brandt, C, Clemensen, J, Nielsen, J. B., & Sandergaard, J. (2018). Drivers for successful long-term lifestyle change, the role of e-health: A qualitative interview study. JMIR Open. 5(4). e10746
https://doi.org/10.2196/10746

https://dx.doi.org/10.1007/s11605-011-1592-0

https://dx.doi.org/10.1007/s00464-016-4842-2

https://dx.doi.org/10.1002/oby.201649

https://dx.doi.org/10.1016/j.imj.2015.02.006


Acknowledgements

I would like to express my thanks to my advisor, Mindy Staveteig PA-C, and my course professor, Daryl Sieg PA-C. I would like to thank them both for their willingness to answer all of my multitude of questions, and in their guidance and support as my scholarly project grew to something, I can be proud of.

I would also like to thank Dawn Hackman, Dr. Mykla Klag, Danka Warner-Noren, RD, LRD, CDE and Lynn Holum, RD, LRD, CDE for their individual reviews of my project. Their personal expertise was vital to answering my research questions thoroughly.

Finally, I would like to thank my family. Without their support and help for me to go back to school, none of this would have been possible.