Pediatric Obesity: Practical Recommendations for Management

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SUMMARY

The long-term negative effects of pediatric obesity necessitate a search for effective and durable treatment modalities applicable in pediatric and adolescent patients. While no unifying algorithm exists, several sophisticated management options are available. This review summarizes ways to apply available data to aid in the initial evaluation and management of pediatric and adolescent obesity.

INTRODUCTION

Pediatric and adolescent obesity remains a serious concern, affecting over 8% of children worldwide.[1] In the US, nearly 20%, or close to 15 million pediatric and adolescent patients are affected by obesity, disproportionately in low-income and minority-ethnic groups.[2] Stigmatized for obesity, especially from their relatives and healthcare providers, pediatric patients suffer negative effects on development and are more likely to maintain obesity in adulthood.[3] Given the increasing prevalence of obesity in the pediatric population, the American Academy of Pediatrics (AAP) recently made robust recommendations for the evaluation and treatment of obesity.[4] However, precise treatment algorithms for the escalation of care are harder to attain. Here, we examine the challenges and barriers to creating such algorithms, as well as updated data to inform practical recommendations for the treatment of pediatric obesity.

BARRIERS

One of the obstacles preventing the development of broad treatment guidelines stems from the multifactorial causes of obesity in childhood and adolescence. Genetic, social, and environmental factors are well documented and extend beyond the known genetic and syndromic causes of obesity, such as Melanocortin 4 receptor (MC4R) deficiency and Prader-Willi Syndrome.[5] Recent advances in the understanding of underlying genetic factors and pharmacological targets have paved the way for more sophisticated treatment strategies for a small subset of patients.[6] Nevertheless, the treatment of obesity in the adolescent population at large is associated with a unique set of challenges and nuances.[7,8]

A growing body of evidence suggests that earlier intervention in pediatric obesity results in improved long-term health benefits.[9-12] Despite evidence of the negative longitudinal health effects of childhood obesity, there is often a reluctance by pediatric providers to treat it with the necessary urgency. This phenomenon appears to stem from lack of familiarity with available resources and treatment options.[13] We have previously examined the importance of pediatric providers in directing adolescent patients to consider surgical treatment as a treatment of obesity.[14] However, even direct recommendations from pediatric providers appear to lead to only a small portion of patients following those recommendations.[15] Nevertheless, successful treatment begins with a proactive approach and recognition that inaction or the lack of aggressive action represents a true threat to the long-term health of this population.

APPROACH TO PEDIATRIC PATIENTS

Pediatric and adolescent obesity management traditionally begins in the primary provider's office, but can also be initiated by subspecialists. Sturgiss et al propose and detail a Circular 5A model (Ask, Assess, Advise, Agree, Arrange/Assist) to allow a longitudinal person-centered approach to supporting a patient's behavior change.[16] Examining the patient's own motivation can be useful, but it often reveals a tangled web of parental and peer interactions, juxtaposed onto an evolving self-view during formative years. Wading into this territory can intimidate healthcare providers and prevent opportunities to bring obesity into the foreground of the visit. However, establishing realistic and congruent expectations among patients, their families and providers regardless of modality employed is the core of obesity treatment. When presented with treatment discussions involving metabolic and bariatric surgery, adolescents and their families face pivotal decisions. Allicock et al examined the barriers and motivations of adolescents which can be useful for providers to help address the patient-specific patients' concerns. The authors noted that patients were driven by a desire to improve their physical health, mental health, and pain-free mobility. Complementing these factors were external motivators, such as involved and supportive parents, who provided the necessary environment for successful maintenance of diet and exercise. The importance of behavior modeling was essential for navigating the peri-operative process. Fears of failure of surgery and the general risk of

undergoing a procedure were noted to be common barriers.[17]

However, getting a more specific assessment is challenging. When Carroll et al examined what matters to the adolescents considering surgery, they found great variability in patient perception of the right age for surgery. The patients also often viewed surgery as the last resort.[18] While these observations were related to surgery, it is possible that similar themes would surround the application of pharmacotherapy, albeit to a lesser degree. Orn et al examined the views of adult patients who underwent metabolic bariatric surgery (MBS) as adolescents to inform the decision-making process. Among their experiences, emphasis was placed on the "importance of being aware that behaviors and problems related to obesity may persist after MBS." They reinforced the need for realistic expectations regarding weight loss, recognizing the essential role of new routines, and understanding that the surgery itself would not "fix everything" in their lives. Similarly, they noted a great variability in the perception of the "right time" for surgery with some advocating for early adolescence and others wishing they had waited until their late 20s. These findings underscore the difficulty of a generalized approach and demonstrate the need for individual consideration of these patients' journeys. They stress the importance of longitudinal family and provider support in the decision-making process.[19] For instance, while a common component of initial evaluation for surgical readiness, patient education must emphasize the continued importance of mental health care, as significant mental health problems are generally not improved by surgery and weight loss.[20]

SELECTION OF TREATMENT DECISIONS

Once the provider, patient, and family have achieved alignment regarding the need for obesity intervention, they are faced with the daunting task of selecting appropriate treatment. These decisions are best handled with a multidisciplinary approach. This is often achievable through formalized adolescent weight management programs whose providers are specifically trained and versed in discussions with adolescents and their families regarding reasonable expectations from treatment.

The traditional first approach to obesity treatment involving diet and behavior modification along with counseling yields limited results (BMI reduction ~3% over 1 year)[5,21] Closer examination of these strategies reveals a modest effect as a stand-alone strategy. The need for extensive in-person contact, easy accessibility of appropriate dietary and exercise programs, as well as qualified behavioral specialists unfortunately makes this a relatively ineffective approach. This is even more true in adolescents with severe obesity.[22] Furthermore, these programs continue to be plagued by high rates of recidivism and challenges in sustainability.[23]

It is no surprise that patients and providers search for more definitive and effective measures, such as pharmacotherapy and surgery. One of the criticisms of aggressive measures in adolescence has traditionally been the lack of long-term data on the sustainability of health benefits. However, resolution of comorbidities appears to persist in available long-term surgical studies. Indeed, the long-term data is heterogeneous in the surgery groups (involving older and younger adolescents, as well as predominantly gastric sleeves or Roux-en-Y bypass procedures). However, even with those constraints, sustained weight loss in excess of 25% with meaningful and durable improvements in comorbidities are generally observed.[24-27]

Approved traditional pharmaceutical agents in younger patients, such as orlistat and metformin are few in number and generally limited in effect, even when combined with lifestyle interventions.[28,29] However, the rapid integration of new classes of anti-obesity medications (AOMs) into the paradigm of obesity and Type 2 DM treatment in adults has predictably extended into pediatric treatment models. Not unlike adult prescribers, pediatric providers are blazing this trail without algorithms validated by long-term data. The available short-term and early data often guide the decision to start medications, as well as the perception that (especially older) adolescents respond to treatment in ways similar to adults.[30,31]

Newer anti-obesity medications may provide a sought-after compromise between delay of treatment and surgery. The reversibility and substantial weight loss effects of the medications often satisfy the reluctance to acknowledge and address the need for early treatment. In fact, a recent NEJM study reported on the potential beneficial use of these medications in pre-adolescent patients.[32] However, the trends in treatment modalities remain unclear. A recent analysis of MBS utilization before and after the approval of glucagon-like peptide-1 receptor agonists (GLP1-RAs) demonstrated a decrease in MBS in adults in the years 2022–2023, but an increase in adolescents in the same time period. Importantly, there was significant heterogeneity in trends among different ethnic groups, with MBS utilization increasing in the Hispanic population. The suggested explanation involves a combination of updated AAP recommendations and the improvement in MBS insurance coverage compared to that of GLP1-RAs in the studied time period.[33] The sustainability of pharmaceutical management remains uncertain. In adult literature, up to 65% of patients stop taking GLP-1RAs, which may be due to financial constraints, side-effects, or both.[8,34] While it is yet unknown if a similar trend would be observed in adolescents, it stands to reason that over a longer time period, these medications could become one component of multipronged obesity treatment, rather than a stand-alone treatment.

SURGERY AND AOMS

The role of post-operative GLP-1 levels in creating a variable post-operative result has been suggested.[35,36] Recently, Vidmar et al reported on the observations of post-MBS adolescents who restarted AOMs as early as three-four weeks after surgery. No significant differences in adverse events were observed and those patients who restarted their medications reported reduced hunger and emotional overeating, among other behavioral factors. Importantly, this strategy resulted in greater reduction in BMI at earlier time-points, suggesting a synergistic effect of surgery and pharmacotherapy on GLP-1 axis.[37]

In summary, practical approaches to pediatric and adolescent obesity treatment remain a critical objective. In general, providers should focus on a sophisticated and patient-centered approach to align realistic goals and expectations with available treatments. While the treatment arsenal has become more sophisticated in recent years due to improvement in surgical and pharmaceutical approaches, a unifying algorithm for the treatment of pediatric and adolescent obesity does not yet exist. Newer anti-obesity medications will have a number of specific and off target effects, many of which could be beneficial for the treatment of obesity, addiction, and potentially mental health disorders.[38] Combined with surgical approaches, these treatments will likely become a mainstay of earlier intervention in adolescent obesity.

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