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LOW-CALORIE SWEETENERS IN OBESITY TREATMENT: A PROMISE FOR THE FUTURE?

NISKOKALORYCZNE SUBSTANCJE SŁODZĄCE W LECZENIU OTYŁOŚCI: OBIETNICA NA PRZYSZŁOŚĆ?

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Authors' contribution
Wkład autorów:
A. Study design/planning
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B. Data collection/entry
zebranie danych
C. Data analysis/statistics
dane – analiza i statystyki
D. Data interpretation
interpretacja danych
E. Preparation of manuscript
przygotowanie artykułu
F. Literature analysis/search
wyszukiwanie i analiza literatury
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Dear Editor,

We read with great interest the study by Reimisz which addressed the issue of whether zero calorie sweet drinks are able to induce sensory-specific satiety in order to reduce appetite for sweets [1]. We feel that it brings up a relevant matter, as overweight and obesity are gradually becoming more and more significant morbidities among many societies, and physicians are striving to find the most effective approaches that would limit their incidence and severity.

Obesity rates have seen a significant surge in recent years. In 2015, around 604 million adults and 108 million children were estimated to be affected by obesity [2]. The prevalence of obesity has more than doubled in over 70 countries since 1980, and this rising pattern is observable worldwide [2]. Obesity is connected to a range of comorbidities that have a great impact on mortality rates and overall quality of life, including cardiovascular disease, diabetes, chronic kidney disease, non-alcoholic steatohepatitis, and different types of cancer [2]. Individuals aged 20 to 29 who are overweight are predicted to have a decrease in life expectancy by about 3.3 years, while those categorized as obese or severely obese might face a reduction in lifespan ranging from 5.6 to 10.3 years [3].

Currently there are three medications approved in the European market to address obesity, comprising liraglutide, orlistat, naltrexone or bupropion [4]. Another approach addressed by numerous studies has been to consume low/non-calorie sweetened beverages (LNCSBs) alone, or to replace sugar-sweetened

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beverage (SSB) with LNCSBs in order to evaluate LNCSBs' potential beneficial effect on body weight, waist circumference, and sweet cravings. Most results were, however, ambiguous.

The study conducted by Reimisz [1] revealed that replacing sparkling water with an LNCSB may lead to reducing the amount of sweets consumption after a meal, thereby achieving an appetite-suppressing effect. These results are of major significance, as high calorie intake may result in developing overweight and obesity. Similarly promising outcomes were presented in a recent comprehensive review and meta-analysis of 12 randomized controlled trials by McGlynn et al. [5]. The replacement of SSBs for LNCSBs led to a reduction of body weight of 1.06 kg over a median 12-week period. Importantly, no adverse effects were observed, and the favorable outcomes resembled those observed when the substitution was water [5].

While LNCSBs could serve as a useful strategy to decrease calorie intake and avoid weight increase, research into the safety and effectiveness of these substances over both short-term and long-term use is limited and the outcomes are contradictory. Consequently, future studies should be aimed to clarify the potential advantages and possible drawbacks associated with the use of various sweeteners in both healthy individuals, as well as those affected by other disease entities such as metabolic syndrome, diabetes, overweight and obesity.

References:

1. Reimisz P. Effect of zero calorie drinks on sensory-specific satiety. Health Prob Civil. 2023; 17(2): 161-168. https://doi.org/10.5114/hpc.2023.127590
2. Afshin A, Forouzanfar MH, Reitsma MB, Sur P, Estep K, Lee A, et al. Health effects of overweight and obesity in 195 countries over 25 years. N Engl J Med. 2017; 377(1): 13-27. https://doi.org/10.1056/NEJMoa1614362
3. Lung T, Jan S, Tan EJ, Killedar A, Hayes A. Impact of overweight, obesity and severe obesity on life expectancy of Australian adults. Int J Obes (Lond). 2019; 43(4): 782-789. https://doi.org/10.1038/s41366-018-0210-2
4. Tak YJ, Lee SY. Anti-obesity drugs: long-term efficacy and safety: an updated review. World J Mens Health. 2021; 39: 208-22. https://doi.org/10.5534/wjmh.200010
5. McGlynn ND, Khan TA, Wang L, Zhang R, Chiavaroli L, Au-Yeung, F, et al. Association of low- and no-calorie sweetened beverages as a replacement for sugar-sweetened beverages with body weight and cardiometabolic risk: a systematic review and meta-analysis. JAMA Network Open. 2022; 5(3): e222092. https://doi.org/10.1001/jamanetworkopen.2022.2092