INTRODUCTION

Obesity and metabolic syndrome, along with the risk factors that contribute to the development of these diseases, are critical concerns for healthcare providers and public health officials. The incidence of cancer diagnosis, cardiovascular disease, peripheral artery disease, stroke, ischemic heart disease, congestive heart failure, chronic kidney disease, and many other disease states are increased in the context of obesity (Frish, 2016). According to the CDC the age-adjusted prevalence of obesity, defined by a BMI of >30, among US adults in 2017-2018 was 42.4% (Hales, 2020).

A literature review was conducted to include high quality systematic reviews, randomized controlled trials, and case reports. The prevalence of the metabolic syndrome rose from 25.3% during the 1988-1994 study period to 34.2% in the 2007-2012 study period (Moore, 2017). Weight stigma has been shown to trigger physiological and behavioral changes linked to poor metabolic health and increased weight gain. In laboratory experiments, when study participants are exposed to weight stigma, their eating increases (Tomiyama, 2018). Furthermore, individuals who report experiencing weight stigma had a 60% increased risk of death and were 2.5 times more likely to suffer from mood or anxiety disorders (Tomiyama, 2018).

A sample of 2284 physicians showed a severe explicit and implicit anti-fat bias, even among specialists treating obesity-related conditions (Tomiyama, 2018).

METHODS

A literature review was conducted to include high-quality systematic reviews, randomized controlled trials, and case-cohort studies. Searches were conducted through PubMed with cross reference to primary sources. Controversial or unsettled claims were excluded from the aggregated teaching materials. A pilot of the module was delivered on November 18, 2021 to fourth year medical students. The pre/post survey will continue to be employed for third and fourth year medical students as part of the advanced science curriculum.

RESULTS

THE CASE

A 41-year-old obese male presents to your office to establish a new relationship. He has not seen a doctor in the last ten years. During your interview you discover that he feels well overall with a few “minor” problems. He tells you he has been “peeling a lot” more than he used to. He also indicates he has increased thirst and complains his mouth is dry “all the time”. He also indicates that he deals with frequent nausea. His nausea seems to come on shortly after eating and resolves on its own. He indicates occasionally drinking water will improve his nausea. He has no pertinent past medical history. His family history is significant for a mother with diabetes and rheumatoid arthritis and a sister with fatty liver disease. His only medication is occasional bismuth subsalicylate for his nausea. His Temperature today is 37.1°C, Pulse is 92, Blood pressure is 152/96, respiratory rate is 20 and his pulse ox on room air is 93%. His BMI is 43.8.

CASE BASED DISCUSSION/THOUGHT QUESTIONS (examples)

How would you begin the work-up for this patient?

• What dietary patterns might our patient be accustomed to that would prime his gut microbiome toward an inflammatory state?

• How might increased levels of LPS play a role in the development of insulin resistance in our patient?

• Given what you know about inflammation, what inflammatory lab abnormalities might we uncover in our patient?

LECTURE CONTENT

The content is broken into sections with summary slides at the conclusion of each section highlighting the important learner take-aways. The sections include Inflammation, Metabolic Syndrome, and Pharmacotherapy targets.

RESULTS PRE/POST SURVEY

The pre/post survey results is the number of respondents that participated in both the lecture and survey. Limitations regarding in-person learning at the University of Colorado School of Medicine in the context of the ongoing COVID-19 pandemic hindered a more robust pilot of the lecture. The material will be delivered to larger groups of students as part of the advanced science curriculum for third- and fourth-year medical students. The pre/post survey will continue to be employed for the continued development of the curriculum.

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We declare there are no conflicts of interest.

REFERENCES


QR Code abbreviated Slides

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