Bariatric Surgery and the Risk of Cardiovascular Disease in Adults with Nonalcoholic Fatty Liver Disease and Severe Obesity

Abstract: Nonalcoholic fatty liver disease (NAFLD) is the most common chronic liver disease in the United States, with an estimated prevalence of 25% in adults. NAFLD is the hepatic manifestation of metabolic syndrome since it is closely linked to obesity-induced insulin resistance, dyslipidemia, and hypertension. Evidence shows positive associations between NAFLD and higher risks of cardiovascular disease (CVD) independent of the traditional risk factors of CVD, including obesity. These findings suggest that NAFLD plays a significant intermediary role in the CVD-obesity relationship. Interventions that target NAFLD-associated obesity could potentially reduce the incidence of CVD in this patient group. However, pharmacological agents for NAFLD are currently not available, and the benefits of lifestyle modifications have proven difficult to sustain. Bariatric surgery results in long-term improvements in NAFLD markers, and it has been shown to reduce the risk of CVD in general populations. Although bariatric surgery promotes long-term weight loss and improves obesity-related diseases in the general population, the impact of bariatric surgery on the risk of CVD in NAFLD patients has not been investigated. To tackle this knowledge gap, we conducted a cohort study to examine the comparative effectiveness of bariatric surgery in reducing the risk of CVD in NAFLD patients.

About the Speaker: Dr. Mohamed I Elsaid is a post-doctoral scholar in the Department of Biomedical Informatics at the Ohio State University. He received a B.A. in Mathematics and a B.S. in Civil Engineering from Thomas Edison State University in 2010, a Master of Liberal Arts from Harvard University in 2013, a Master of Public Health from New York Medical College in 2014, and a Ph.D. in Epidemiology from Rutgers University in 2020. During his doctoral work, he received training in clinical epidemiology, biostatistical methods, and outcomes research. Before joining the Department of Biomedical Informatics, he worked for five years as an educational research specialist in the Department of Gastroenterology and Hepatology at Robert Wood Johnson Medical School. Dr. Elsaid is interested in studying the impacts of nonalcoholic fatty liver disease on the relationship between obesity and increased risk of upper gastrointestinal cancers. He also conducts research on the applications of machine learning methodologies in causal inference research.