Medical Dialogues (15.03.2022)

Higher BMI improves pulmonary function and lowers complications in Cystic fibrosis

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Higher BMI associated improves pulmonary function and lowers complications in CF, according to a recent study published in the JAMA Network Open.

The prevalence of overweight (body mass index [BMI] = 25-29.9 [calculated as weight in kilograms divided by height in meters squared]) and obesity (BMI ≥30) is increasing among patients with cystic fibrosis (CF). However, it is unclear whether there is a benefit associated with increasing weight compared with the reference range (ie, normal) in CF.

Researchers conducted a study to evaluate the association of altered BMI or body composition and clinical outcomes in patients with CF.

For this systematic review and meta-analysis, the literature search was conducted November 2, 2020, of 3 databases: MEDLINE (via PubMed), Embase, and Cochrane Central Register of Controlled Trials.Patients older than 2 years diagnosed with CF with altered body composition or BMI were compared with patients having the measured parameters within the reference ranges. Records were selected by title, abstract, and full text; disagreements were resolved by consensus. Cohort studies and conference abstracts were eligible; articles with no original data and case reports were excluded.

Two authors independently extracted data, which were validated by a third author. Studies containing insufficient poolable numerical data were included in the qualitative analysis. A random-effects model was applied in all analyses. Pulmonary function, exocrine pancreatic insufficiency (PI), and CF-related diabetes (CFRD) were investigated as primary outcomes. Odds ratios (ORs) or weighted mean differences (WMDs) with 95% CIs were calculated. The hypothesis was formulated before data collection.

The Results of the study are as follows:

Of 10 524 records identified, 61 met the selection criteria and were included in the qualitative analysis. Of these, 17 studies were included in the quantitative synthesis. Altogether, 9114 patients were included in the systematic review and meta-analysis. Overweight (WMD, –8.36%; 95% CI, –12.74% to –3.97%) and obesity (WMD, –12.06%; 95% CI, –23.91% to –0.22%) were associated with higher forced expiratory volume in the first second of expiration compared with normal weight. The odds for CFRD and PI were more likely in patients of normal weight (OR, 1.49; 95% CI, 1.10 to 2.00) than in those who were overweight (OR, 4.40; 95% CI, 3.00 to 6.45). High heterogeneity was shown in the analysis of pulmonary function (I2 = 46.7%-85.9%).

Thus, the researchers concluded that the findings of this systematic review and meta-analysis suggest that the currently recommended target BMI in patients with CF should be reconsidered. Studies with long-term follow-up are necessary to assess the possible adverse effects of higher BMI or higher fat mass in patients with CF.

Reference:

Association of Body Mass Index with Clinical Outcomes in Patients with Cystic Fibrosis: A Systematic Review and Meta-analysis by Rita Nagy, et al. published in the JAMA Network Open.