Obesity and Coronavirus Disease 2019 (COVID-19)

Zohreh Sadat Sangsefidi; MSc1,2 & Mahdieh Hosseinzadeh; PhD1,2

1 Department of Nutrition, School of Public Health, Shahid Sadoughi University of Medical Sciences, Yazd, Iran.
2 Nutrition and Food Security Research Center, Shahid Sadoughi University of Medical Sciences, Yazd, Iran.

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The current evidence indicates that obesity is one of the main risk factors related to hospitalization, intensive care, and mortality among patients with COVID-19 (Földi et al., 2020, Kalligeros et al., 2020, Pettrilli et al., 2020, Pranata et al., 2020, Yang et al., 2020). Obesity-related disorders including dysfunction of immune system, chronic inflammation, endothelium imbalance, metabolic dysfunction, and its associated comorbidities may promote pulmonary fibrosis and lead to lung functional failure, as characteristic of severe COVID-19 (Ritter et al., 2020). Furthermore, overweight and obesity can limit diaphragm movement, decrease functional lung capacity, and eventually result in hypoventilation (Dietz and Santos-Burgoa, 2020). Obesity may also impair motile cilia on airway epithelial cells, disrupt the function of mucociliary escalators, and decrease the clearance of severe acute respiratory syndrome coronavirus (Ritter et al., 2020). In addition, obesity is associated with chronic inflammation and impaired fibrinolysis that increases the risk of developing thrombosis and worsens lung damage (Muscogiuri et al., 2020).

Difficulty in early diagnosis by pulmonary ultrasound due to mechanical issues related to excessive weight is another important factor involved in the increased risk of severe forms of COVID-19 among the patients with obesity. This may lead to a delay in diagnosis and increased mortality rate (Muscogiuri et al., 2020). Moreover, the lack of designed medical or intensive care units for obese patients and the difficulties of intubation and insertion of catheters related to excess of weight may delay the therapeutic processes and worsen the prognosis in obese patients with COVID-19 (Muscogiuri et al., 2020). Therefore, identifying the risk factors related to morbidity and mortality of COVID-19 is important to take appropriate prevention and therapeutic measures. Individuals with overweight and obesity are among the high-risk group related to COVID19 who should be considered more seriously. Furthermore, preventive and curative interventions are required to decrease the probability of disease development in COVID-19 cases.

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Authors’ contribution
Hosseinazadeh M conceived the original idea and designed the scenarios. Zohreh SS collected the data and wrote the draft of manuscript. Hosseinazadeh M critically revised the manuscript and confirmed the final version of it to submit. All authors read and approved the final version of manuscript.

Conflict of interest
The authors declared that there was no conflict of interest.

References


