

Both underweight and obesity are associated with an increased risk of corona virus disease 2019(COVID-19) severity

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Abstract

Background: As COVID-19 evolved into a global pandemic. Increasing numbers of reports have linked obesity to more severe COVID-19 illness and death (1-3). However, almost all the studies focused on the proportion of people entering the ICU or mortality. Is obesity also associated with severity of pneumonia in common pneumonia patients? How about underweight patients? The answer is lack. So, our research below will answer the question. Methods: We collected and analyzed epidemiological, demographic, clinical, and laboratory data from 193 confirmed cases of COVID-19 at Union Hospital, Tongji Medical College, Huazhong University of Science and Technology in Wuhan, China, between January 1, 2020, and March 13, 2020. They were followed up until April 15, 2020. Results: Among these patients, 5.70% were underweight, 58.03% were normal weight, 27.98% were overweight and 8.29% were obese. underweight patients were more likely to have headache ($P=0.029$) Obese patients were more likely to experience a decline in lymphocyte counts($P=0.042$), an increase in CRP($P=0.020$), bilateral multiple mottling and groundglass opacity ($P=0.008$). Besides, the proportion of patients receiving human immunoglobulin+systematic corticosteroids treatment is the highest among the obese group compared with other BMI groups. After adjusting for potential confounders, Underweight patients had 6.483-fold higher($P=0.012$),and obesity patients showed 5.965-fold higher odds developing acute lung injury(ALI) than normal weight patients($P=0.022$). Underweight patients were 3.255 times more likely than normal-weight patients to develop secondary infections ($P=0.041$). Conclusions: Our study shows that in patients with common pneumonia, both underweight and obese people tend to develop ALI compared with normal weight patients.

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