

Fat around waist more important than obesity in predicting severity of COVID-19

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New research presented at this year's European Congress on Obesity (held online, 10-13 May) shows that fat around the waist (abdominal obesity) is more important than general obesity as shown by body mass

index (BMI) in predicting the severity of chest X-ray results in patients with COVID-19. The study is by Dr. Alexis Elias Malavazos, I.R.C.C.S.Policlinico San Donato, San Donato Milanese, Italy, and colleagues.

Previous research has established that both chest X-ray (CXR) severity score and obesity are predictive risk factors for COVID-19 hospital admission. However, the relationship between [abdominal obesity](#) and CXR severity score is not fully explored. This [retrospective cohort study](#) analyzed the association of different methods of measuring obesity, including waist circumference and body mass index (BMI), with CXR severity score in 215 hospitalized patients with COVID-19.

CXR severity scores are calculated by dividing each lung into 3 zones, and each zone scores a maximum of 3 points where from zero representing normal lung performance up to 3 points for the poorest lung function. Thus the maximum (and therefore worst) CXR score is 18 points.

In this study, a high CXR severity score was defined as 8 or over. Patients with abdominal obesity had significantly higher CXR severity scores (median 9) versus those without abdominal obesity (median 6). Of those with abdominal obesity, 59% had a high CXR score compared to 35% without abdominal obesity. Both findings were statistically significant.

When looking at the traditional method for determining obesity using BMI, there were no statistically significant differences in scores between those with normal weight, overweight or general obesity, while rates of high scores were also similar between groups (33% versus 39% versus 31% for [normal weight](#), overweight and obesity, respectively, again not statistically significant).

Both waist circumference and waist-to-height ratio correlated more closely with CXR severity score than BMI, especially for high CXR severity scores. Analysis of and adjustment for multiple patient variables showed that abdominal obesity, [bronchial asthma](#) and [oxygen saturation](#) on admission were the only independent predictors of a high CXR severity score.

Patients with abdominal obesity were at a 75% increased risk of a higher CXR severity score (and therefore a worse COVID-19-related outcome) than those without abdominal obesity. Bronchial asthma increased the risk of a high CXR severity score by 73%, while high oxygen saturation in the blood (95% or higher) on admission to hospital reduced the risk of high CXR score by 4% compared with those patients with lower oxygen saturation.

The authors conclude: "Abdominal obesity might predict a high chest X-ray severity score better than general obesity in hospitalized patients with COVID-19. Therefore, in hospital, [waist circumference](#) should be measured and patients with abdominal [obesity](#) should be monitored closely."

Provided by European Association for the Study of Obesity

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