COVID-19. A case series .

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Case series presentation

Eight elderly confirmed SARS-CoV-2 patients who had severe course of COVID-19 and admitted to ICU expressed high lactate dehydrogenase (LDH) above normal level. The mean value of LDH was 440.40 U/L with 84.52 standard deviation (normal range = 100 – 190 U/L). The mean age of patients was 73.63 years (standard deviation = 3.34). The patients were 4 males (50%) and 4 females (50%). The median of stay duration at ICU was 2 days (range = 1-32 days). Four patients died (50%) and four patients survived (50%). All the patients were at the same ICU and received the same treatment course for COVID-19.

Discussion

It has been shown that LDH is a potential marker of vascular permeability in immune-mediated lung injury. Areas within the body where LDH are most active include the liver, striated muscles, heart, kidneys, lungs, brain, and red blood cells. LDH is a known marker for different inflammatory states, sepsis, myocardial infarctions, infections, and malignancies. One study showed that LDH elevation was associated with a 6-fold increase in the odds of developing a severe COVID-19 disease. Furthermore elevated LDH was associated with a 16 fold increase in patient mortality. Elevated LDH levels seem to reflect that the multiple organ injury and failure may play a more prominent role in influencing the clinical outcomes in patients with COVID-19. This study is a report of 8 elderly critically ill COVID-19 patients who expressed high lactate dehydrogenase above normal level. This indicates that lactate dehydrogenase can predict the outcome of elderly COVID-19 patients. All the eight patients developed severe course of COVID-19, four of them died.

Conclusion

High levels of lactate dehydrogenase can predict the severity and mortality of COVID-19 in elderly patients. LDH levels could be considered for inclusion in future risk stratification models for COVID-19 severity and mortality. More observational studies with high sample sizes are needed to establish a significant association between high levels of lactate dehydrogenase and severity or mortality of COVID-19 in elderly patients.