

CORRELATION OF D-DIMER AND CRP LEVELS WITH THE PRESENCE OF SEVERE DYSPNEA IN PATIENTS WITH COVID-19 INFECTION

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ABSTRACT : Many investigations has been employed for detection of COVID-19 infection. Of these, D-dimer and CRP is used for evaluate the presence of systemic response against corona virus insult. The aims of this study is to evaluate if D-dimer and CRP are significantly increased in patient with respiratory manifestation of COVID-19 rather than other body system involvement or not. 80 male patients were selected randomly, divided in 2 groups; 40 patients who presented with severe respiratory distress symptoms and 40 patient presented with symptoms other than respiratory features (mostly gastric symptoms with high fever). CRP and D-dimer tests were done and data were used for subsequent statistical analysis. There was significant difference in the level of both CRP and D-dimer between patient with dyspnea and those with no respiratory manifestation of COVID-19. In conclusion, high level of both CRP and D-dimer is highly suggestive respiratory insult and future complication of COVID-19.

Key words : COVID-19, CRP and D-dimer, dyspnea.

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INTRODUCTION

In our time, corona virus (which is RNA virus) pandemic became a big health disaster for humanity due to high rate of infectivity, diverse presentations, with critical death rate (COVID and Team, 2020). It was estimated that about 170,000 proved cases with about 7,000 deaths in more than 100 countries occurred in 2019 with subsequent increase in these numbers up to now (Fauci *et al*, 2020). The most dangerous impact of this disease is the acute respiratory distress which represented by severe hypoxia that may eventually causes multi-systemic complications (Zu *et al*, 2020). Many techniques were employed to predict the occurrence and for follow up of this disease. C-reactive protein (CRP) is one of most important inflammatory proteins that rise dramatically in early phases of respiratory insult [which is normally varies between 0.8 mg/L to 5.0 mg/L (Ling, 2020)]. On the other hand, estimation of D-dimer (which is a fragmented protein that can be detected after blood clotting normally is < 500 ng/mL) (Perrier *et al*, 1997) is another supporting tool that predict the severity of COVID-19 infection and the higher level of D-dimer,

the higher death rate is expected (Zhang *et al*, 2020).

PATIENTS AND METHODS

In this study, 80 male patients were selected randomly, they were categorized in 2 groups; 1st group were 40 patients, who presented with severe respiratory distress symptoms with severe hypoxia (PaO₂ is less than 75 detected by digital pulse oxy-meter) and 2nd group of 40 patient presented with symptoms other than respiratory features (mostly gastric symptoms with high fever). All of these patients were approved to get COVID-19 infections by preliminary PCR test. For all patients, both CRP and D-dimer tests were done and data were used for subsequent statistical analysis

RESULTS AND DISCUSSION

In this study, it was found that there is a close association between high level of both CRP and D-dimer with the underlying severe respiratory symptoms of COVID-19 infection as shown in Table 1.

These findings suggesting that high level of death rare that associated with severe dyspnic presentation of COVID-19 is correlated with coagulopathy that predicted