The Dynamic Alteration in Levels of Serum Amyloid a As an Indicator of Prediction Severity Of COVID-19 Infection in Iraqi Population.

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- **Abstract:** The ongoing pandemic COVID-19 of severe acute respiratory syndrome by coronavirus 2 (SARS-CoV-2) continues to have several diagnostic and therapeutic challenges. As on July 20, 2021, there were 190,169,833 confirmed cases worldwide with 4,086,000 confirmed deaths. Therefore, It is important to know the best biomarkers which might be associated with disease severity in order to avoid more death cases. The biomarkers that studied in COVID-19 were vary and they have significant role in the diagnosis, treatment, and prediction of the clinical outcomes of patients. Recently, it has been reported that Acute phase reactants (APRs) have important role for the early diagnosis, treatment, and for monitoring the progression of COVID-19. The most important APRs that used in COVID-19 are CRP, Ferritin, TNF-a, IL-6, IL-1ß, Fibrinogen, Albumin, the ESR, Procalcitonin, LDH, D-dimer, Hs-TnI, and Serum amyloid A (SAA). Currently, there are few reports about the relationship between SAA and COVID-19 severity, Serum amyloid A (SAA) is a plasma component and the precursor of amyloid. It is an acute-phase protein mainly produced by the liver in response to proinflammatory cytokines that are secreted by the activated monocytes. Therefore, this paper was aimed to review the background documents on the state of the art of the scientific literature in this area of work. Also review the feasibility of employed serum amyloid A protein levels towards COVID-19 severity since it has an ability to promote inflammatory response through activating chemokine and inducing chemotaxis even at a very low concentration.

- **Keywords:** diagnostic and therapeutic challenges, clinical outcomes, acute-phase protein