

Role of Surfactant Protein D (SP-D) as a Biomarker of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) Infection

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Abstract : The involvement of plasmatic surfactant protein-D (SP-D) in pulmonary diseases has been long investigated, and over the last two years, more interest has been directed to determine its role as a marker of COVID-19. In this direction, several studies aimed to correlate pulmonary surfactant proteins with the clinical manifestations of the virus indicated SP-D as a prognostic biomarker of COVID-19 pneumonia severity. The present work has performed a retrospective study on a relatively large cohort of patients of Hospital Pio XI of Desio (Lombardia, Italy) with the aim to assess differences in the hematic SP-D concentrations among COVID-19 patients and healthy donors and the role of SP-D as a prognostic marker of severity and/or of mortality risk. The obtained results showed a significant difference in the mean of log SP-D levels between COVID-19 patients and healthy donors, so as between dead and survived patients. SP-D values were significantly higher for both hospitalized COVID-19 and dead patients, with threshold values of 150 and 250 ng/mL, respectively. SP-D levels at admission and increasing differences among follow-up and admission values resulted in the strongest significant risk factors of mortality. Therefore, this study demonstrated the role of SP-D as a predictive marker of SARS-CoV-2 infection and its outcome. A significant correlation of SP-D with patient mortality indicated that it is also a prognostic factor in terms of mortality, and its early detection should be considered to design adequate preventive treatments for COVID-19 patients.

Keywords : SARS-CoV-2 infection, COVID-19, surfactant protein-D (SP-D), mortality, biomarker

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