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Soluble Urokinase Receptor as a promising marker for early prediction of outcome in COVID-19 hospitalized patients

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The Coronavirus disease 2019 (COVID-19), caused by SARS-CoV-2, has rapidly spread to become a global pandemic, putting a strain on health care systems. SARS-CoV-2 infection may be associated with mild symptoms or, in severe cases, lead patients to intensive care unit (ICU) or death. The critically ill patients suffer from acute respiratory distress syndrome (ARDS), sepsis, thrombotic complications and multiple organ failure. For optimization of hospital resources, several molecular markers have been evaluated in order to stratify COVID-19 patients, based on the risk of developing a mild or severe disease.

More recently, soluble urokinase receptor (suPAR) has attracted scientific interest because it seems to discriminate better than some other biomarkers among patients with different severities of illness. We investigated the newly introduced inflammatory marker suPAR in hospitalized patients affected by different forms of COVID-19, from mild to severe disease or death. In a wide population of acute medical patients, suPAR is strongly associated with disease severity and mortality, suggesting that suPAR could be used in the clinic as a prognostic indicator.
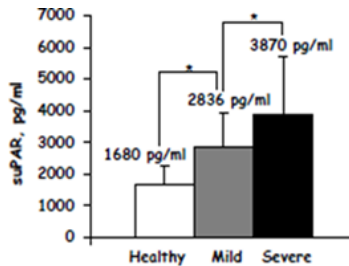

Figure 1. Analysis of serum suPAR levels in COVID-19 hospitalized patients during Italian second wave. Serum suPAR levels in healthy controls (white column), mild cases (grey column) and severe cases of COVID-19 (black column); *p < 0.05.

Recent Publications

1. D'Alonzo, D.; De Fenza, M.; Pavone, V. COVID-19 and pneumonia: a role for the uPA/uPAR system. Drug Discov Today 2020, 25, 1528-1534.

2. Rovina, N.; Akinosoglou, K.; Eugen-Olsen, J.; Hayek, S.; Reiser, J.; GiamarellosBourboulis, E.J. Soluble urokinase plasminogen activator receptor (suPAR) as an early predictor of severe respiratory failure in patients with COVID-19 pneumonia. Crit Care 2020, 24, 187.

3. Chalkias, A.; Mouzarou, A.; Samara, E.; Xanthos, T.; Ischaki, E., Pantazopoulos, I. Soluble Urokinase Plasminogen Activator Receptor: A Biomarker for Predicting Complications and Critical Care Admission of COVID-19 Patients. Mol Diagn Ther

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Biography

Filomena Napolitano was born on August 25, 1988, in Avellino, Italy. She graduated in Pharmaceuticals Biotechnology in 2013 at the University of Naples Federico II, Italy; in 2017 she obtained a PhD in Experimental and Clinical Medicine, at the University of Naples Federico II, Italy. In 2021, she became Specialist in Clinical Pathology and Clinical Biochemistry, University of Naples Federico II, Italy. Actually, she is postdoctoral fellow at School of Medicine and Surgery, University of Naples Federico II. She has her expertise in the study of the expression and functions of the urokinase receptor (uPAR) and FPRs, a class of innate immunity receptors, in tumor cells and inflammatory cells, being interested in the identification of new inhibitors with anti-cancer activity.

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