

317 Aldosterone and interleukin-6: the synergic effect in COVID-19

Pasquale Campana¹, Maria Emiliana Palaia¹, Maddalena Conte¹, Laura Petraglia¹, Lorenzo Ferrante², Leosco Dario¹, and Valentina Parisi¹

¹Università degli Studi di Napoli Federico II, Italy, and ²A.O.U.I. Borgo Trento, Verona, Italy

Aims: Several evidence have identified the role of Interleukin-6 (IL-6) in the cytokine storm induced by COVID-19. Interestingly, the correlation between the serum levels of IL-6 and the plasma aldosterone has already been demonstrated in patients affected by primary aldosteronism (PA). Thus, we suppose that hyperaldosteronism may increase IL-6 levels in COVID-19.

Methods and results: We report a case of 47-year-old female Covid-19 patient who had developed severe pneumonia complicated by Guillain-Barreé syndrome (GBS). Blood test revealed high levels of IL-6 (serum IL-6: 402 pg/ml) and of its soluble receptor (soluble IL-6 receptor >1900 pg/ml) and she required mechanical ventilation for severe hypoxaemia. Furthermore, the evidence of right adrenal adenoma, resistant hypertension, severe hypokalaemia, and high serum levels of aldosterone with high aldosterone/renin ratio were also consistent with diagnosis of PA. Thus, Spironolactone was administered with rapid improvements in clinical condition. Finally, she was diagnosed with acute motor sensitive neuropathy and started the rehabilitation phase.

Conclusions: Elevated aldosterone levels in PA may stimulate IL-6 production, inducing more severe forms of COVID-19 with the development of serious complications such as GBS. Hyperaldosteronism may also contribute to the poorest prognosis of patients with secondary aldosteronism such as heart failure and COVID-19, in which elevated IL-6 levels could exert its detrimental effects, mostly on the progression of ventricular dysfunction. Further studies are necessary to evaluate therapy with mineralocorticoid receptors antagonists such as spironolactone in COVID-19.