

Letter to the Editor

Ticagrelor Can Be an Important Agent in the Treatment of Severe COVID-19 Patients with Myocardial Infarction

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In Coronavirus disease 2019 (Covid-19) pneumonia, it has been shown that 71.4% of non-survivors and 0.6% of survivors had disseminated intravascular coagulation (DIC), and the majority of non-survivors had increased D-dimer level (1). TNF- α and IL-6 variants are also known to be risk factors for pneumonia-induced septic shock in intensive care patients (2). We believe that the ADP receptor inhibitor ticagrelor should be considered in the treatment of concomitant Covid-19 pneumonia and myocardial infarction (MI) because it may contribute to patient survival. There are three main reasons for this considering the pathogenesis of Covid-19 pneumonia and the course of the disease. First, the initially identified pleiotropic effects of ticagrelor based on the subgroup analysis of the PLATO study, sepsis and pulmonary infections are less common in individuals using ticagrelor. This is because it reduces levels of proinflammatory factors as well as platelet reactivation via A2A and A2B adenosine receptors and ultimately prevents DIC development (3). Second, ticagrelor has been shown to reduce lung injury by reducing thromboinflammatory markers in patients with pneumonia (4). Finally, patients with Covid-19 may develop superinfections during the course of their treatment. These additional problems may not be detected in patients who are already treated under challenging conditions. A recent study showed that ticagrelor at the conventional dose has shown more antibacterial activity against many antibiotic-resistant gram-positive bacteria than the most potent antibacterial agents currently available (5).

In conclusion Covid-19 pneumonia is a pandemic with significant mortality that is spreading very quickly, and there is uncertainty regarding when it will be completely terminated, and more importantly, no clear treatment has been yet confirmed (1). Its co-existence with MI, which is the most fatal disease in the world, makes the situation even more devastating. We believe that ticagrelor will play a very important role in the survival of patients, especially is those with concomitant Covid-19 and MI. Considering all these pleiotropic effects of ticagrelor, it can significantly contribute to the survival of patients with MI co-existing with Covid-19 regardless of whether percutaneous intervention or medical treatment is given. Even when Covid-19 is not accompanied by MI, the use of ticagrelor should be considered for patients with Covid-19 whose prognosis worsens and D-dimer level gradually increases.

REFERENCES

1. Tang N, Li D, Wang X, Sun Z. Abnormal coagulation parameters are associated with poor prognosis in patients with novel coronavirus pneumonia. *J Thromb Haemost* 2020;18(4):844-7.
2. Acar L, Atalan N, Karagedik EH, Ergen A. Tumour Necrosis Factor-alpha and Nuclear Factor-kappa B Gene Variants in Sepsis. *Balkan Med J* 2018;35:30-5.
3. Kubisa MJ, Jezewski MP, Gasecka A, Siller-Matula JM, Postula M. Ticagrelor-toward more efficient platelet inhibition and beyond. *Ther Clin Risk Manag* 2018;14:129-40.
4. Sexton TR, Zhang G, Macaulay TE, Callahan LA, Charnigo R, Vsevolozhskaya OA, et al. Ticagrelor reduces thromboinflammatory markers in patients with pneumonia. *JACC Basic Transl Sci* 2018;3(4):435-49.

5. Lancellotti P, Musumeci L, Jacques N, Servais L, Goffin E, Pirotte B, et al. Antibacterial activity of ticagrelor in conventional antiplatelet dosages against antibiotic-resistant Gram positive bacteria. *JAMA Cardiol* 2019;4:596-9.

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