

Can statins be beneficial in Covid 19 patients?

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Letter to the editor

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Covid 19 remains a novel pandemic with many controversies and variable clinical expression and severity. Diabetes and a pre-existing cardiovascular disease are the greatest risk factor for severe Covid 19. The overall case fatality rate of 2.3 % in the general population increases to 7.3 % in presence of diabetes & 10-15 % in presence of a pre-existing cardiovascular disease (1). Age, smoking, arterial hypertension, hypercholesterolemia, diabetes & obesity predict a severe Covid 19.

MyD88 gene seems to be highly induced in SARS-CoV infection which activates NFkB pathway, reduces type 1 interferon & increases inflammation, hallmark triad of SARS-CoV infection (2,3). Modified LDL cholesterol is absorbed via scatter receptors into cells & form crystals that activate NLRP3 inflammasome – caspase- 1 activity increasing the release of IL-1b & IL-18 (4). Oxidized LDL cholesterol binds to Toll-like family receptors which activates inflammation via MyD88 & NFkB pathway and increase transcription of inflammatory cytokines such as IL-6, IL-12, IL-27 & TNF alpha (4).

Statins inhibit the MyD88 pathway maintaining normal levels during hypoxia or under stress (2), and the attenuation of NFkB increased the survival of SARS-infected transgenic mice (3). The ability of statins to maintain MyD88 at normal levels may be protective for Covid 19 patients as the attenuation of NFkB inflammatory pathway reduces IL-6 and other inflammatory cytokines transcription. Furthermore, mortality was lower in COPD & influenza patients on moderate doses of statins compared to patients without statin therapy (5).

In our prospective cohort study, all 65 patients hospitalized for Covid 19 received Pitavastatin known for less drug interaction and muscular toxicity and better liver tolerability. Mean age was $53,1 \pm 18,3$ years and 60% were male. At database lock date, 80% of the patients were discharged with a median length of stay of 8 days, five remained in an isolation unit, one in ICU and only two patients were dead.

The ACE receptor seems to have also an important role in this disease. Thus, controlling cardiovascular risk factors tightly & exploring more the pathophysiology of Covid 19 will lead to a better comprehension of severity and variability of this disease in order to implement a better management.

Competing Interests' Statement: NONE

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