

## STATINS IN DYSLIPIDEMIA CORRECTION

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**Introduction.** High cholesterol level can lead to many health problems including coronary heart disease, stroke, hypertension, endothelial dysfunction, diabetes mellitus type 2 complications. Discovering of statins revolutionized the treatment of hypercholesterolemia.

**Aim.** The aim of our study was to summarize modern knowledge of lipid-lowering medications “Statins”, in particular, their mechanism of action, side effects and application for patients with COVID 19.

**Materials and methods.** We analyze 97 scientific articles using electron database PubMed for medicine and archives of the Journal ”Atherosclerosis” with key words “statins history of development”, “statins mechanisms of action”, “statins Covid 19” for the last 10 years (2001-2021).

**Results and discussion.** Statins are inhibitors of 3-hydroxy-3methylglutaryl-coenzyme A (HMG-CoA) reductase. Reaction catalyzed by this enzyme is the major point of cholesterol synthesis regulation. Cholesterol biosynthetic pathway was finally completed by 1960 and from that point searching for HMG-CoA reductase inhibitors began. To the end 1970<sup>th</sup> was discovered lovastatin and in 1982 it became the first commercial statin. In treating patients it dramatically decreased cholesterol level. Since that time in vivo and in vitro experiments as well as in clinical studies and patients` monitoring, HMG-CoA reductase inhibitors have been clearly proved to be highly efficacious at reducing blood levels of LDL cholesterol. They could decrease cardiac mortality and improved diabetic dyslipidemia.

Therefore, available evidence suggests some disorders under statin therapy. Nearly all of HMG-CoA reductase inhibitors are associated with musculoskeletal side effects. Myalgia is the most common consequence from statin use. Also were reported hepatic and renal dysfunction, peripheral neuropathy, malignancy, etc. However, these medications appear to be safe for the majority of patients.

The COVID 19 pandemic caused by SARS-Co-2 raised a lot of different questions, in particular, how to combine different medications therapy. While some physicians suggested that use of statins associated reduced risk of mortality in patients with SARS as agents against potential coronary endothelial dysfunction, others find no significant reduction.

**Conclusions.** Currently, according to the statistic more than 30 million of patients are taking statins because they are highly effective as cholesterol-lowering agents.

## COMPARATIVE CHARACTERISTICS OF APPROACHES FOR DESIGNING A VACCINE AGAINST SARS-COV-2

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**Introduction.** Coronavirus Disease 2019 (COVID-19) is caused by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2), a newly emerged coronavirus, and has been pandemic since March 2020 and led to many fatalities. Vaccines represent the most efficient means to control and stop the pandemic of COVID-19.