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Key publications

**VICE and DICE scores improve management of COVID-19 patients**

COVID-19 remains an enigmatic viral infection with effects that can range from mild to devastating. Risk scores have been developed to recognize and improve the management of those at increased risk for severe and not seldom fatal complications. The VICE (ventilation in COVID-19 estimator) and DICE (death in COVID-19 estimator) risk scores are based on a retrospective analysis of clinical data collected in a cohort of COVID-19 patients admitted to the Mass General Brigham hospitals in Boston, US. In total 1042 Patients, admitted before May 19, 2020, were included (median age 64 yr., 56.8% males, all with a laboratory-confirmed diagnosis). The patients were divided into a derivation (N=578) and validation cohort (N=464). For mechanical ventilation requirements, four factors were critical (DM, SpO2:FiO2 ratio, CRP, and LDH). The DICE
score is based on 10 variables (age, male sex, coronary artery disease, DM, chronic statin use, SpO2:FiO2 ratio, body mass index, neutrophil to lymphocyte ratio, platelet count, and procalcitonin). Chronic statin use was associated with reduced mortality risk, OR: 0.467 (0.237-0.920, p=0.028). Both scores had a good performance, with C-statistics of 0.84 and 0.91, respectively. These risk scores support clinicians to stratify risk in COVID-19 patients; this could improve early recognition and management of those that would benefit from more intensive treatment as well as increase the efficiency of resource utilization. Both VICE and DICE are freely available for HCP’s and researchers


Metabolic syndrome in NHANES participants is a risk enhancing factor

Metabolic syndrome (MS) constitutes a greater burden of lifetime risk tenacity than the sum of the individual risk components. In this NHANES analysis (1999 - 2016), MS’s impact as a risk enhancing factor was evaluated in 26 796 US adults (14-75 yrs.). Based on the pooled cohort risk equation (PCE), patients were grouped into three 10-year risk categories, low risk (<7.5%), intermediated risk (7.5% - 20.0%), and high risk (>20%). In 90.4% of the NHANES participants were no ASCVD was present. In those categorized as low risk, 15% and 17% of the females and males were MS+; this increased to 30.6% and 29.6% in those considered intermediate risk and 21.5% and 32.2% in the high-risk category. For DM+ this was 6.1% - 5.3% (F - M) of low-risk individuals, 20.1 - 14.8% (F - M) of intermediate-risk subjects, and 44.3% - 39.4% (F - M) of high-risk persons. Both MS+ and DM+ incidence increased with age in women and men. Based on their findings, the authors suggested using MS as a lifetime risk enhancing factor for determining statin eligibility based on the intermediate-risk group, according to the PCE estimation. For females in the intermediate-risk category, a calcium score = 0 could identify those in whom statin therapy could be delayed. In males, a calcium score measurement would not be advised; only a small percentage of the male NHANES participants were found to have CAC score=0. Noteworthy is that almost 2/3 of the patients were diagnosed with DM or MS in the high-risk category.

Can statins prevent AF recurrence after cardioversion?

A single-center registry was used to evaluate the effects of statins on AF recurrence after cardioversion (CV). Between 2012 and 2015, 454 consecutive patients treated with electrical or pharmacological cardioversion were included. Using a Cox regression statistical model, statin users were compared with patients that did not take statins. Statins were used by 183 (40.3%) of the included patients. After a median follow-up of 373 (207-805) days, AF recurrence was observed in 150 (33%) of the patients. Those that used statins had a significantly reduced risk (log-rank p<0.001) for AF recurrence. This translated into an HR of 0.333 (0.225-0.493) based on univariate analysis and an HR: 0.238 (0.151-0.375; p<0.001) after adjustments. Based on propensity score matching, statin use was associated with a 27.5% lower risk for AF recurrence vs. 53 (45.7%) controls; P<0.001. The authors concluded that prolonged statin use was associated with a reduced long-term risk for AF recurrence.


Statins and antiplatelets associated with reduce VTE and mortality risk in COVID-19 patients

Patients suffering from COVID-19 complications have an increased risk for thromboembolic complications. Patients admitted to New York Metropolitan hospitals between March 1 and April 27 were evaluated for VTE rates and mortality within 8-hrs of admission. Of the 10 871-hospital admitted COVID-19 patients, 118 (1.09 %) had symptomatic VTE (101 pulmonary embolism and 17 DVT events). In total, 28 (0.26%) patients died during the initial assessment. Key medications included corticosteroids (22.6%). Statins (21.2%), antiplatelets (20.6%) and anticoagulants (20.6%). Elevated D-dimer levels (> 6 x the ULN) were found in 51.4% of the patients. both statin and antiplatelet use were significantly associated with a decrease in both VTE and mortality risk (P<0.01). to better understand the potential benefits of statins and anti-platelets, prehospital admission, in patients presenting with COVID-19 complications, additional studies are warranted.

Statin associated myopathy an update on novel insights

This review provides insights into the current understanding of statin-associated myopathy. It shares new insights into the role of specific ion channels (CLC-1 chloride channel) that could be a potential susceptible target for statin side effects. Changes in these channels due to aging or pre-existing myopathies increase the risk of statin-triggered muscle complications. Oxidative as well as glycolytic metabolic changes and sarcopenia, prime muscle fibers to become sensitized for stress conditions and trigger myopathy. Elderly patients and those with specific risk factors such as diabetes, hypothyroidism, renal disease are at risk for metabolic changes that promote muscle complaints and statins exacerbate. Careful monitoring of these high-risk patients or even avoiding statin prescriptions could prevent muscle complications. Potential treatments to increase CL channel activity are suggested. Pharmacological agents that target AMPK and Coenzyme Q10 supplements could both help to reduce this risk are discussed in this review.


Relevant publications


3. Ying Q, Chan DC, Watts GF. New Insights Into the Regulation of Lipoprotein Metabolism by PCSK9: Lessons From Stable Isotope Tracer Studies in Human


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