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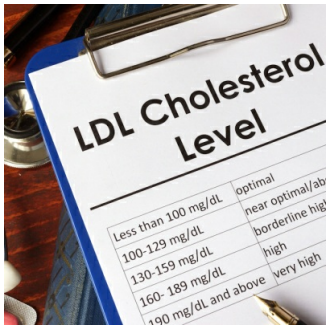
Comparing Lipid Guidelines: ESC vs. 2018 ACC/AHA



The European Society of Cardiology's Guideline for the Management of Dyslipidaemias was announced at ESC 2019, nine months after the publication of the 2018 ACC/AHA Multisociety Guidelines for the Management of Blood Cholesterol. A major question for healthcare professionals around the globe is: how do these two guidelines compare? What are the differences and the similarities? Here is a short overview:

Similarities

Similarities remain in both guidelines, for example, the increased statin therapy use and the intensity of treatment to risk levels. Emphasis is on LDL-C as a primary target for treatment is evident in both guidelines through both pharmacotherapy and improved lifestyle choices. As evidence suggests, each LDL-C decrease results in approximately 22% reduction in cardiovascular disease (CVD) risk. In both guidelines, a reduction of 50% or more in LDL-C is recommended, however, if these levels are not reached then non-statin therapy is suggested for 'high-risk' patients.

Also, both guidelines agree on using accepted scoring systems to assess cardiovascular risk. For example, the ACC/AHA ASCVD (Arteriosclerotic Cardiovascular Disease) Risk Estimator and the European SCORE (Systematic COronary Risk Evaluation), along with shared clinical decision-making. More specific recommendations are also made if there is an increased risk for the patient based on risk factor modifiers.

Differences

'Very High-Risk' Patient Definition

Whilst there are some similarities between the two guidelines, key differences have been noted in the definitions of the very high-risk patient and how they should be managed.

ACC/AHA states that these very high-risk patients are essentially 'secondary prevention' patients, which defines individuals that have had two major ASCVD events. Whereas, ESC states that very high-risk describes any patient with a documented ASCVD, whether clinically or through imaging. Therefore, ESC includes additional patients in this cohort than the ACC/AHA recommendations.

Risk Modifiers

ACC/AHA considered factors which could modify the risk of CVD, eg age, family history etc, in its guidelines. In the ESC Guidelines, other additional factors were included, eg obesity, social depression etc. It should be noted that these factors be weighted relative to each other. Also, sex-reproductive factors were not mentioned even though they have been proved to modify risk of CVD.

'Very High-Risk' Patient Management

For the management of very high-risk patients, ACC/AHA guidelines state that ezetimibe may be used after statin therapy has been maximised. Ultimately, the goal is to reduce LDL-C by 50% or more.

ESC suggests, as well as the reduction by 50%, that LDL-C should be less than 55 mg/dL for Type 2 Diabetes Mellitus (T2DM) patients with a very high risk of CVD. However, ACC/AHA recommends moderate statin treatment for diabetic patients, giving clinicians the option to change to high-intensity statin therapy if the patient has multiple risk enhancers which are diabetes-specific.

ACC/AHA Thresholds

The ACC/AHA Guideline recommends a threshold of 70 mg/dL before the use of non-statin therapy for very high-risk patients. This is the same threshold as stated in both the FOURIER (Further Cardiovascular Outcomes Research with PCSK9 Inhibition in Subjects with Elevated Risk) and ODYSSEY OUTCOMES (Evaluation of Cardiovascular Outcomes After an Acute Coronary Syndrome During Treatment with Alirocumab) clinical trials. Including a threshold for treatment options allows the patient to be involved in clinical decision-making.

The guideline also recommends the use of ezetimibe to be given first, in this case, as it can be administered orally and is generic. The goal of therapy from an ACC/AHA perspective is to base it on those that would benefit the most, for example, those with high TIMI Risk Scores.

European Goals/Targets

For PSCK9 inhibitors in patients, the ESC is more aggressive in its goals set, aiming for both a reduction by 50% or more and less than 55 mg/dL for LDL-C levels, whereas ACC/AHA has a 70 mg/dL cut-off.

A consequence of these changing targets is that if the ACC/AHA guidelines are first followed, then patients will drop below the ESC goal, significantly. Therefore, the ESC goal will most likely affect patients with LDL-Cs between 55-70 mg/dL, allowing more patients to meet the criteria for PCSK9 inhibitors.

ESC Citations

Results from the Cholesterol Treatment Trialists' (CTT) Collaboration, IMPROVE-IT (IMProved Reduction of Outcomes: Vytorin Efficacy International Trial), FOURIER and ODYSSEY-OUTCOMES trials were all cited in the ESC Guideline to support the recommended goal of less than 55 mg/dL. Additionally, the FOURIER and ODYSSEY-OUTCOMES trials were used to support the goal of less than 40 mg/dL for patients taking the maximum statin therapy that can be tolerated and have had two vascular events in the past two years.

The ESC Guidelines used extrapolated results of direct trial evidence to make their recommendations. For example, the use of the Friedewald equation was used indicating an underestimation of LDL-C levels, especially at the lower levels, in patients with increased triglycerides. This means that the stated goals may be met often, when in fact the LDL-C levels are a lot higher.

Also, cost-benefit rates were considered in the ACC/AHA Guidelines whereas in the European recommendations this was not mentioned.

Conclusion

In conclusion, the differences highlighted between the ESC and ACC/AHA Guidelines should not be used to warrant clinical inertia. Differences should allow questions to be raised on the evidence behind the guidelines and to gain a better understanding of the reasoning behind these decisions. It should be noted that benefits remain to both guidelines and both still lead to the reduction of CVD events.

Source: American College of Cardiology
Image Credit: iStock

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