COMPARISON OF ACHIEVING 2019 ESC/EAS VERSUS 2018 ACC/AHA LDL-C GOALS FOR PATIENTS WITH ATHEROSCLEROTIC CARDIOVASCULAR DISEASE: A CARDIOVASCULAR RISK SIMULATION FROM THE DA VINCI STUDY

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Abstract

Background: European and American guidelines recommend different LDL-C goals for ASCVD patients. We simulated the residual CV risk for 2019 ESC/EAS versus 2018 ACC/AHA LDL-C goals (<55 versus <70 mg/dL).

Methods: From the Da Vinci study (Ray et al., 2020), we predicted 10-year CV risk using REACH equation among ASCVD patients receiving stabilized lipid-lowering therapy (no change in dose or frequency for ≥28 days). For patients with LDL-C ≥70 mg/dL, we: 1) calculated the absolute LDL-C reduction required to achieve LDL-C levels of 69 and 54 mg/dL; 2) simulated the relative risk reduction by randomly sampling from the inverse distribution of the rate ratio per 39 mg/dL in the CTTC meta-analysis; 3) calculated the absolute risk reduction and residual CV risk for LDL-C levels of 69 and 54 mg/dL.

Results: Of 2039 patients, 1238 (61%) did not achieve LDL-C <70 mg/dL. Median (interquartile range) baseline LDL-C and 10-year CV risk in these patients were 93 (81-115) mg/dL and 32% (25%-43%), respectively. LDL-C reductions of 24 (12-46) and 39 (27-61) mg/dL were needed to achieve LDL-C levels of 69 and 54 mg/dL, respectively. Attaining ACC/AHA and ESC/EAS LDL-C goals resulted in lower 10-year CV risks of 28% (20%-37%) and 25% (18%-34%), and in absolute risk reductions of 4% (2%-7%) and 6% (4%-9%), respectively (Figure).

Conclusion: In ASCVD patients, achieving ESC/EAS LDL-C goals results in a further 50% relative (2% absolute) reduction in residual CV risk compared with achieving ACC/AHA goals.