Comparison of Apolipoprotein B and Low-Density Lipoprotein Cholesterol as Atherosclerotic Cardiovascular Risk Factors

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ABSTRACT

Many large-scale studies have reported that current American Heart Association and American College of Cardiology guidelines overestimate Atherosclerotic Cardiovascular Disease (ASCVD) risk by 75% to 150%. People who achieve their low-density lipoprotein (LDL) target with active statin therapy remain at a residual risk for cardiovascular disease and have high levels of apolipoprotein B (ApoB). The goal of this retrospective case-control study was to compare LDL and ApoB as predictors of ASCVD. The Centers for Disease Control and Prevention's National Health and Examination Survey data from 2013 to 2014 was the data source for this study. Around 5768 subjects participated in the study and 1522 participants met the study criteria. Of these, 162 (male = 93, female = 69) were cases (participants with ASCVD) and 1360 (male = 629, female = 731) were controls (participants without ASCVD). The chi-squared test, correlation coefficient, and logistic regression were used to analyze data. A P value of <0.05 was considered to be significant. The study indicated that ApoB and LDL were strongly correlated (correlation coefficient = 0.8). Furthermore, LDL cholesterol was associated with ASCVD ($P < 0.05$) but ApoB did not correlate with ASCVD ($P > 0.05$). Logistic regression results indicated that cases were 3 times more likely to have an increased LDL value but not likely to have an increased ApoB when compared to controls. The study concluded that LDL is an independent predictor of ASCVD and is a better marker than ApoB.

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