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A meta-analysis of meta-analyses comparing LDL cholesterol, non-HDL cholesterol, and apolipoprotein B as markers of vascular risk

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This talk will combine and compare two meta-analyses. One included all the published epidemiological studies that contained estimates of the relative risks of LDL-C, non-HDL-C, and apoB predicting fatal or non-fatal ischemic cardiovascular events. Twelve independent reports, including 233,455 subjects and 22,950 events, were analyzed. Standardized relative risk ratios and confidence intervals were LDL-C: 1.25 (1.18, 1.33), non-HDL-C: 1.34 (1.24, 1.44) and apoB: 1.43 (1.35, 1.51), 5.7%>non-HDL-C (p<0.001) and 12.0%>LDL-C (p<0.001). The other meta-analysis included 7 placebo-controlled statin trials in which LDL-C, non-HDL-C, and apoB values were available. Mean CHD risk reduction (95% CI) per standard deviation decrease in each marker across these 7 trials were 20.1% (15.6%, 24.3%) for LDL-C; 20.0% (15.2%, 24.7%) for non-HDL-C; and 24.4% (19.2%, 29.2%) for apoB, 21.6% (12.0%, 31.2%)>LDL-C (p<0.001) and 24.3% (22.4%, 26.2%)>non-HDL-C (p<0.001). The inverse of treatment HRs from the trial meta-analysis were similar to the risk ratios from the observational meta-analysis indicating that parameters from both kinds of studies may be useful for projecting the number of events which can be avoided under different preventive treatment strategies.

Biography

Ken Williams received a BS in Applied Math from Georgia Tech in 1971 and an MS in Operations Research from the Air Force Institute of Technology in 1980. He served in the US Air Force for 22 years in Computer Systems and Scientific Analysis. He also served 10 years as a Biostatistician at the University of Texas Health Science Center at San Antonio where he remains an Adjunct Faculty Member. He has been a Freelance Biostatistician with KenAnCo Biostatistics since 2007. Designated a Professional Statistician (PStat) in the inaugural 2011 litter, he has published more than 100 papers in peer-reviewed journals.

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