PATIENT-LEVEL DISCORDANCE IN POPULATION PERCENTILES OF THE TC/HDL-C RATIO, NON-HDL-C, AND LDL-C: INSIGHTS FROM THE VERY LARGE DATABASE OF LIPIDS STUDY (VLDL-2)

Poster Contributions
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Background: The TC/HDL-C ratio, Non-HDL-C, and LDL-C are each routinely available in clinical practice. Considerable patient-level discordance between these markers would suggest the possibility of complementary information.

Methods: We assigned population percentiles to TC/HDL-C, Non-HDL-C and LDL-C in 1,340,614 U.S. adults from the Very Large Database of Lipids (VLDL). Lipid testing was performed by direct ultracentrifugation (Atherotech, Birmingham, AL). LDL-C was estimated by the Friedewald formula, excluding patients with triglycerides ≥400 mg/dL (N=30,174; 2.3% of sample). We examined discordance by calculating the absolute difference in percentile units between these lipid markers.

Results: Spearman correlation (ρ) between TC/HDL-C and LDL-C percentiles was 0.56 while ρ between TC/HDL-C and Non-HDL-C percentiles was higher (0.71). The proportion of patients with > 10 percentile units difference between TC/HDL-C and LDL-C percentiles was 65% and between TC/HDL-C and Non-HDL-C percentiles was 60%. Similarly, the proportion of patients with > 25 percentile units difference was 31.2% and 24.8%, respectively.

Conclusion: ~1 in 4 individuals have a discordance of > 25 percentile units between TC/HDL-C and Non-HDL-C and ~1 in 3 individuals have a discordance of > 25 percentile units between TC/HDL-C and LDL-C. In instances of discordance, implications for risk assessment must be explored and there may be value in considering multiple lipid parameters in treatment decisions.