adults in the US population. Approximately 69 million adults (33% of the population) are at high or intermediate CHD risk, and many are not at their LDL-C goal, highlighting the need for more aggressive identification and treatment of patients at risk, objectives articulated by the ACC/AHA guideline.

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Statin Use In Adults With Diabetes Before And After Guideline Revisions From Leading Medical Associations*

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Lead Author's Financial Disclosures: None
Study Funding: None

Background/Synopsis: The 2013 ACC/AHA Guidelines on the Treatment of Blood Cholesterol recommend statin for all patients with diabetes, aged 40-75 years and LDL-C≥70mg/dl. ADA guidelines were updated to match ACC/AHA guidelines. NLA's recommendations for patient-centered management of dyslipidemia published in 2014, recommend use of statin in patients with diabetes if they have 0-1 major ASCVD risk factors (RF) and LDL-C≥100mg/dl, or ≥2 RF and LDL-C≥70mg/dl, or evidence of end-organ damage and LDL-C≥70mg/dl. The impact of cholesterol treatment guidelines on prescribing statins in diabetes is uncertain.

Objective/Purpose: To describe the prescribing patterns of statins in adults with diabetes before and after guidelines revisions.

Methods: This cross-sectional study analyzed a convenience sample of adult patients with diabetes from 77 practices seen at least twice within an 18-month period to evaluate changes in statin use before (pre-2014) and after (post-2014) 2014. Only patients with available LDL-C were included. LDL-C was categorized as <70mg/dl, 70-99mg/dl and ≥100mg/dl. Statin use was defined as currently taking statin drug at time of visit. The outcome of interest is odds ratio (OR) with 95% CI of taking statin. Multivariate logistic regression models were used adjusting for age, sex and LDL-C levels. STATA 13.1 was used for all calculations. P<0.05 was used for statistical significance.

Results: A total of 47,661 patients [pre-2014=38,611 (43% men); post-2014=9,050 (46% men)] was assessed. Median age was 59years (range18-79) versus 64 years (18-79), median LDL-C was 86mg/dl (15-480) versus 76mg/dl (15-359) and proportion of statin use was 67% versus 69% in pre-2014 versus post-2014 respectively. In age- and sex-adjusted multivariate analysis, statin use was lower post-2014 (OR 0.77, 95%CI 0.71-0.85, p<0.001) when LDL-C<70mg/dl, unchanged for LDL 70-100mg/dl, (OR 1.02, 95%CI 0.93-1.11; p=0.72), and lower when LDL-C≥100 (OR 0.89; 95%CI 0.81-0.97; p=0.01). In the multivariate analysis adjusted for sex and LDL-C level, statin use was unchanged post-2014 in age<40 (OR 0.88, 95%CI 0.71-1.01;p=0.28), lower in age 40-75 (OR 0.91,95%CI 0.86-0.96; p=0.001), and lower in age >75 (OR 0.72, 95%CI 0.61-0.86; p<0.001).

Conclusions: Since 2014, the odds of statin use in adults with diabetes is lower in general. Findings were consistent among younger and older adults. Despite greater consistency among national guidelines for statin use, adoption by endocrinologists and PCPs remains suboptimal. Patient and provider factors that could limit statin use in adults with diabetes, such as patient tolerance or adherence, physician education, and co-morbidities, warrant further evaluation.

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Do The Lipid Profiles Of Type 2 Diabetes Mellitus Patients And Controls Differ Based On Their Body Fat Percentage And Visceral Fat Levels?*

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Lead Author's Financial Disclosures: None
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Background/Synopsis: Body fat percentage (BF%) including both the visceral and subcutaneous levels of an individual is positively associated with hypertension, dyslipidemia, diabetes and coronary heart disease. Analysis of BF% using Bio Impedance Analyzer (BIA) is the most convenient, relatively simple, quick and non-invasive method when population based studies are concerned.

Objective/Purpose: Aim of this study was to determine whether the lipid profiles of female Type 2 Diabetes Mellitus (T2DM) patients and controls differ based on their risk and non risk BF% and visceral fat levels.

Methods: T2DM patients and non-diabetic (each n=24) females living in North Central province of Sri Lanka were selected using convenient sampling method. Ten and twelve hour fasting blood samples were collected for determination of fasting blood sugar (FBS) and lipid profile assays [total cholesterol (TC), serum triglyceride (TG), high density lipoprotein (HDL)cholesterol, low density lipoprotein (LDL) cholesterol] using standard kits. BF% and visceral fat level were determined using BIA (OMRON HBF-362) analyzer. BF% ≥ 30 was considered as obese and visceral fat level ≥9 considered as the risk level (manufacturer's cut off data).

Results: FBS levels of T2DM group and control group were 129.9 mg/dl, 82.9 mg/dl respectively and were significantly different (p<0.05). However, the lipid profile values were not significantly different between two groups except for TG level (p=<0.05). Among cases and controls

hypercholesterolemia, hypertriglyceridemia, reduced HDL levels and increased LDL levels were presented in 33.3%, 33.5%, 45.8%, 29.2% of cases and 37.5%, 42.0%, 16.7%, 41.7% of controls whose BF% were ≥30% respectively. However, none of the lipid parameters were significantly different among the two groups. When visceral fat levels were concerned hypercholesterolemia, reduced HDL levels and increased LDL levels were presented in equal percentage of cases (8.3%) as well as controls (8.3%) for all these three parameters whose visceral fat level is ≥9. None of the cases or controls with visceral fat levels ≥9 was having hypertriglyceridemia indicating that the risk cut off value suggested by the manufacturer for the visceral fat level may not be optimum to deduce the risk for the current population.

Conclusions: As the groups with BF% ≥30 or visceral fat levels ≥9 did not show any significant differences in lipid parameters compared with the non-risk groups among these T2DM patients and controls, studies are currently being carried out with a larger sample size to understand whether the body fat levels associate with dyslipidemia regardless of having diabetes.

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Genetic and Functional investigation of LPL Independent Pathways of TG-Rich Lipoproteins Catabolism in Severe Hypertriglyceridemia and Chylomicronemia

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Lead Author's Financial Disclosures: None

Study Funding: None

Background/Synopsis: Lipoprotein lipase (LPL) is a key enzyme of TG-rich lipoproteins metabolism. LPL deficiency (LPLD) is a rare and orphan recessive cause of familial chylomicronemia syndrome (FCS) due to homozygosity for null LPL gene variants (HoLPL) and absence (<5%) of LPL activity. Heterozygotes for the same mutations present 50% of normal LPL activity. Recent data obtained with an apoC-III antisense oligonucleotide (ASO) in LPLD support APOC3 as a key regulator of LPL-independent pathways of TG-rich lipoproteins metabolism.

Objective/Purpose: To investigate gene expression profiles, functional transcripts, metabolic pathways and lipoprotein characteristics in patients with severe hypertriglyceridemia presenting a wide spectrum of LPL activity (HoLPL, HeLPL, compound HeLPL) vs normal LPL controls.

Methods: A total of 53 subjects were divided into three groups: 19 LPLD (HoLPL); 20 HeLPL for the same mutation and 14 normolipemic controls (wild-type LPL). Lipoproteins characteristics and associated markers were assessed following sequential ultracentrifugation. RNA samples were extracted from whole blood PAXgene and hybridized on Affymetrix Human Gene 2.0 ST Array according to manufacturer standard procedures. RMA normalization has been applied on probe raw intensities. Differential expression moderated T-tests between studied groups were performed using a linear model of the Bioconductor package Limma. FDR estimations were carried out using the Benjamini-Hochberg method. Biological pathways analyses have been performed using the Qiagen IPA software.

Results: Functional analyses showed that chylomicrons of HoLPL patients were more oxydized ($p<0.001$) and richer in isoprostanes, apoC-III and apoC-II than HeLPL and controls. HDL particles also presented specific characteristics. At a p-value < 0.01, a false discovery rate (FDR) of 5% and a >2-fold expression significance levels, 142 detected probes were differentially expressed in HoLPL and 67 in HeLPL compared to controls. Of the identified annotated probes, 29 are shared by HoLPL and HeLPL and 46 are specific to HoLPL. Most of the HoLPL specific annotated genes are involved in circadian, inflammation, oxidation, immune or signalling pathways, satiety, docking systems or receptor-mediated clearance mechanisms.

Conclusions: These results reveal potential markers of LPL-independent pathways of TG-rich lipoproteins metabolism in severe hypertriglyceridemia and chylomicronemia.

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Performance of the GLUCOCARD® Shine by Health Care Professionals Against the ISO 15197:2013 Accuracy Criteria

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Study Funding: None

Background/Synopsis: Blood Glucose Monitoring Systems (BGMS) are important tools used in the management of diabetes mellitus. Proper management of diabetes leads to the prevention of micro and macrovascular complications. The ISO (International Organization for Standardization) 15197:2013 is an accepted standard for the accuracy of BGMS. The accuracy boundaries of ISO 15197:2013 require 95% of BGM results to be within ±15mg/dL of the reference analyzer at glucose concentrations <100mg/dL and within ±15% of the reference analyze at glucose concentrations ≥100mg/dL. In addition, 99% of all results are required to be within the A and B zones of the Consensus Error Grid.

Objective/Purpose: The objective of this study is to determine in ongoing trending studies if the