Results: EAT from obese patients, particularly those with type 2 diabetes (T2DM), showed down-regulation of the glucose receptor GLUT-4 and up-regulation of inflammatory genes (IL1b, IL6, MCP1) and MET (meteorin). Secretome from Ow and Ob, particularly with T2DM, induced the release of MCP1 and IL6 in cardiomyocytes in the absence of cytotoxicity. In addition, secretomes from Ow and Ob tend to upregulate inflammatory genes and downregulate MET in AC16.
Conclusions: In summary, EAT of patients with Ow and Ob showed an increased inflammatory state and its released secretome induced an enhanced inflammatory response in cardiomyocytes.

P247 / #1094, Poster Topic: *AS02 LIPIDS AND LIPOPROTEINS / AS02.14 Other*

HOMOZYGOUS FAMILIAL HYPERCHOLESTEROLAEMIA: LOW DENSITY LIPOPROTEIN-CHOLESTEROL (LDL-C) MONITORING FOR 15 YEARS

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Background and Aims: Homozygous familial hypercholesterolaemia (HoFH) is a rare, genetic disease, involving a faulty elimination of low-density lipoprotein-cholesterol (LDL-C) and progression of earlier atherosclerotic cardiovascular disease (ASCVD). LDL-C is an important biological marker for the clinico-biological follow-up of cardiovascular risk, efficiency of lipid-lowering treatments including lipoprotein apheresis (LA) associated to classical or innovative therapies. Clinical and biological management of a HoFH 5-year-old child with 6.93 g/L (17.90 mmol/L) LDL-C, treated with LA over a period of 15 years (2008-2023). The follow-up every 2 weeks of LDL-C concentrations before and after each LA session was essential to evaluate the effectiveness of associated classic lipid-lowering treatments (statin + ezetimibe) and after adding innovative therapies (evolocumab and evinacumab).
Methods: The patient is hospitalized regularly every 2 weeks. Plasma samples (EDTA) were collected before and after each LA session for a routine lipid profile including LDL-C. From February 2008 to March 2018, the patient was treated with LA associated to statin + ezetimibe (P1), from April 2018 to September 2018, evolocumab was added (P2), then evinacumab has been introduced from October 2018 to October 2023 (P3).
Results: LDL-C concentration (mean±standard deviation) during P1 was 3.98 g/L±0.18 (10.30 mmol/L±0.466) at ante-apheresis vs. 1.05 g/L±0.12 (2.71 mmol/L±0.311) at post-apheresis, with a decrease of 74%. At P2, LDL-C was 3.3 g/L±0.459 (8.55 mmol/L±1.19) vs. 0.95 g/L±0.0817 (2.46 mmol/L±0.211) (-71% post vs. ante). LDL-C in P3 was 0.99 g/L± 0.16 (2.56 mmol/L ± 0.41) vs 0.34 g/L±0.29 (0.88 mmol/L±0.75) (-66%). P3 vs. P1 LDL-C showed a marked reduction of -75% ante and -68% post.
Conclusions: LDL-C concentration is an essential indicator in monitoring HoFH throughout the duration of different treatments. It demonstrates that classic lipid-lowering therapies help to avoid early ASCVD risk and the significant LDL-C reduction under innovative therapies highlights their effectiveness.

P248 / #135, Poster Topic: *AS02 LIPIDS AND LIPOPROTEINS / AS02.14 Other*

THE DANISH FAMILIAL HYPERCHOLESTEROLEMIA REGISTRY: MONITORING OF DIAGNOSTICS, DETECTION, AND TREATMENT QUALITY IN DENMARK.

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Background and Aims: To describe the findings from the nationwide Danish Familial Hypercholesterolemia (FH) registry established in October 2020 to ensure prospective monitoring of diagnostics, detection, and treatment quality of patients with FH in Denmark.
Methods: All 14 Danish lipid clinics are obligated to register patients referred on suspicion of FH. Data collection is based on record linkage with nationwide Danish health registries in combination with manual registration and includes a total of 14 quality indicators. A diagnosis of FH diagnosis is based on the Dutch Lipid Clinic Network Score.
Results: By July 1st 2023, a total of 9,213 individuals were registered with FH in Denmark, corresponding to 34% of the total FH population in Denmark expecting a population prevalence of 1:220. During the preceding year, 1,351 newly identified FH patients were registered. A total of 83% had a genetic test for pathogenic FH variants performed and 84% had a measurement of lipoprotein(a). Of all adult patients registered with FH in Denmark, 83% collected lipid-lowering treatment from a pharmacy in the preceding year with a corresponding value of 63% for children aged 10-18 years. Of the 78% of those with a lipid profile measurement during the preceding year, 60% had reached the LDL cholesterol goals of < 1.4 mmol/L with atherosclerotic cardiovascular disease, <1.8 mmol/L with diabetes, and <2.6mmol/L for all other patients.
Conclusions: In newly diagnosed individuals with FH in Denmark, 83% received a genetic test and 84% a lipoprotein(a) measurement. FH remain underdiagnosed and insufficiently treated in Denmark.

P249 / #526, Poster Topic: *AS02 LIPIDS AND LIPOPROTEINS / AS02.14 Other*

THE PATTERN OF LIPID LOWERING THERAPY FOR PRIMARY AND SECONDARY CARDIOVASCULAR PREVENTION IN EGYPT; PHASE-I OF THE CEPHEUS-3 STUDY

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Background and Aims: In Egypt, some studies, including the CardioRisk and CEPHEUS, highlight the prevalence of dyslipidemia and the suboptimal achievement of LDL-C therapeutic targets. As PCSK-9 based therapies emerging, evaluating current practices and goal attainment in lipid-lowering therapy in Egypt is crucial.
Methods: This observational cross-sectional study investigated lipid-lowering therapy (LLT) usage in primary and secondary cardiovascular prevention across Egypt. Patients, aged 18 or above and on stable LLT for at least 2 months, were enrolled during routine clinic visits. Data was collected via an electronic case report form (eCRF). The study aimed to understand the prescription patterns and LLT's role in achieving LDL-C goals as per the 2019 ESC/EAS guidelines, focusing on patients with stabilized LLT.
Results: In the period from September 2022 to October 2023, we enrolled 702 patients in the phase-I of the study (mean age 60±11 years, 47% females). Fifty one percent were taking LLT for primary prevention, and 49% for secondary prevention. Ninety nine percent of the total population were on statins (53% high-intensity, 46% moderate-intensity, and 0.4% low-intensity statins). Generic forms of statins were used in 64% of cases. Combination therapy with Ezetimibe was used in 45% of cases. Only 1.1% of cases were on PCSK-9 based therapy (all of them were receiving monoclonal antibodies). Regression analysis showed that old age, female gender, and low CV risk category were significant independent predictors for not using high-intensity statins. According to 2019 ESC guidelines, percentages of patients achieving their risk-based goals were 28%, 37%, 71%, and 41% in the very high-risk, high-risk, moderate-risk, and low risk categories respectively.
Conclusions: Egyptian clinical practices still don't fully align with guidelines for managing cholesterol. There's a need for increased use of non-statin lipid-lowering treatments, even alongside optimized statin therapy

P250 / #840, Poster Topic: *AS02 LIPIDS AND LIPOPROTEINS / AS02.14 Other*

THE LINK BETWEEN DYSLIPIDEMIA AND FERROKINETIC ALTERATIONS IS ASSOCIATED WITH WORSENING OF CARDIOVASCULAR DISEASES, ITS ROLE IN SOUTH AMERICAN COHORTS BEING IN-DEPTH UNKNOWN

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Background and Aims: The link between dyslipidemia and ferrokinetic alterations is associated with worsening of cardiovascular diseases, its role in South American cohorts being in-depth unknown.
Methods: Prospective analytical observational cohort study to determine the main comorbidities such as dyslipidemia and others, as well as the prognostic value of ferrokinetic alterations in patients with ischemic heart disease with and without ST segment elevation in a level IV hospital between July 2017 and May 2018.
Results: From a sample of 72 patients, the main affected gender was male, in ages over 56 years, with ST elevation infarction being the most frequent. The main comorbidity was dyslipidemia (n: 22; 53.7%) for infarction with elevation and (n: 23; 74.2%) for infarction without ST elevation. The most prevalent ferrokinetic alteration was iron deficiency, in (n: 15; 36.6%) of patients with ST elevation and (n: 13; 41.9%) without ST elevation. Low hemoglobin levels were present at admission (n: 10; 24.4%) of the subgroup with ST elevation and (n: 10; 32.3%) for those without ST elevation, increasing the percentage to (n: 13; 31.7%) (RR: 2)- (95% CI-0.131-30.63) , associated with low hemoglobin values on day 7 of hospitalization. There were 2 deaths (2.77%), which presented low iron levels without anemia and ST elevation infarction complicated with cardiogenic shock.
Conclusions: iron deficiency is a very common alteration with a higher mortality rate; likewise, the decrease in hemoglobin after hospital admission was related to mortality, so these parameters should be evaluated in ischemic heart disease and other cardiovascular diseases.

P251 / #799, Poster Topic: *AS02 LIPIDS AND LIPOPROTEINS / AS02.14 Other*

EXCESS APOB IN RISK OF CARDIOVASCULAR DISEASE AND MORTALITY IN WOMEN AND MEN

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Background and Aims: Low-density lipoprotein cholesterol (LDL-C) and apolipoprotein-B (apoB) are highly correlated measures of atherogenic lipoproteins. We hypothesized that excess apoB is associated with increased risk of myocardial infarction (MI), atherosclerotic cardiovascular disease (ASCVD), and all-cause mortality.
Methods: We included 53,484 women and 41,624 men not taking statins from the Copenhagen General Population Study. Associations of excess apoB with risk of MI, ASCVD, and all-cause mortality were estimated by Cox proportional hazards regressions with 95%confidence intervals. Excess apoB was defined as measured levels of apoB minus expected levels of apoB from LDL alone; expected levels were defined by linear regressions of LDL-C levels versus apoB levels in individuals with triglycerides ≤1mmol/L(89mg/dL).
Results: During a median follow-up of 9.6 years, 2048 MIs, 4282 ASCVD events, and 8873 deaths occurred. There was a dose-dependent association between excess apoB with risk of MI and ASCVD in both women and men, and with risk of all-cause mortality in women. For ASCVD in women compared to those with excess apoB<11mg/dL, the multivariable adjusted hazard ratio was 1.08 (95% confidence interval 0.97-1.21) for excess apoB 11-25mg/dL, 1.30 (1.14-1.48) for 26-45mg/dL, 1.34 (1.14-1.58) for 46-100mg/dL, and 1.75 (1.08-2.83) for excess apoB>100mg/dL. Corresponding hazard ratios in men were 1.14 (1.02-1.26), 1.41 (1.26-1.57), 1.41 (1.25-1.60), and 1.52 (1.13-2.05), respectively. Results were robust across the entire LDL-C spectrum.
Conclusions: Excess apoB, that is, the value of apoB above that contributed by LDL levels alone, is associated dose-dependently with increased risk of MI and ASCVD in women and men; demonstrating that apoB provides important predictive value beyond LDL-C across the entire LDL-C spectrum.

P252 / #684, Poster Topic: *AS02 LIPIDS AND LIPOPROTEINS / AS02.14 Other*

SEARCH FOR NATURAL SIALIDASE INHIBITORS: PROMISING THERAPEUTIC AGENTS FOR ATHEROSCLEROSIS TREATMENT

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Background and Aims: Recent studies indicate that low-density lipoprotein (LDL) modifications are a crucial stage in the atherosclerosis initiation, with desialylation being of particular interest among these modifications. Sialidases play a major role in LDL desialylation. Consequently, sialidases may serve as a promising therapeutic target for drugs aimed at treating atherosclerosis. This study aims to search for and identify natural compounds with the potential to inhibit sialidases.
Methods: Molecular docking was conducted using the Schrödinger program to search for the most active compounds. Pressurized liquid extraction was employed to obtain target compounds from plant materials. Purification and identification of the compounds were carried out using thin-layer chromatography, NMR and HPLC. Inhibitory activity was determined using the Sialidase Activity Assay Kit. Cytotoxicity of the compounds was assessed using an MTT test on THP-1 cells.
Results: The most active compounds were selected from flavonoids of plant origin, including Epigallocatechin, Kaempferol-7-O-neohesperidoside, Vescalagin, Avicularin, and Afrormosin-7-glucoside. Selected compounds were extracted from Camellia sinensis, Cichorium intybus, Castanea sativa and Vaccinium vitis-idaea, and subsequently purified. Percentage inhibition of sialidase and concentration of half-maximal inhibition (IC_{50}) were determined. The lowest IC_{50} were identified for Epigallocatechin (11.55±5) and Kaempferol-7-O-neohesperidoside (27.04±5). Conversely, IC_{50} for Vescalagin, Avicularin, and