patients with very high CV risk (**Figure**). Compared to previous reports, no new safety signals were observed during the follow-up period.

Table: Baseline demographics and patient characteristics - patients using BA or BA+EZE FDC.

	Patients (N=375)
Age, years, mean (SD)	65.8 (10.0)
Male, n (%)	245 (65.3)
HeFH, n (%)	31 (8.3)
Diabetes mellitus, n (%)	96 (25.6)
Primary prevention patients, n (%)	115 (30.7)
Secondary prevention patients, n (%)	260 (69.3)
Risk classification by investigator, n (%)	
Low risk	5 (1.3)
Moderate risk	33 (8.8)
High risk	65 (17.3)
Very high risk	270 (72.0)
LLT-derived drug combination prior BA initiation, n (%)	
No LLT documented	90 (24.0)
Statin monotherapy	62 (16.5)
Ezetimibe monotherapy	40 (10.7)
Statin + ezetimibe	136 (36.3)
PCSK9i monotherapy	5 (1.3)
PCSK9i combination	15 (4.0)
Any other oral LLT monotherapy	20 (5.3)
Any other oral combination LLT	7 (1.9)

Abbreviations: BA, bempedoic acid; BA-EZE FDC, bempedoic acid + ezetimibe fixed-dose combination or as separate pills; EZE, ezetimibe; HeFH, heterozygous familial hypercholesterolaemia; LDL-C, low-density lipoprotein cholesterol; LMT, lipid modifying therapy; PCSK9i, proprotein convertase subtilisin/kexin type 9 inhibitor; SD, standard deviation.

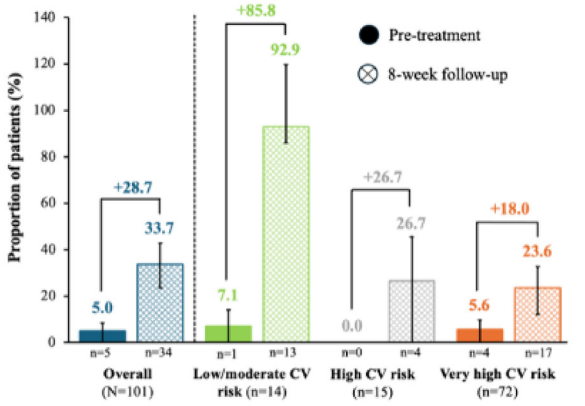

Figure: LDL-C goal attainment overall and by risk stratification at pre-treatment (before initiation of BA) and 8-week follow-up after BA or BA+EZE FDC treatment (N=101). Targeted LDL-C goal attainment was assessed based on to the recommendations outlined in the 2019 ESC/EAS guidelines. **Abbreviations:** BA, bempedoic acid; BA-EZE FDC, bempedoic acid + ezetimibe fixed-dose combination; EAS, European Atherosclerosis Society; ESC, European Society of Cardiology; LDL-C, low-density lipoprotein cholesterol.

Conclusions: Data from the Belgian cohort of the MILOS study showed that adding BA or BA+EZE for 8 weeks, with or without other LLTs, was associated with an over 6-fold increase in the proportion of patients achieving their LDL-C goal.

SaaG048 / #774
SAAG SESSION: EMERGING LIPID-LOWERING STRATEGIES: MECHANISMS, PRE-CLINICAL STUDIES AND OUTCOMES
05-05-2025 1:30 PM - 2:30 PM

Impact of bempedoic acid on skeletal muscle mitochondrial activity in ApoE-/- mice – A preliminary analysis

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Background and Aims: Lipid-lowering therapy is a cornerstone in preventing coronary disease. Bempedoic acid (BA) can be prescribed when statin-associated muscular side effects are observed. Based on the hypothesis that statins impact skeletal mitochondrial activity, this study aimed to evaluate the effect of BA on this aspect in a murine model of hypercholesterolemia and compare it to the results obtained using atorvastatin.

Methods: *ApoE*$^{-/-}$ mice were fed a high-fat high-cholesterol (HFHC) diet for 12 weeks, either alone (n= 15) or with atorvastatin (40 mg kg^{-1} day; n=13) or BA (30 mg kg^{-1} per day; n=15). The primary outcome was skeletal muscles mitochondrial functionality. Secondary outcomes were locomotion and riding time. Tertiary outcomes included changes in lipids, plaque deposition, energy expenditure and oxygen consumption.
Results: After 12 weeks, body weight, food intake, glycaemic profile, and organ weights were unaffected by BA vs HFHC diet. BA significantly reduced HDLc, plaque formation in thoracic and abdominal aorta and necrotic core of aortic sinus (all $p < 0.05$). Mitochondrial functionality of skeletal muscles (tibialis anterior, extensor digitorum longus, soleus, gastrocnemius, quadriceps, biceps brachii) in mice receiving BA (Mito stress analysis) was not reduced vs HFHC alone, whereas mice receiving atorvastatin showed a significant 22% reduction in basal and maximal mitochondrial respiration. BA did not affect proteins of mitochondrial dynamics and of OXPHOS complexes (WB). No changes were found in locomotion (stride width and length, distance to opposite foot) and riding time in mice with BA or atorvastatin vs HFHC. Metabolic cages revealed a significant 12% increment in pedestrian locomotion in mice given BA vs those on HFHC diet, which was also associated with a significant rise in oxygen consumption rate. A proteomic analysis conducted on hepatic samples revealed that BA determined an increased activation of fatty acid beta oxidation.
Conclusions: BA positive impacts plaque burden while preventing skeletal muscle mitochondrial functionality and locomotion.

SaaG049 / #840
SAAG SESSION: AI AND ADVANCED ANALYTICS IN CARDIOVASCULAR RESEARCH
05-05-2025 1:30 PM - 2:30 PM

Automated quantitative plaque analysis for the assessment of large CCTA registry datasets

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Background and Aims: Large CCTA registries linked with long-term outcomes data can potentially unlock new insights in cardiovascular research. Significant challenges remain to generate reliable quantitative analysis in prohibitively large datasets. This study aimed to develop automated quantitative plaque analysis to measure calcified and non-calcified plaque volumes from CCTA data. Our goal was to achieve a level of agreement similar to human readers supporting deployment at scale.
Methods: CCTAs (n=200) were drawn from one UK site contributing to the Oxford Risk Factors and Non-Invasive Imaging Study (ORFAN) for which expert ground truth (GT) quantitative plaque analysis had previously been completed. A suite of proprietary machine learning (ML) models (Caristo Diagnostics Ltd) were applied to each study CCTA to identify the coronary vessels from which semantic segmentation masks were automatically generated to identify non-calcified and calcified plaque components at the level of individual vessel segments. The automated process was fully unsupervised resulting in plaque volumes aggregated for each subject. Fully automated plaque volumes were compared with ground truth volumes generated by an independent team of expert clinical readers. Consistency of ML and GT plaque volumes was summarised using Pearson's Correlation Coefficient at the patient level.
Results: Correlations between expert readers for calcified and non-calcified plaque volumes have been reported in the range 0.68-0.97 comparing to both level 3 expert readers and automated algorithms. This study demonstrated a PCC of 0.95 (CP) and 0.92 (NCP) in an external validation dataset. Calibration was 1.05 (CP), and 0.75 (NCP), see Figure 1a and 1b. Visual agreement was