and older patients from 1 to 5 points. The data presented in table 1 showed that blood lipids improved in the 2-nd group. The urea level decreased in both groups, while creatinine level did not change.

Table 1. The mean and standard deviation of laboratory analysis before and after fasting (F) in two groups (*p<0.05: **p<0.001).

Group	TC	TC F	HDL	HDL F	TG	TG F	LDL	LDL F	FG	FG F	U	U F
1	4.9±0.9	5.1±0.9*	1.3±0.3	1.4±0.4	1.3±1.0	1.3±0.9	2.9±0.8	3.1±0.9*	4.7±0.5	4.6±0.6	5.9±1.8	3.9±6.2*
2	4.8±1.1	4.4±1.3*	1.5±1.2	1.2±0.3*	1.7±0.7	1.3±0.4*	3.2±1.5	2.5±1.2*	5.4±61	5.4±0.7	7.9±2.3	10.5±12

Conclusions: The effect of one-day intermittent fasting differs in young and middle-aged patients. Middle-age patients tolerate intermittent fasting favorably and have more positive changes in blood lipids.

EP614 / #650, TOPIC: *ASA04 - CLINICAL VASCULAR DISEASE / ASA04-07 NUTRITION, NUTRACEUTICALS*, POSTER VIEWING SESSION.
AN INNOVATIVE BERBERINE FORMULATION IS ABLE TO IMPROVE BBR BIOAVAILABILITY AND THE LIPID AND GLYCEMIC PROFILE IN HFD-FED MICE

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Background and Aims : Berberine (BBR) is a hyperglycemic and hypocholesterolemic natural alkaloid that is scarcely bioavailable. We aimed to test in HFD-fed mice the efficacy of a new BBR formulation (BBR-U).

Methods: In a pilot study, ten 6-weeks old C57BL/6 wt mice on standard diet (SD) were randomized to receive for 3w oral gavage of BBR or BBR-U 50mg/kg/day, as already published for BBR dosage in mice. Thus, further 28 mice were randomized in 4 groups to receive SD or HFD (60% fat) for 16 weeks and oral gavage of vehicle (v), BBR, or BBR-U for the last 8w according to the following scheme: **G1**, SD+v; **G2**, HFD+v; **G3**, HFD+BBR; **G4**, HFD+BBR-U. BBR was provided at 50mg/kg/day, BBR-U dosage was reduced at 6.25mg/kg/day since the higher C_{max} observed in the pilot study.
Results: We observed 8-fold increase in BBR C_{max} upon BBR-U administration. **G4** showed a higher decrease in TC plasma levels *vs* **G3** (111±22mg/dL *vs* 125±23mg/dL), compared to **G2** (130±11mg/dL). TC of **G1** mice was 80±21mg/dL. BBR-U 6.25mg was as effective as BBR 50mg in improving the HFD-induced insulin resistance according to OGTT AUCs (**G4**: 53430±2127; **G3**: 54165±2990; **G2**: 63338±2990; **G1**: 45765±2334 (mg/dL)*120min). HPLC MS/MS analysis on liver, kidney, brain and VAT samples showed a differential BBR and its metabolites tissue distribution.
Conclusions: The new BBR formulation is an innovative and effective tool to improve BBR bioavailability. Further gene and proteomic expression analyses on tissue samples are ongoing.

EP615 / #542, TOPIC: *ASA04 - CLINICAL VASCULAR DISEASE / ASA04-07 NUTRITION, NUTRACEUTICALS*, POSTER VIEWING SESSION.
SCREENING AND VALIDATION STRATEGIES FOR NATURAL EXTRACTS AGAINST CARDIOVASCULAR DISEASES: LINGONBERRY AND BLACKBERRY EXTRACTS BENEFICIALLY ACT ON CHOLESTEROL METABOLISM IN-VITRO AND IN-VIVO

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Background and Aims : Decreasing circulating LDL-cholesterol levels leads to decreased risk for cardiovascular diseases. Natural compounds are capable of lowering LDL-cholesterol even on top of lifestyle modification or medication.

Methods: To identify novel plant-derived compounds to lower plasma LDL-cholesterol levels, we performed a high-content screen based on the transcriptional activation of the promoter of the LDL receptor (LDLR). Identified hits were thoroughly validated in human hepatic cell lines in terms of increasing LDLR mRNA and protein levels, lowering cellular cholesterol levels and increasing cellular LDL uptake. Furthermore, selected extracts were applied to mice. In addition, we present an independent screening approach to identify natural extracts that increase cholesterol efflux from macrophages.
Results: By means of screening and incremental validation *in-vitro*, aqueous extracts prepared from leaves of lingonberries (*Vaccinium vitis-idea*) as well as blackberries (*Rubus fructicosius)* were found to have effects comparable to lovastatin, a prototypic cholesterol-lowering drug. When applied *in-vivo* in mice, both extracts induced subtle increases in hepatic LDLR expression. Additionally, a significant increase in HDL-cholesterol was observed. Moreover, we present screening results including preliminary validation for natural extracts, that increase cholesterol efflux from macrophages with the aim to identify novel natural inhibitors of foam cell formation.
Conclusions: Taken together, aqueous extracts from lingonberry or blackberry leaves were identified and characterized as strong candidates to provide cardiovascular protection.

EP616 / #1303, TOPIC: *ASA04 - CLINICAL VASCULAR DISEASE / ASA04-07 NUTRITION, NUTRACEUTICALS*, POSTER VIEWING SESSION.
DOES LOW GLYCEMIC INDEX DIET SUPERIOR THAN ROUTINE DIET TO CONTROL BLOOD INFLAMMATION STATE AND LIPID PARAMETERS IN PATIENTS WITH CORONARY ARTERY DISEASE?

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Background and Aims : Objectives of the study to demonstrate superiority of the low glycemic index diet in patients with CAD in terms of blood inflammation state and lipid parameters.

Methods: One hundred and sixty patients aged 38-76 years established with CAD entered as 12 week dietary intervention either with low glycemic index (n=80) or routine diet (n=80) together with standard therapy from 2016 to 2019 (male=48%; 58.2±12.0 years). Laboratory (including hs-CRP, pro-inflammatory interleukins, IL-1β, IL-6, TNF-α, lipid parameters TC, TG, LDL-Cholesterol, HDL-Cholesterol) and instrumental data were obtained at baseline and in 12 weeks of the intervention.
Results: There were no statistically differences in biochemical data between two groups at their baseline characteristics. Low glycemic index diet positively influenced on hs-CRP (from 252.4±40.6 mg/dL to 161.9±28.5 mg/dL vs. from 237.8±35.6 mg/dL to 202.4±23.8 mg/dL; P<0.05), HbA1c (from 6.95±1.95 % to 4.78±1.18 % vs. 6.80±1.65 % to 6.25±1.45%; P<0.05), TG (from 5.2±2.2 to 3.1±1.8 vs. from 5.8±2.8 to 4.9±2.0, P<0.05), TNF-α (from 1.48±0.91 to 0.88±0.19 vs. from 1.55±1.35 to 1.12±0.35, P<0.05), IL-6 (from 8.2 pg/mL to 4.9 pg/mL vs. from 8.2 pg/mL to 4.9 pg/mL, P<0.005) than routine diet. Although reduction in IL-1β were observed in both groups (from 32.5±17.2 pg/ml to 28.9±16.8 pg/ml, P>0.05; vs. 33.6±21.6 pg/ml to 29.8±20.4, P>0.05;), however there were no statistically significant from baseline and between groups (P>0.05).
Conclusions: Low glycemic index diet demonstrated superiority to routine diet to improve inflammatory state and lipid parameters in patients with CAD.