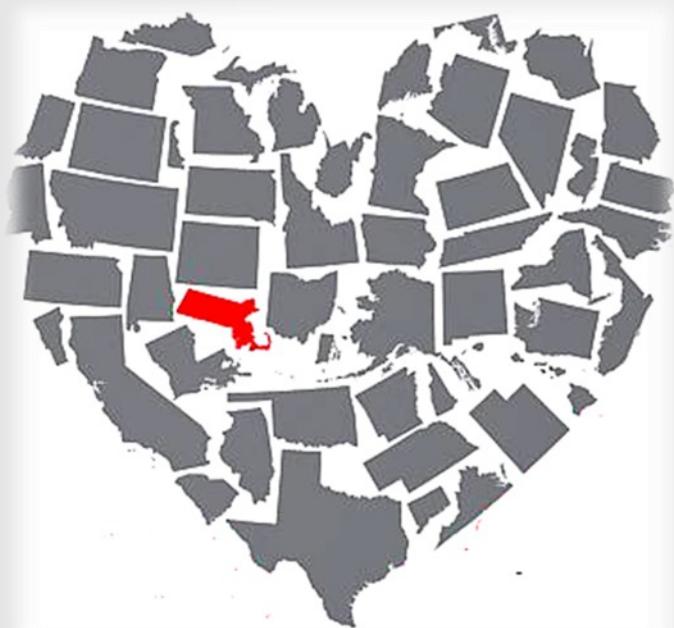




Issue 12, November'18

A State of the EART

A monthly cardiology news



STATE OF THE HEART



Dear Reader,

We are grateful to present you the 12th issue of "**The State of the Heart**", which explores the clinical evidence supporting the new understandings and happenings in the field of cardiology.

In India, the epidemiological transition from predominantly infectious disease conditions to non-communicable diseases has occurred over a rather succinct period of time. Despite wide heterogeneity in the prevalence of cardiovascular risk factors across different regions, CVD has emerged as the leading cause of death in all parts of India, including poorer states and rural areas. In this research driven time, management of these disorders is also constantly evolving towards the betterment whether it's pharmacological or non-pharmacological.

Being a healthcare custodian of the society, clinicians are constantly thriving to be abreast with the novel understandings of disease and its management. In this context, this is our initiative to provide you a compiled and to the point information.

Present booklet comprises of recent and latest deeds in the field of cardiovascular diseases like dyslipidemia, coronary artery disease, heart failure and its management. We hope that it will facilitate increased cooperation and innovation, and enthuse commitment to prevent these life-threatening and disabling disorders and providing the best possible care for people who suffer from these conditions.

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1. INCREASING FRUIT CONSUMPTION IS ASSOCIATED WITH A LOWER RISK FOR HYPERTRIGLYCERIDEMIA

Increasing Fruit Consumption Is Associated With a Lower Risk For Hypertriglyceridemia



Clin Nutrition ESPEN 2018;27:53-58



This meta-analysis included observational and interventional studies (1950-2017) reported fruit intake in association with triglycerides were included.

Results

A linear dose response association was observed between increases in fruit intake and ORs for hypertriglyceridemia; the OR (95% CI) for an incrementally increased intake of fruit by 1 serving/day was 0.91 (0.84-0.98).

Conclusion

Increasing fruit consumption is associated with a lower risk for hypertriglyceridemia.

Background & Aims: High intake of fruit and vegetables is recommended for cardiovascular health. However, there have been persistent beliefs that fruits having high concentrations of fructose elevate the level of triglycerides (TG) in blood unlike vegetables. This meta-analysis aims to clarify the relationship between fruit intake and TG or hypertriglyceridemia.

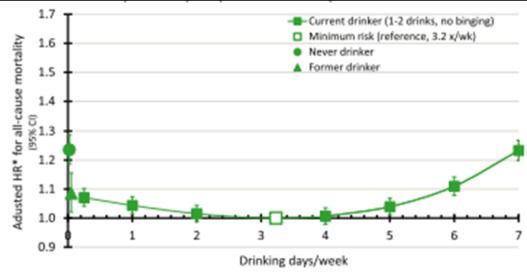
Methods: Electronic literature searches were conducted for observational studies that investigated the relationship between fruit intake and hypertriglyceridemia or intervention studies that investigated the effect of increasing fruit intake on TG. Each effect size was pooled with an inverse-variance method.

Results: Five cross-sectional studies and only 2 intervention studies were eligible. The pooled odds ratio (OR) (95% confidence interval (CI)) of the 5 cross-sectional studies for the highest vs. the lowest fruit intake category was 0.79 (0.72- 0.87). In these studies, the pooled OR for the highest vs. the lowest vegetable intake category was not significant (OR = 0.92; 95% CI, (0.82 -1.03)). A linear dose response association was observed between increases in fruit intake and ORs for hypertriglyceridemia; the OR (95% CI) for an incrementally increased intake of fruit by 1 serving/day was 0.91 (0.84 - 0.98).

"THIS META-ANALYSIS SUGGESTS THAT HIGH INTAKE OF FRUIT IS INVERSELY ASSOCIATED WITH HYPERTRIGLYCERIDEMIA. INCREASING FRUIT CONSUMPTION IS GOOD FOR LIPID HEALTH"

2. EVEN LIGHT DRINKING HEIGHTENS DEATH RISK

Even Light Drinking Heightens Death Risk



Alcohol Clin Exp Re, 2018; pp 1–10
DOI: 10.1111/acer.13886



People who had one or two drinks four or more times weekly had a **20 percent higher risk of premature death**, compared with those who drank less often. This increased death risk remains consistent across all age groups.

Background: There is evidence that low-level alcohol use, drinking 1 to 2 drinks on occasion, is protective for cardiovascular disease, but increases the risk of cancer. Synthesizing the overall impact of low-level alcohol use on health is therefore complex. The objective of this study was to examine the association between frequency of low-level drinking and mortality.

Methods: Two data sets with self-reported alcohol use and mortality follow-up were analyzed: 340,668 individuals from the National Health Interview Survey (NHIS) and 93,653 individuals from the Veterans Health Administration (VA) outpatient medical records. Survival analyses were conducted to evaluate the association between low-level drinking frequency and mortality.

Results: The minimum risk drinking frequency among those who drink 1 to 2 drinks per occasion was found to be 3.2 times weekly in the NHIS data, based on a continuous measure of drinking frequency, and 2 to 3 times weekly in the VA data. Relative to these individuals with minimum risk, individuals who drink 7 times weekly had an adjusted hazard ratio (HR) of all-cause mortality of 1.23 ($p < 0.0001$) in the NHIS data, and individuals who drink 4 to 7 times weekly in the VA data also had an adjusted HR of 1.23 ($p = 0.01$). Secondary analyses in the NHIS data showed that the minimum risk was drinking 4 times weekly for cardiovascular mortality, and drinking monthly or less for cancer mortality. The associations were consistent in stratified analyses of men, women, and never smokers.

“ Daily drinking, even at low levels, is detrimental to one’s health.”

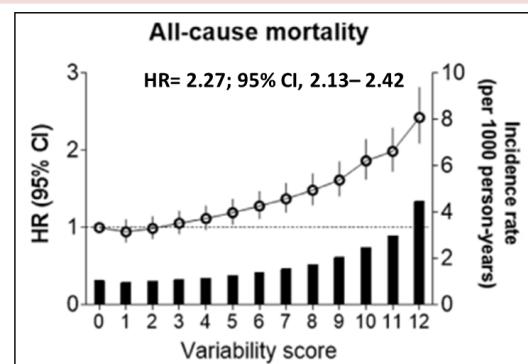
3. VARIABILITY IN METABOLIC PARAMETERS CAN PREDICT MORTALITY AND CARDIOVASCULAR OUTCOMES

Variability in Metabolic Parameters Can Predict Mortality and Cardiovascular Outcomes

High variability of fasting blood glucose and total cholesterol levels, systolic blood pressure, and body mass index was an independent predictor of mortality and cardiovascular events.



Circulation. 2018;138:00–00. DOI: 10.1161/CIRCULATIONAHA.118.034978



Treatment strategies to reduce fluctuations in metabolic parameters should be another goal to prevent adverse health outcomes.

OBJECTIVE: To evaluate whether variability in metabolic parameters such as fasting blood glucose and cholesterol concentrations, blood pressure, and body weight has additive effects on the risk of mortality and cardiovascular outcomes in the general population.

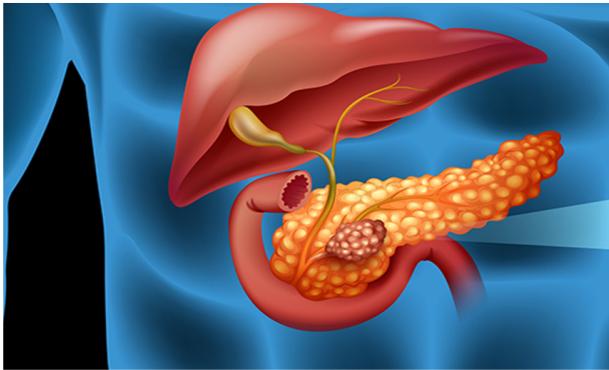
METHODS: Data from the Korean National Health Insurance System. 67,48,773 people who were free of diabetes mellitus, hypertension, and dyslipidemia and who underwent ≥3 health examinations from 2005 to 2012 were followed to the end of 2015. Variability in fasting blood glucose and total cholesterol concentrations, systolic blood pressure, and body mass index was measured using the coefficient of variation, SD, variability independent of the mean, and average real variability. High variability was defined as the highest quartile of variability. Participants were classified numerically according to the number of high-variability parameters (eg, a score of 4 indicated high variability in all 4 metabolic parameters).

RESULTS: There were 54 785 deaths (0.8%), 22 498 cases of stroke (0.3%), and 21 452 myocardial infarctions (0.3%) during a median follow-up of 5.5 years. High variability in each metabolic parameter was associated with a higher risk for all-cause mortality, myocardial infarction, and stroke. In the multivariable adjusted model comparing a score of 0 versus 4, the hazard ratios (95% CIs) were 2.27 (2.13–2.42) for all-cause mortality, 1.43 (1.25–1.64) for myocardial infarction, and 1.41 (1.25–1.60) for stroke.

“HIGH VARIABILITY OF FASTING BLOOD GLUCOSE AND TOTAL CHOLESTEROL LEVELS, SYSTOLIC BLOOD PRESSURE, AND BODY MASS INDEX WAS AN INDEPENDENT PREDICTOR OF MORTALITY AND CARDIOVASCULAR EVENTS.”

4. STATIN USE IS ASSOCIATED TO A REDUCED RISK OF PANCREATIC CANCER: A META-ANALYSIS

Statin Use Is Associated To A Reduced Risk Of Pancreatic Cancer: A Meta-analysis



Dig Liver Dis. 2018 Sep 20. doi: 10.1016/j.dld.2018.09.007

Conclusion

Statin use is associated with an overall pancreatic **cancer risk reduction of 30%**.

Methods

27 studies for a total population of **11,975 Pancreatic Cancer/3,433,175 Controls** contributed to the analysis.

Results

A reduced pancreatic cancer risk among statin users (OR 0.70; 95% CI 0.60–0.82; $p < 0.0001$), compared to non-users



BACKGROUND:

Previous studies investigating the association between statin use and pancreatic cancer (PDAC) risk for a possible chemopreventive effect gathered heterogeneous results.

AIM:

To conduct a systematic review and meta-analysis to clarify this association.

METHODS:

Comprehensive literature search of articles published up to February 2018, including case-control (CC), cohort studies (C), randomized controlled trials (RCTs) assessing association between statin use and PDAC risk. Studies had to report odds ratio (OR)/relative risk (RR), estimates with 95% confidence interval (CI), or provide data for their calculation. Pooled ORs with 95% CIs were calculated using random effects model, publication bias through Begg and Mazumdar test and heterogeneity by I^2 value.

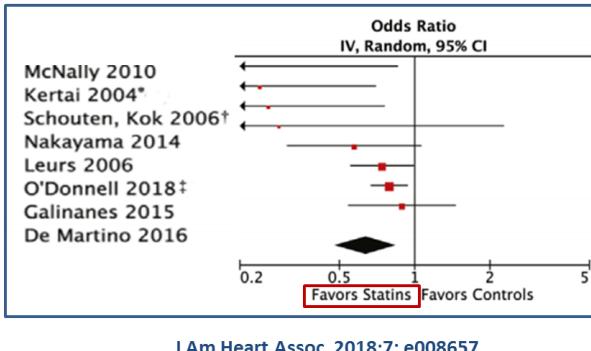
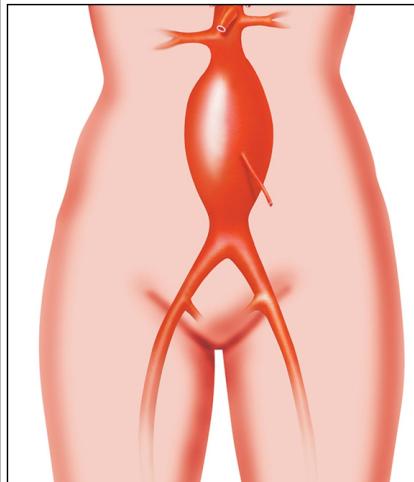
RESULTS:

27 studies (13 CC, 9C, 5 RCTs) for a total population of 11,975 PDAC/3,433,175 controls contributed to the analysis. The overall pooled result demonstrated a reduced PDAC risk among statin users (OR 0.70; 95% CI 0.60–0.82; $p < 0.0001$), compared to non-users. Sensitivity analyses suggested the risk reduction to be more important in CC studies, studies conducted in Asia and Europe, in males and atorvastatin users.

“STATIN USE IS ASSOCIATED WITH AN OVERALL PDAC RISK REDUCTION OF 30%. FURTHER STUDIES ARE NEEDED TO CLARIFY THE ASSOCIATION.”

5. STATINS REDUCE ABDOMINAL AORTIC ANEURYSM GROWTH, RUPTURE, AND PERIOPERATIVE MORTALITY: A SYSTEMATIC REVIEW AND META-ANALYSIS

Statins Reduce Abdominal Aortic Aneurysm Growth, Rupture, and Perioperative Mortality: A Systematic Review and Meta-Analysis



Results

Statin therapy is associated with reductions in abdominal aortic aneurysm growth, rupture rate, and perioperative mortality.

Conclusion

Healthcare providers managing **patients with abdominal aortic aneurysms** should **consider starting statins in all such patients** even in the absence of other cardiovascular indications for statin therapy.

Background: There are no recognized pharmacological treatments for abdominal aortic aneurysms (AAA), although statins are suggested to be beneficial. Investigators sought to summarize the literature regarding the effects of statins on human AAA growth, rupture, and 30-day mortality.

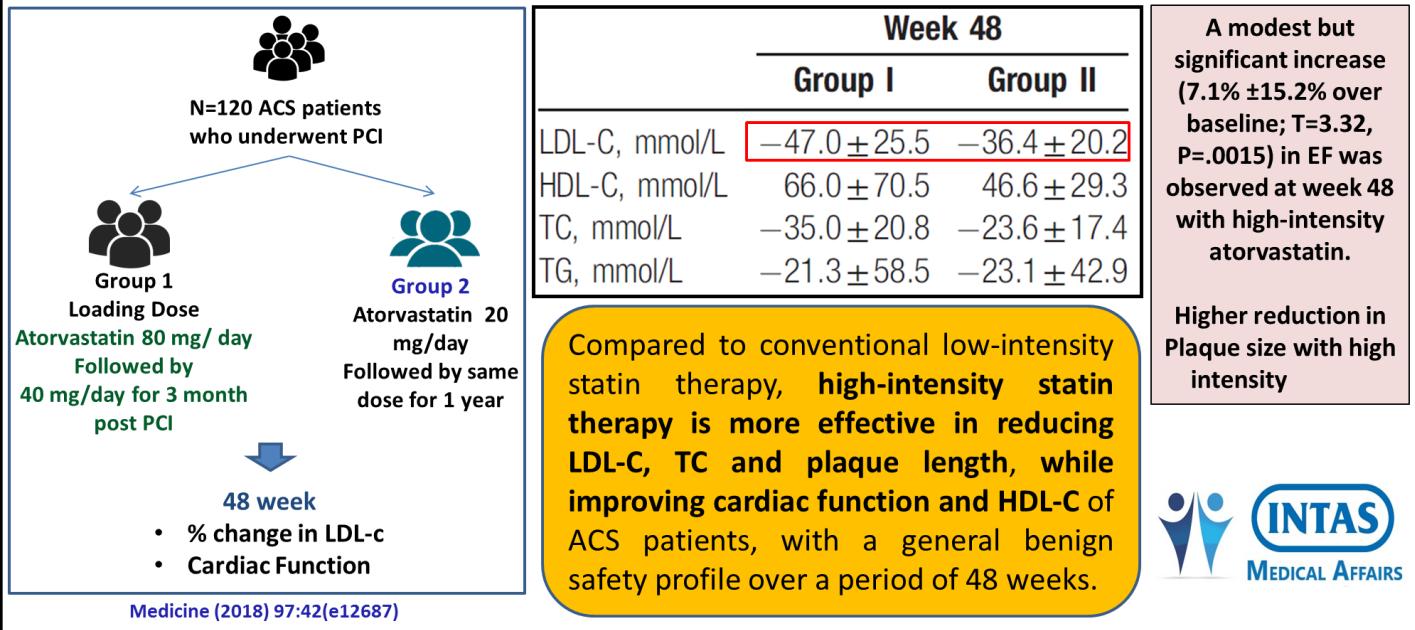
Methods: Conducted a systematic review and meta-analysis of randomized and observational studies using the Cochrane CENTRAL database, MEDLINE, and EMBASE up to June 15, 2018. Review, abstraction, and quality assessment were conducted by 2 independent reviewers, and a third author resolved discrepancies. Pooled mean differences and odds ratios with 95% confidence intervals were calculated using random effects models. Heterogeneity was quantified using the I^2 statistic, and publication bias was assessed using funnel plots.

Results: Search yielded 911 articles. One case-control and 21 cohort studies involving 80 428 patients were included. The risk of bias was low to moderate. Statin use was associated with a mean AAA growth rate reduction of 0.82 mm/y (95% confidence interval 0.33, 1.32, $P=0.001$, $I^2 =86\%$). Statins were also associated with a lower rupture risk (odds ratio 0.63, 95% confidence interval 0.51, 0.78, $P< 0.001$, $I^2=27\%$), and preoperative statin use was associated with a lower 30-day mortality following elective AAA repair (odds ratio 0.55, 95% confidence interval 0.36, 0.83, $P=0.005$, $I^2=57\%$).

"STATIN THERAPY MAY BE ASSOCIATED WITH REDUCTION IN AAA PROGRESSION, RUPTURE, AND LOWER RATES OF PERIOPERATIVE MORTALITY FOLLOWING ELECTIVE AAA REPAIR. THESE DATA ARGUE FOR WIDESPREAD STATIN USE IN AAA PATIENTS."

6. HIGH-INTENSITY STATIN THERAPY IS MORE EFFECTIVE IN REDUCING LDL-C AND IMPROVING CARDIAC FUNCTION OF ACS PATIENTS

High-intensity Statin Therapy Is More Effective In Reducing LDL-C And Improving Cardiac Function Of ACS Patients



Objective: To compare the long-term efficacy and safety of high-intensity and conventional atorvastatin therapy in reducing low-density lipoprotein cholesterol (LDL-C) and plaque size, and improving cardiac function of ACS patients who underwent PCI.

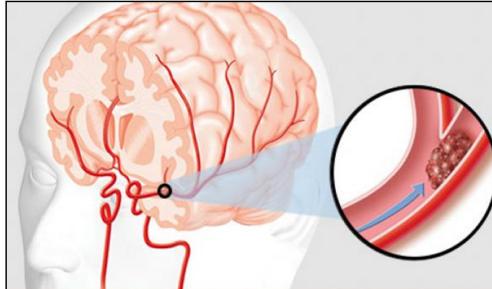
Methods: Investigators retrospectively analyzed the clinical records of 120 consecutive ACS patients who underwent PCI. **Group I** received a loading dose of atorvastatin (80 mg/day) prior to PCI, followed by a maintenance dose of 40mg/day for 3 months post- PCI. **Group II** received a regular dose of atorvastatin (20mg/day) from the date of admission until 1 year post-PCI. The composite primary efficacy end point was the mean percent change in calculated LDL-C from baseline to week 48 in both groups and percentage of patients achieving the LDL-C target of 1.81 mmol/L.

Results: Group I had significantly higher mean baseline LDL-C than group II. Moreover, 8.3% of group I patients had an LDL-C ≤ 1.81 mmol/ L versus 43.3% for group II. At week 48, 85.0% and 96.7% of group I and II patients, respectively, achieved the LDL-C target. Additionally, the mean percent changes at week 48 from baseline in LDL-C were $47.0\% \pm 25.5\%$ for group I versus $36.4\% \pm 20.2\%$ for group II. Meanwhile, significant reduction in plaque size and marked improvement in cardiac function were seen in patients receiving high-intensity atorvastatin therapy.

"COMPARED TO CONVENTIONAL THERAPY, HIGH-INTENSITY STATIN THERAPY IS MORE EFFECTIVE IN REDUCING LDL-C AND IMPROVING CARDIAC FUNCTION OF ACS PATIENTS, WITH A GENERAL BENIGN SAFETY PROFILE OVER A PERIOD OF 48 WEEKS."

7. STATIN THERAPY DECREASES THE RISK OF RECURRENT HOSPITALIZATION AFTER INCIDENT TRANSIENT ISCHEMIC ATTACKS

Statin Therapy Decreases The Risk Of Recurrent Hospitalization After Incident Transient Ischemic Attacks (TIA)

Methods	Results	
Adults hospitalized for TIA from 2000 through 2017 were examined for recurrent hospitalizations and long-term mortality.	No prescription of statin was significantly associated with increase incidence of rehospitalization (IRR 1.45, 95% CI 1.04-2.03, P = .0289).	
Conclusion		
Statin therapy initiated after incident TIA or stroke resulted in better clinical outcome with lower risk of recurrent hospitalization.		Journal of Stroke and Cerebrovascular Diseases. 2018 Oct 17. DOI:10.1016/j.jstrokecerebrovasdis.2018.09.028



Objective: To examine predictors of recurrent hospitalizations and the importance of these hospitalizations for subsequent mortality after incident transient ischemic attacks (TIA).

Methods: Adults hospitalized for TIA from 2000 through 2017 were examined for recurrent hospitalizations, days, and percentage of time spent hospitalized and long-term mortality.

Results: Of 266 patients hospitalized for TIA, 122 died, 212 had 826 any condition hospitalization (59 from TIA-related conditions) corresponding to 3384 inpatient days during 1693 person-years of follow-up. Of 42 patient-level characteristics, age greater than or equal to 65 years (Incidence rate ratio [IRR] 1.75, 95% confidence interval [CI] 1.19-2.55), current smoking (IRR 2.15, 95% CI 1.39-3.33), concurrent heart failure (IRR 1.81, 95% CI 1.17-2.80) or anemia (IRR 1.90, 95% CI 1.40-2.48), and no prescription statin (IRR 1.45, 95% CI 1.04-2.03, P = .0289) emerged as significant predictors of any condition rehospitalization. All these variables except heart failure remained significant predictors of TIA-related rehospitalizations. All-cause mortality was significantly increased after each hospitalization from any condition (hazard ratio [HR] 1.32, 95% CI 1.26-1.39), TIA-related condition (HR 1.72; 95% CI 1.28-2.30), and per each day (HR 1.05, 95% CI 1.04-1.05) and per 1% of follow-up time spent hospitalized from any condition (HR 1.45, 95% CI 1.34-1.58).

“OLDER AGE, CURRENT TOBACCO SMOKING, CONCURRENT HEART FAILURE OR ANEMIA, AND NO PRESCRIPTION STATIN, EASILY MEASURED PATIENT-LEVEL CHARACTERISTICS, IDENTIFIES PATIENTS WITH TIA AT HIGH RISK FOR RECURRENT HOSPITALIZATIONS AND THE BURDEN OF THESE HOSPITALIZATIONS PREDICTS SUBSEQUENT MORTALITY.”

8. ADDITION OF EZETIMIBE TO STATIN MONOTHERAPY OFFERS GREATER REDUCTION IN LDL-C AMONG HIGH RISK PATIENTS OF CVD: A META-ANALYSIS

Addition Of Ezetimibe To Statin Monotherapy Offers Greater Reduction In LDL-C Among High Risk Patients Of CVD: A Meta-analysis

Aim	Methods	Results
To evaluate the efficacy of addition ezetimibe to statin monotherapy versus doubling the dosage or switching to a higher-potency statin in a population of patients with high risk of CVD.	Literature search, Systemic Reviews and Bayesian network meta-analysis (NMA) within each statin population. Primary outcome Secondary outcome Percent change from baseline in LDL-C. Changes in total cholesterol.	35 RCTs Mean difference in LDLc after addition of ezetimibe compared to doubling the dose of statin monotherapy: <ul style="list-style-type: none"> – 13.62% (95% CrI – 19.99, – 6.91) in patients on simvastatin. – 14.71% (95% CrI – 16.46, – 12.95) in patients on atorvastatin. • Similar trends were observed for changes in total cholesterol.
Conclusion		
Addition of ezetimibe to ongoing statin monotherapy offers greater reduction in LDL-C among patients at high risk of CVD compared to doubling the initial statin dose		



Aim: To evaluate the efficacy of adding ezetimibe to simvastatin, atorvastatin, or rosuvastatin monotherapy versus doubling the dosage or switching to a higher-potency statin in a population of patients with hypcholesterolemia at high risk of cardiovascular disease (CVD) and who had been previously treated with a statin.

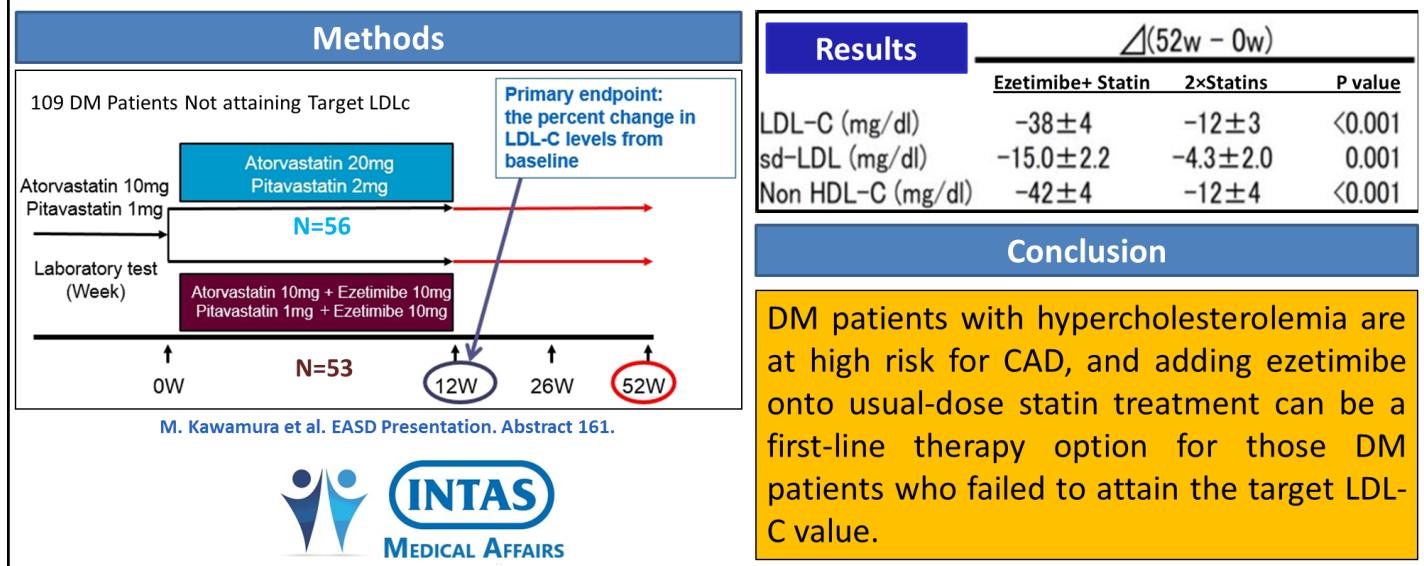
Methods: A systematic literature search was performed and evidence bases were established for populations of atorvastatin, simvastatin, and rosuvastatin experienced patients using eligible randomized controlled trials (RCTs). Based on the available data, Investigators constructed networks of evidence and conducted a Bayesian network meta-analysis (NMA) within each statin population. The primary outcome of interest was percent change from baseline in LDL-C. Changes in total cholesterol were explored as a secondary outcome.

Results: Across all patient populations, 35 RCTs were identified. Among patients on simvastatin therapy, the addition of ezetimibe resulted in a mean difference (MD) in LDL-C of – 13.62% (95% CrI – 19.99, – 6.91) compared to doubling the starting dose of simvastatin. In the population of patients on atorvastatin therapy, the addition of ezetimibe resulted in an MD in LDL-C of – 14.71% (95% CrI – 16.46, – 12.95) compared to doubling the starting dose of atorvastatin. The addition of ezetimibe to rosuvastatin resulted in an MD in LDL-C of – 14.96% (95% CrI – 17.79, – 12.11), compared to doubling the starting rosuvastatin dose. Similar trends were observed for changes in total cholesterol.

"THE ADDITION OF EZETIMIBE TO ONGOING STATIN MONOTHERAPY OFFERS GREATER REDUCTION IN LDL-C AMONG PATIENTS AT HIGH RISK OF CVD COMPARED TO DOUBLING THE INITIAL STATIN DOSE."

9. SUPERIOR EFFECT OF EZETIMIBE ADD-ON THERAPY WAS SUSTAINED AT 52-WEEK

Superior Effect of Ezetimibe Add-on Therapy Was Sustained at 52-Week



Aim: To evaluate long term ezetimibe add-on therapy in type 2 diabetic (DM) patients with hypercholesterolemia not achieving LDL-C target value.

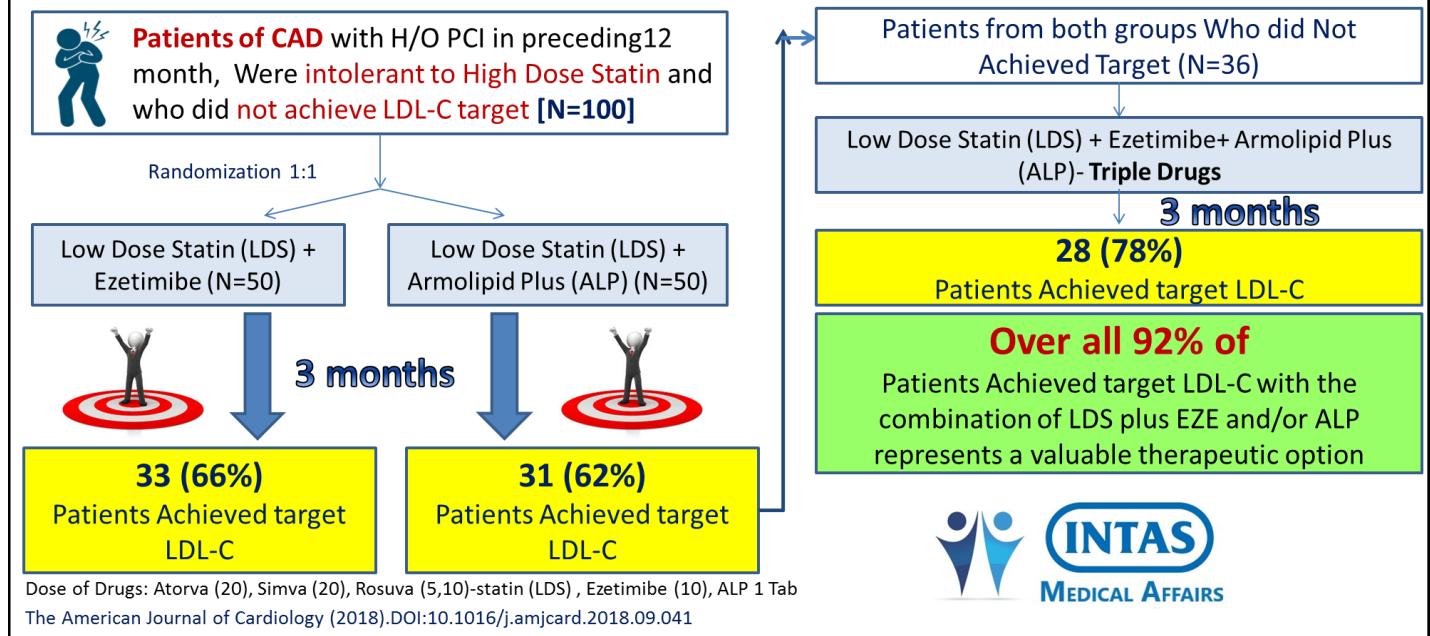
Methods: A total of 109 DM patients not attaining LDL-C target value despite usual-dose statin therapy in Japan were recruited. Difference in cholesterol lowering effect between ezetimibe add-on statin (E) group and double-dose statin (S) group were analyzed. Changes of lipid parameters were assessed in a randomized, multicenter, 52 weeks and open label study. We determined sd-LDL levels by the precipitation method. The participants were randomly assigned to 2 groups, E group ($n = 31$) with ezetimibe 10mg + atorvastatin 10mg or pitavastatin 1mg combination and S group ($n = 38$) with atorvastatin 20mg or pitavastatin 2mg.

Results: At the baseline (0 week), there was no difference between the groups in age, body mass index (BMI), sex ratio, HDL-C, triglyceride (TG), hemoglobin A1c (A1c) and high-sensitivity C-reactive protein (hs-CRP) . However, sd-LDL and nonHDL-C were significantly higher in D group than in E group. Then, both of the groups showed significant decrease in LDL-C, sd-LDL and non HDL-C during the study. LDL-C, sd-LDL and non HDL-C were significantly lower in the E group than in the S group at the end of the study.

"IN THE PRESENT 52-WEEK LONG-TERM PERIOD, EZETIMIBE ADD-ON THERAPY SHOWED A ROBUST ADVANTAGE IN LOWERING LDL-C AND IN ATTAINING TARGET LDL-C VALUES COMPARED WITH THE DOUBLING OF STATIN DOSE. MOREOVER, IT'S MEANINGFUL THAT SD-LDL, POWERFULLY ATHEROGENIC LIPOPROTEIN, WAS DECREASED PROMINENTLY BY EZETIMIBE ADD-ON THERAPY."

10. COMBINATION OF LOW DOSE STATIN PLUS EZETIMIBE AND /OR ARMOLIPID PLUS: A VALUABLE THERAPEUTIC OPTION TO REACH TARGET LDL-C

Combination Of Low Dose Statin Plus Ezetimibe And /Or Armolipid Plus: A Valuable Therapeutic Option To Reach Target LDL-C



Aim: To evaluate whether the combination of low-dose statin (LDS) plus ezetimibe (EZE) or LDS plus nutraceutical (Amlodipide Plus [ALP] containing red yeast rice, policosanol, and berberine) can lead to a higher proportion of high-risk patients achieving target LDL-C. A secondary objective was to assess the efficacy of triple combination LDS+EZE+ALP in resistant patients ($LDL-C > 70 \text{ mg/dl}$).

Methods: A randomized, prospective, parallel-group, single-blind study was conducted in patients with coronary artery disease (CAD) ($N=100$) who had undergone percutaneous coronary intervention in the preceding 12 months, were HDS-intolerant, and were not at LDL-C target ($<70 \text{ mg/dl}$) with LDS alone. Patients received either LDS+EZE or LDS+ALP. Patients who did not achieve the therapeutic goal received a triple combination of LDS+EZE+ALP for a further 3 months.

Results: Of the 100 patients, 33 patients (66%) treated with LDS+EZE and 31 patients (62%) treated with LDS+ALP achieved target LDL-C after 3 months, which was maintained at 6 months. Patients who did not achieve the therapeutic goal received a triple combination of LDS+EZE+ALP for a further 3 months and At 6 months, 28/36 patients (78%) achieved LDL-C target. Overall, 92% of patients enrolled in this study were at target LDL-C at 6 months. No patients in any group experienced major side effects.

"HDS-intolerant CAD patients, the combination of LDS plus EZE and/or ALP represents a valuable therapeutic option allowing most patients to reach target LDL-C within 3 to 6 months."

11. SHOULD TORSAMIDE BE THE LOOP DIURETIC OF CHOICE IN HEART

Should Torsamide be the Loop Diuretic of Choice in Heart Failure?

Aim	Results	Conclusion
To analyze efficacy and safety of Furosemide vs Torsemide in HF patients.	<ul style="list-style-type: none"> The standard Mean difference in the blood pressure after treatment in Furosemide group was 1.25 (CI 0.41-2.09) as compared with Torsemide group 1.95 (CI 0.83-3.07) No significant difference in the weight More patients with improvement of NYHA functional class in the Torsemide group (Risk ratio 0.84 [0.73-0.95], P value 0.02) 	Torsemide is associated with numerically more drop in the blood pressure and more efficacious in improving NYHA functional class.
Methods  Meta-analysis 10 studies Primary outcome Difference in systolic blood pressure, weight and New York Heart Association (NYHA) functional class before and after treatment.		

Abstract no.-067. Journal of Cardiac Failure. 24 (8)Supplement. August 2018

Introduction: Congestive heart failure (HF) is a leading cause of inpatient admissions and readmissions in the United States. Diuretics are the primary treatment for the management of HF symptoms and for the improvement of acute HF symptoms. Furosemide has historically been the primary loop diuretic in HF patients despite data suggesting potential advantages with Torsemide. Aim of the study is to analyze efficacy and safety of Furosemide vs Torsemide in those patients.

Methods: PubMed, EMBASE and Cochrane database were searched for publications comparing the effect of Furosemide to Torsemide in patients with HF. Primary outcome assessed was difference in systolic blood pressure, weight and New York Heart Association (NYHA) functional class before and after treatment

Results: A total of 10 randomized controlled trial were included in this study. Baseline blood pressure is similar in both groups. The standard mean difference in the blood pressure after treatment in Furosemide group was 1.25 (CI 0.41-2.09) as compared with Torsemide group 1.95 (CI 0.83-3.07). There was no significant difference in the weight before and after treatment in furosemide group (0.27 [-0.07 to 0.61]) and as well as in torsemide group (0.13 [-0.04- 0.31]). There were more patients with improvement of NYHA functional class in the Torsemide group (Risk ratio 0.84 [0.73-0.95], P value 0.02).

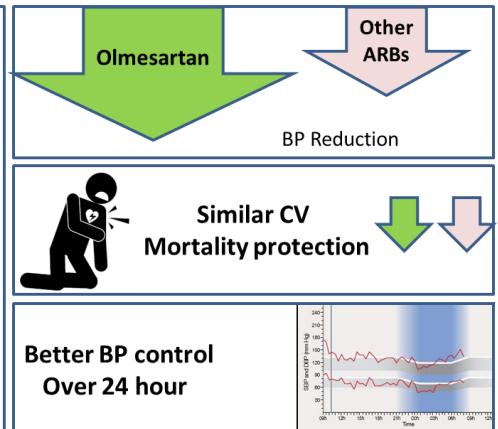
“TORSEMIDE IS ASSOCIATED WITH NUMERICALLY MORE DROP IN THE BLOOD PRESSURE AND MORE EFFICACIOUS IN IMPROVING NYHA FUNCTIONAL CLASS.”

12. WHAT MAKES OLMESARTAN A SUPERIOR CHOICE?

What Makes Olmesartan A Superior Choice?

- Meta -analysis on 22 studies by Wang et al. and on 25 studies by Redon et al. indicated that olmesartan provided **greater reduction in both DBP and SBP than other ARBs**.
- Olmesartan showed **similar odd ratio for all -cause mortality as other ARBs**, and it did not show any difference in terms of **CV mortality**.
- Olmesartan seems to **possess some antiatherogenic and vasoprotective effects** which add to its hypotensive activity.
- Provides **larger BP reduction over the 24 hours**.
- Olmesartan **significantly reduces mean 24 hour BP and night time BP**, compared to losartan and after 8 weeks, 20.6% of patients treated with olmesartan achieve the goal of 24 hour ambulatory BP <130/80 mmHg, compared to 9.0, 9.2 and 14.2% with losartan, valsartan, and irbesartan.

Ref: Cardiovasc Ther. 2018 Oct 25:e12471



Elevated blood pressure (BP) is a major determinant of morbidity and mortality burden related to cardio - metabolic risk. Current guidelines indicate that controlling and lowering BP promotes cardiovascular (CV) risk reduction.

Among antihypertensive agents, angiotensin receptor blockers (ARBs) are characterized by an efficacy profile equivalent to other antihypertensive agents, and are provided with excellent tolerability profile and low discontinuation rates during chronic treatments. Moreover, CV outcomes are reduced by ARBs.

Olmesartan is a long -lasting ARB which proved to achieve a comparable or more effective action in lowering BP when compared with other ARBs. Olmesartan, in fact, displayed a larger and more sustained antihypertensive effect over the 24 -hours, with a buffering effect on short -term BP variability. These are important features which differentiate olmesartan from the other principles of the same class and that may help to control the increased CV risk in presence of high BP variability. Olmesartan shows similar benefits as other ARBs in terms of all-cause and CV mortality, and a favourable tolerability profile. Thus, ARBs, including olmesartan, represent one of the most effective and safe treatment for patients with arterial hypertension.

“COMBINATION OF OLMESARTAN WITH LONG-LASTING CALCIUM CHANNEL BLOCKERS AND THIAZIDE DIURETICS REPRESENTS A RATIONAL AND EFFECTIVE THERAPY.”

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