



Issue 11, October'18

A state of the HEART Update

A monthly cardiology news





STATE OF THE HEART

Dear Reader,

We are grateful to present you the 11th 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.

Editor in chief

Dr. Dixit Patel (MBBS, MD)

Dr. Mithilesh Nayak (MBBS, MD)

Editorial Board

Dr. Alok Chaturvedi
Dr. Nilanj Dave
Dr. Hiren Prajapati
Dr. Dhiren Pranami
Dr. Nishant Dalal



Table of Content

1. RFM Better Than BMI For Measuring Body Fat	4
2. High TG/HDL-C Ratio Associated with Increase Incidence of Micro- and Macro-	5
3. Serum Sodium: What Level is Optimal for Better CV Health?	6
4. APPLE WATCH 4 ADDS ECG AND MORE HEART-MONITORING CAPABILITIES	7
5. Statin Combination Therapy is Better: Another Evidence from Meta-analysis	8
6. Pre-Procedural Statin Use Is Beneficial In Patients Undergoing Carotid Artery Stenting (CAS)	9
7. ACS Patients Undergoing PCI: Loading Doses of Atorvastatin Reduces the Rate of	10
8. Atorvastatin can Improve LV Remodeling and Improve Cardiac Diastolic Function	11
9. Statins, Fibrates Lower Diabetic Retinopathy Risks in Diabetes	12
10. Torsemide is Superior to Furosemide in Heart Failure: Metaanalysis	13
11. PCI Was Not Associated With a Reduced CV Outcomes or Survival Benefit Compared with Medical Therapy in Stable CAD	14

1. RFM BETTER THAN BMI FOR MEASURING BODY FAT

RFM Better Than BMI For Measuring Body Fat

Relative Fat Mass (RFM):

Male: 64- (20× height/waist circumference)

Female: 64- (20× height/waist circumference)+ 12

RFM was significantly more accurate than BMI at **estimating body fat mass in women** at 91.5% vs 21.6% for BMI ($P < .001$) and **percentage of whole-body fat**, at 88.9% vs 81.9% ($P < .001$).



Scientific reports (2018) 8:10980.
DOI:10.1038/s41598-018-29362-1

Obesity Misclassification Rates for RFM vs BMI (All Comparisons $P < .001$)					
Measure	Men	Women	Mexican Americans	European Americans	African Americans
Misclassification for RFM, %	9.4	12.7	8.2	11.3	9.9
Misclassification for BMI, %	13.0	56.5	35.4	35.2	37.2

High whole-body fat percentage is independently associated with increased mortality. In this study, Investigators aimed to identify a simple anthropometric linear equation that is more accurate than the body mass index (BMI) to estimate whole-body fat percentage among adult individuals.

National Health and Nutrition Examination Survey (NHANES) 1999–2004 data ($n = 12,581$) were used for model development and NHANES 2005–2006 data ($n = 3,456$) were used for model validation.

From the 365 anthropometric indices generated, the final selected equation was as follows: $64 - (20 \times \text{height/waist circumference}) + (12 \times \text{sex})$, named as the relative fat mass (RFM); sex = 0 for men and 1 for women. In the validation dataset, compared with BMI, RFM better predicted whole-body fat percentage, measured by dual energy X-ray absorptiometry (DXA), among women and men. RFM showed better accuracy than the BMI and had fewer false negative cases of body fat-defined obesity among women and men. RFM reduced total obesity misclassification among all women and all men and, overall, among Mexican-Americans, European-Americans and African-Americans.

In the population studied, the suggested RFM was more accurate than BMI to estimate whole-body fat percentage among women and men and improved body fat-defined obesity misclassification among American adult individuals of Mexican, European or African ethnicity.

“RELATIVE FAT MASS (RFM) EQUATION:

MALE: 64- (20× HEIGHT/WAIST CIRCUMFERENCE)

FEMALE: 64- (20× HEIGHT/WAIST CIRCUMFERENCE)+ 12”

2. HIGH TG/HDL-C RATIO ASSOCIATED WITH INCREASE INCIDENCE OF MICRO- AND MACRO-ANGIOPATHIES IN T2DM

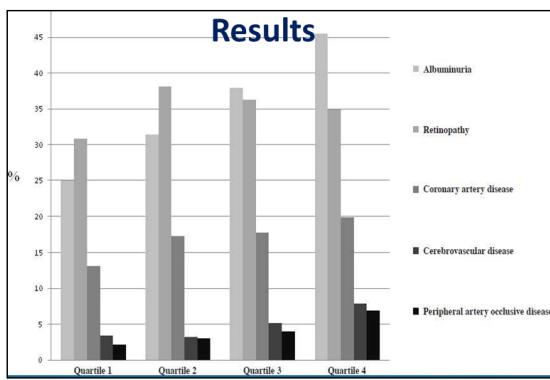
High TG/HDL-C Ratio Associated with Increase Incidence of Micro- and Macro-angiopathies in T2DM

1,981 patients with T2DM



Stratified into 4 groups according to TG/HDL-C quartile based on cutoff value for each quartile

1. <1.7
2. 1.7 to 2.7
3. 2.7 to 4.2
4. ≥ 4.2



Stepwise increases in albuminuria ≥ 30 mg/g ($P < 0.001$), coronary artery disease (CAD, $P = 0.040$), cerebrovascular disease (CVA, $P = 0.002$) and ankle-brachial index (ABI) < 0.9 ($P = 0.001$)

Ref: Endocr Pract. 2018;24(7):615-621.

Conclusion

High TG/HDL-C ratio was significantly associated with albuminuria, CAD, CVA, and peripheral artery occlusive disease (PAOD) in patients with DM, which translated into an increased risk of cardiovascular disease.



Objective:

The triglyceride (TG) to high-density lipoprotein cholesterol (HDL-C) ratio has been reported to be a marker of insulin resistance. The aim of this study was to investigate associations between the TG/HDL-C ratio and micro- and macroangiopathies in patients with type 2 diabetes mellitus (DM).

Methods:

A total of 1,981 (851 male and 1,130 female) patients with type 2 DM were enrolled from our outpatient clinic. These patients were stratified into 4 groups according to TG/HDL-C ratio quartiles.

Results:

There were significant trends for stepwise increases in albuminuria ≥ 30 mg/g ($P < .001$), coronary artery disease (CAD, $P = .040$), cerebrovascular disease (CVA, $P = .002$) and ankle-brachial index (ABI) < 0.9 ($P = .001$) corresponding to TG/HDL-C ratio quartiles, but not diabetic retinopathy ($P = .105$). Furthermore, quartile 4 of the TG/HDL-C ratio was significantly associated with albuminuria, CAD, CVA, and ABI < 0.9 after multivariate analysis compared to quartile 1.

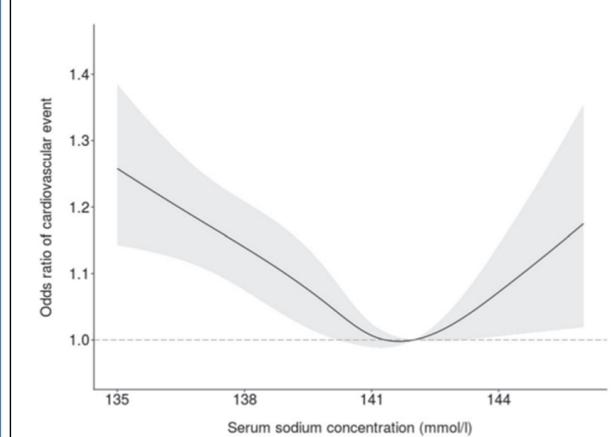
"A high TG/HDL-C ratio was significantly associated with albuminuria, CAD, CVA, and peripheral artery occlusive disease (PAOD) in patients with DM, which translated into an increased risk of cardiovascular disease."

3. SERUM SODIUM: WHAT LEVEL IS OPTIMAL FOR BETTER CV HEALTH?

Serum Sodium: What Level is Optimal for Better CV Health?

- There is a 'J-shaped' relationship between serum sodium concentrations within the normal physiological range and incident cardiovascular events.
- Higher serum sodium is associated with increased cardiovascular risk in hypertensive individuals, but not in normotensives.
- Lower serum sodium is associated with increased cardiovascular risk in both normotensive and hypertensive individuals.

Lowest cardiovascular risk was found with a serum sodium between 141 and 143 mmol/l.



Journal of Human Hypertension. 2018; Sept.
<https://doi.org/10.1038/s41371-018-0115-5>



Background:

The mechanisms underlying the adverse cardiovascular effects of increased salt intake are incompletely understood, but parallel increases in serum sodium concentration may be of importance. The aim of this retrospective cohort study was to investigate the relationship between serum sodium, hypertension and incident cardiovascular disease (CVD).

Methods:

Routinely collected primary care data from the Royal College of General Practitioners Research and Surveillance Centre were analysed. A total of 231,545 individuals with a measurement of serum sodium concentration at baseline were included. The primary outcome was incident CVD (myocardial infarction, acute coronary syndrome, coronary revascularisation, stroke, transient ischaemic attack or new heart failure diagnosis) over 5 years.

Results:

There was a 'J-shaped' relationship between serum sodium concentration and primary cardiovascular events that was independent of established risk factors, medications and other serum electrolytes. The lowest cardiovascular risk was found with a serum sodium between 141 and 143 mmol/l. Therefore, alterations in serum sodium concentration may be a useful indicator of CVD risk. Higher serum sodium could have a direct effect on the vasculature, particularly in hypertensive individuals. Lower serum sodium may be a reflection of complex volume and neuroendocrine changes.

“HIGHER SERUM SODIUM WAS ASSOCIATED WITH INCREASED RISK IN HYPERTENSIVE INDIVIDUALS, WHEREAS LOWER CONCENTRATIONS WERE ASSOCIATED WITH INCREASED RISK IN ALL INDIVIDUALS.”

4. APPLE WATCH 4 ADDS ECG AND MORE HEART-MONITORING CAPABILITIES

APPLE WATCH 4 ADDS ECG AND MORE HEART-MONITORING CAPABILITIES

Technology Update- Cardiology

The new watch is one of the first over-the-counter devices in the US to offer electrocardiogram, or ECG, readings which detects atrial fibrillation.

On top of that, the Apple Watch has received FDA clearance—both for the ECG feature and another new feature that **detects atrial fibrillation**

<https://techcrunch.com/2018/09/12/apple-watch-series-4-can-detect-afib-and-perform-an-ecg/>



The new Apple Watch Series 4, revealed by Apple, underscores that some of the watch's most important features are its health and fitness-tracking functions. The new watch is one of the first over-the-counter devices in the US to offer electrocardiogram, or ECG, readings. On top of that, the Apple Watch has received FDA clearance—both for the ECG feature and another new feature that detects atrial fibrillation. The Watch also now detects when someone falls and uses Siri to initiate an emergency call if the wearer hasn't moved after a fall.

The Series 4 watch will send a notification if your heart rate is too low, and if it detects instances of atrial fibrillation. And it allows wearers to take an electrocardiogram, as mentioned earlier. The latter two features are possible because of Apple Watch's new status as an FDA cleared device.

The biggest updates ushered in with this new smartwatch are a combination of hardware-and-software features. One of the watch's new faces is an incredibly dense, health-focused face, that shows your activity levels, heart rate, workout shortcuts, a shortcut to music, and more. Another watch face is comprised entirely of Apple's "Breathe" app, an app that reminds you to, well, breathe.

"The new watch is one of the first over-the-counter devices in the US to offer electrocardiogram, or ECG, readings. On top of that, the Apple Watch has received FDA clearance—both for the ECG feature and another new feature that detects atrial fibrillation. "

5. STATIN COMBINATION THERAPY IS BETTER: ANOTHER EVIDENCE FROM META-ANALYSIS

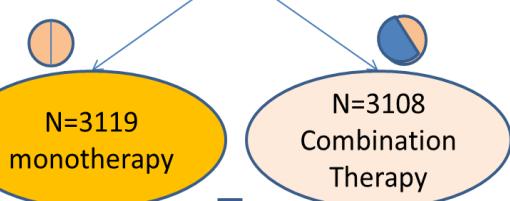
Statin Combination Therapy is Better: Another Evidence from Meta-analysis

12 Randomized Controlled Trial
N=6227 patients with ASCVD Risk

Incidence of adverse events was not significantly different between the two groups

Conclusion

Combination therapy can bring better effect in reducing lipid. It does not increase the incidence of adverse events, so it can be used widely and safely



43% more patients achieved target LDLc level in combination treatment group

Aging Med. 2018;00:1–9. <https://doi.org/10.1002/agm2.12032>



Objective:

This study aimed to compare the effect and safety of statin monotherapies and combination therapies on lipid lowering therapies.

Methods:

We searched for published randomized controlled trial (RCT) reports of statin monotherapies and combination therapies in patients with high risk of CV events, and extracted lipid levels to perform meta analysis.

Results:

A total of 12 RCT reports were included in this study. According to the new guidelines (low density lipoprotein cholesterol [LDL C]<100 mg/dL, high density lipoprotein cholesterol [HDL C]>130 mg/ dL), the percent of LDL-C attaining goals in combination therapy is more than that of monotherapy (risk ratio [RR] = 1.43, 95% confidence interval [CI]: 1.13 to 1.82, P = 0.003), and the percent of LDL-C and HDL-C attaining goals in combination therapy is greater than that of monotherapy (RR = 1.43, 95% CI: 1.24 to 1.65, P= 0.000). The changing level of blood lipid had significant statistical difference between the two groups. The degree of blood lipid lowered by combination therapy was larger than in monotherapy. The incidence of adverse events was not significantly different between the two groups (RR = 1.15, 95% CI: 0.91 to 1.37, P = 0.096; RR = 1.5, 95% CI: 0.55 to 4.1, P= 0.427; RR = 0.63, 95% CI: 0.33 to 1.24, P= 0.181 in incidence of total adverse events, drug related treatment, and myalgia, respectively).

“COMBINATION THERAPY CAN BRING BETTER EFFECT IN REDUCING LIPID. IT DOES NOT INCREASE THE INCIDENCE OF ADVERSE EVENTS, SO IT CAN BE USED WIDELY AND SAFELY.”

6. PRE-PROCEDURAL STATIN USE IS BENEFICIAL IN PATIENTS UNDERGOING CAROTID ARTERY STENTING (CAS)

Pre-Procedural Statin Use Is Beneficial In Patients Undergoing Carotid Artery Stenting (CAS)

Objective	Methods	Results
To evaluate long-term survival of patients who undergo CAS considering new occurred major adverse cardiovascular event (MACE) as time-dependent cofactor	171 high cardiovascular risk patients (age 72 ± 8 years, 125 males) were enrolled after CAS procedure and were followed for a median of 8.4 years.	<p>Total Death- 44%</p> <ul style="list-style-type: none"> Death in statin user: 33% Death in non statin user: 65% <p>Statin use associated with 64% reduced risk of death and 59% reduced risk of stroke</p>
Conclusion		J. Clin. Med. 2018, 7(9), 286
Use of statins before CAS procedure is associated with increased long-term survival and reduced MACE occurrence.		

Background:

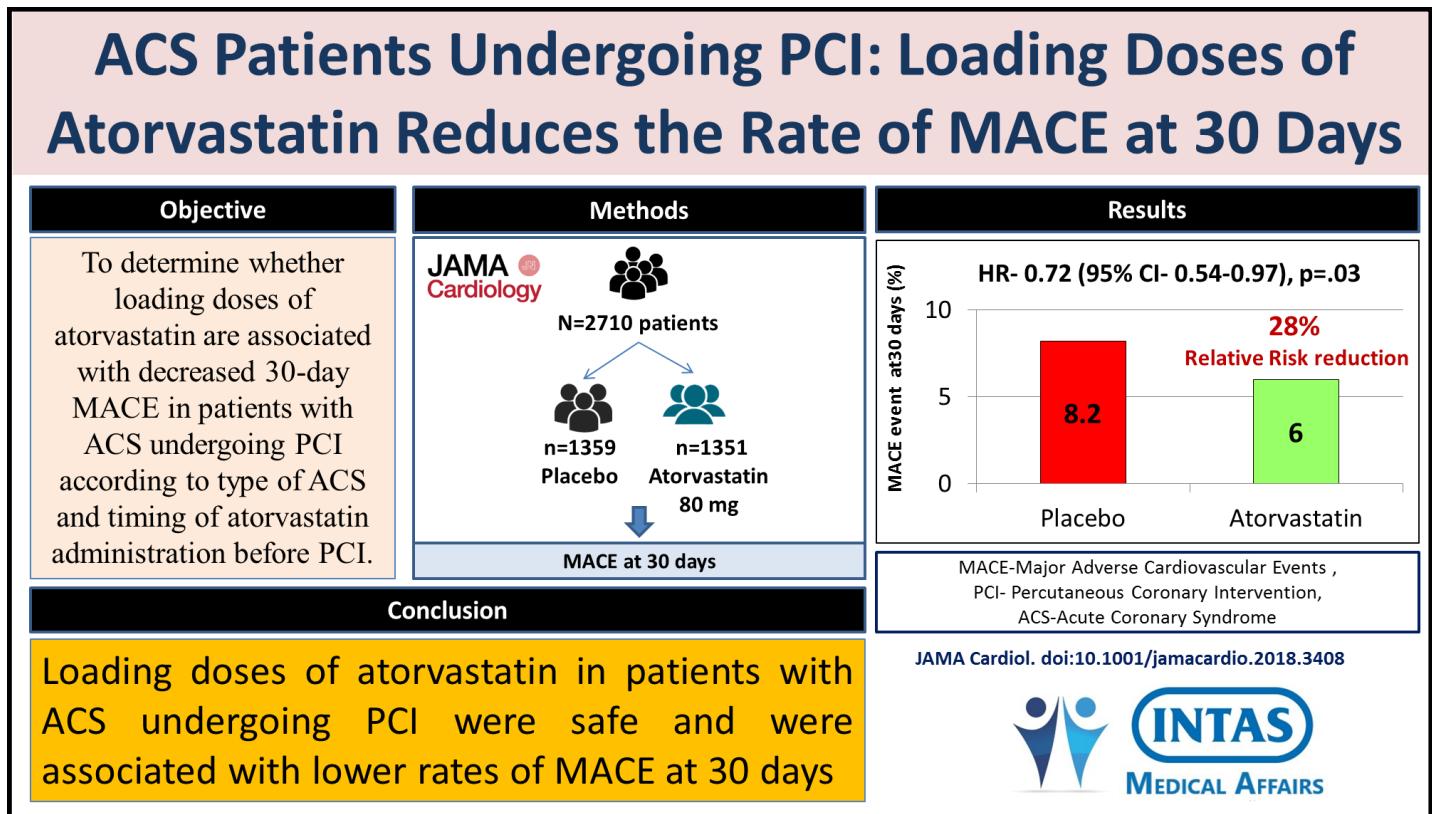
Carotid artery stenting (CAS) is a minimal invasive procedure used to resolve carotid occlusion that can be affected by peri-procedural complications. Statin use before CAS has shown to reduce peri-procedural risk and improve survival, though time-dependent cofactors that influence mortality has not been considered. The aim of this study was to evaluate long-term survival of patients who undergo CAS considering new occurred major adverse cardiovascular event (MACE) as time-dependent cofactor.

Results:

In this study, 171 high cardiovascular risk patients (age 72 ± 8 years, 125 males) were enrolled after CAS procedure and were followed for a median of 8.4 years. Death occurred in 44% of patients with a mean time to death of 69 ± 39 months and MACE in 34% with a mean time of 35 ± 42 months. In patients who used or not statins at baseline, death occurred in 33% and 65%, respectively ($p < 0.001$). Survival analysis showed that statin use reduced risk of death (hazard ratio HR 0.36, 95% confidence interval CI 0.23–0.58, $p < 0.0001$). Including MACE as time-dependent variable did not change beneficial effects of statins. Additionally, statin use was associated with a protective effect on MACE (HR 0.48, 95% CI 0.27–0.85, $p = 0.012$); particularly, the prevalence of stroke was reduced by 59% ($p = 0.018$). In multivariate analysis, effects of statins were independent of demographic and anthropometric variables, prevalence of cardiovascular risk factors, renal function, antiplatelet use, and MACE occurrence.

"USE OF STATINS BEFORE CAS PROCEDURE IS ASSOCIATED WITH INCREASED LONG-TERM SURVIVAL AND REDUCED MACE OCCURRENCE."

7. ACS PATIENTS UNDERGOING PCI: LOADING DOSES OF ATORVASTATIN REDUCES THE RATE OF MACE AT 30 DAYS



OBJECTIVES:

To determine whether periprocedural loading doses of atorvastatin are associated with decreased 30-day major adverse cardiovascular events (MACE) in patients with ACS undergoing PCI according to type of ACS and timing of atorvastatin administration before PCI.

METHODS:

This multicenter trial conducted at 53 sites that enrolled 4191 patients with ACS intended to be treated with PCI between April 18, 2012, and October 06, 2017. Patients were randomized to 2 loading doses of 80 mg of atorvastatin or matching placebo before and 24 hours after a planned PCI. By protocol, all patients (regardless of treatment group) received 40 mg of atorvastatin for 30 days starting 24 hours after the second dose of study medication. The primary outcome was MACE through 30 days, composed by all-cause mortality, myocardial infarction, stroke, and unplanned coronary revascularization.

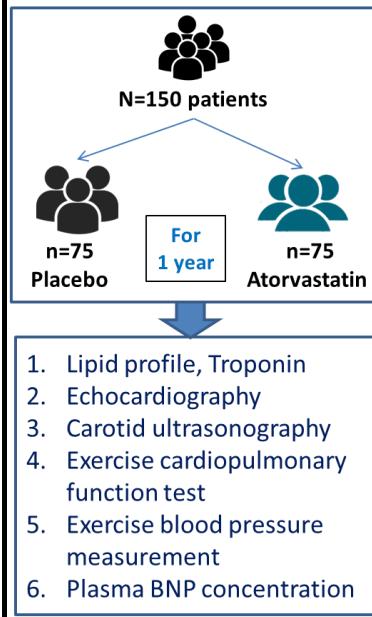
RESULTS:

From the overall trial population, 2710 (64.7%) underwent PCI. Loading atorvastatin was associated with reduced MACE at 30 days by 28% in the PCI group (adjusted hazard ratio [HR], 0.72; 95% CI 0.54-0.97; P = .03). Loading dose of atorvastatin was administered less than 12 hours before PCI in 2548 patients (95.3%) (45.1% < 2 hours and 54.3% between 2 and 12 hours). There was no significant interaction between treatment effect and timing of study drug administration. The treatment effect of loading atorvastatin was more pronounced in patients with STEMI than in patients with NSTE-ACS.

"IN PATIENTS WITH ACS UNDERGOING PCI, PERIPROCEDURAL LOADING DOSES OF ATORVASTATIN APPEARED TO REDUCE THE RATE OF MACE AT 30 DAYS, PRIMARILY IN PATIENTS WITH STEMI."

8. ATORVASTATIN CAN IMPROVE LV REMODELING AND IMPROVE CARDIAC DIASTOLIC FUNCTION

Atorvastatin can Improve LV Remodeling and Improve Cardiac Diastolic Function



Results

- left ventricular mass index (LVMI) and cardiac diastolic function index were improved with atorvastatin group compared to control group.
- The exercise BNP decreased significantly in the atorvastatin group compared to control group
- With atorvastatin group:
 - Exercise Systolic Blood Pressure was decreased,
 - Exercise tolerance was improved and
 - Exercise time was prolonged

Pak J Pharm Sci. 2018 Jul;31(4(Special)):1725-1730.

Conclusion

Atorvastatin can effectively improve cardiac diastolic function by lowering blood pressure and reducing SBP, improving vascular endothelial function, anti arteriosclerosis effect, improving ventricular remodeling, and reducing the plasma BNP concentration.



Background:

Statins have multiple anti lipid effects, such as anti-inflammatory, anti-oxidation and anti arteriosclerosis, which are beneficial to improve cardiac function. Statins can effectively improve left ventricular remodeling and protect ventricular diastolic function.

Objective:

In this study, the effects of statin therapy on diastolic function and BNP level and exercise tolerance after exercise were observed by statins in patients with diastolic dysfunction.

Results:

The results showed that after atorvastatin treatment, the exercise BNP decreased in the treatment group, which was significantly different from that before treatment and in the control group ($P<.05$). Left ventricular mass index (LVMI) and cardiac diastolic function index were improved with atorvastatin group compared to control group. With atorvastatin group, Exercise Systolic Blood Pressure was decreased, Exercise tolerance was improved and Exercise time was prolonged.

"Atorvastatin can effectively improve cardiac diastolic function by lowering blood pressure and reducing SBP, improving vascular endothelial function, anti arteriosclerosis effect, improving ventricular remodeling, and by reducing plasma BNP concentration "

9. STATINS, FIBRATES LOWER DIABETIC RETINOPATHY RISKS IN DIABETES

Statins, Fibrates Lower Diabetic Retinopathy Risks in Diabetes

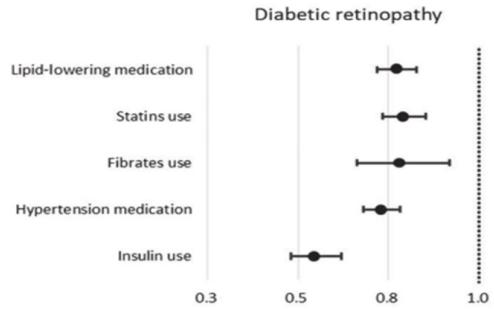
Methods

69 070 individuals with type 2 diabetes

Followed for 3-years and observed for incidence of diabetic retinopathy



Results



Incidence of diabetic retinopathy was reduced by around **23%** with the use of lipid-lowering medication (**fibrates and statins**)



Aims:

Fenofibrate and statins reduced the need for diabetic retinopathy (DR)-related treatment in clinical trials. We aimed to determine whether use of lipid-lowering medication reduces the risk of DR and the need for treatment in patients with type 2 diabetes using a real-world health claims database.

Methods:

This was an observational analysis using a nation-wide health claims database of the Japan Medical Data Center (JMDC). Use of lipid-lowering medication for at least 1 year was confirmed by the Anatomical Therapeutic Chemical Classification System. DR and diabetic macular edema (DME) were determined by ICD-10 codes. DR-related treatments were determined by health insurance claims. Odds ratios (OR) with 95% confidence interval (95% CI) was calculated for cumulative incidence of DR and its treatments over 3 years.

Results:

There were 69 070 individuals with type 2 diabetes at baseline, among whom DR developed in 5687 over a period of 3 years. Use of lipid-lowering medication was associated with decreased risk of incidence of DR (OR, 0.772; 95% CI, 0.720-0.827; P < .001). Use of lipid lowering medication was also associated with decreased incidence of DME, any treatments for DR, laser photocoagulation and vitrectomy in patients with DR at baseline.

"IN A POPULATION OF PATIENTS WITH TYPE 2 DIABETES WITH A VARIETY OF RISK PROFILES, USE OF LIPID-LOWERING MEDICATION REDUCED THE RISK OF DR AND THUS THE RISKS INVOLVED IN TREATMENT WITH LASER PHOTOCOAGULATION AND VITRECTOMY."

10. TORSEMIDE IS SUPERIOR TO FUROSEMIDE IN HEART FAILURE: METAANALYSIS

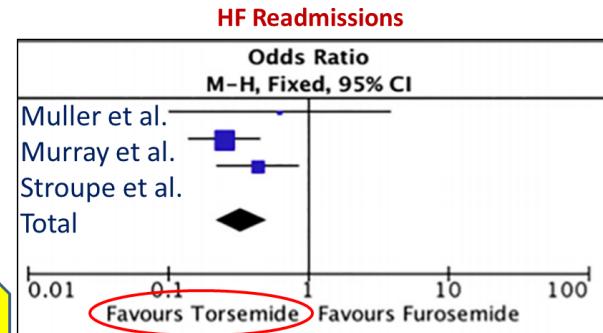
Torsemide is Superior to Furosemide in Heart Failure: Metaanalysis

Metaanalysis of Randomized Controlled Trial
(N=664 Patients of HF)



Conclusion
Torsemide compared to furosemide:

- ✓ 67% decrease in HF readmissions
- ✓ 47% decrease in total CV readmissions
- ✓ Extremely low Number Needed to Treat (NNT) to prevent HF and CV readmissions.



Ref: European Journal of Internal Medicine. August 2018.
<https://doi.org/10.1016/j.ejim.2018.08.015>



Background:

Loop diuretics are a part of standard therapy in symptomatic HF patients to decrease hospitalizations. Data from small randomized trials and observational studies have shown superiority of torsemide in reducing HF hospitalizations compared to furosemide. Despite that, > 80% HF patients are on furosemide and < 10% are on Torsemide. Hence, investigators performed a meta-analysis of randomized controlled trials (RCTs) comparing torsemide and furosemide in HF.

Methods:

After reviewing relevant trials, investigator included 3 RCTs reporting outcomes of HF readmissions, cardiovascular (CV) readmissions, and mortality and estimated pooled odd ratio (OR) and 95% confidence intervals (CI) for individual endpoints using fixed-effect model.

Results:

A total of 664 patients were included for analysis (328-torsemide, 336-furosemide). The mean follow-up was 11 months, and mean age was 67.2 years, with 57% females. Heart failure readmissions were significantly lower in torsemide group ($n = 42$) versus furosemide group ($n = 98$) (OR-0.33, CI (0.22–0.50), $p < .0001$). Readmissions for any CV cause were also significantly lower in torsemide group ($n = 121$) compared to furosemide group ($n = 196$) (OR-0.53, CI (0.32–0.87), $p = .01$). There was no significant difference in adverse events. The numbers needed to treat (NNT) with torsemide to prevent a HF and CV readmission were 6 and 4.7 respectively. Based on the results of this meta-analysis, the OR of 0.33 for HF readmissions with torsemide would imply 67% reduction in HF readmissions with torsemide use compared to furosemide use over 1 year.

"Torsemide considerably decreases HF and total CV readmissions compared to furosemide."

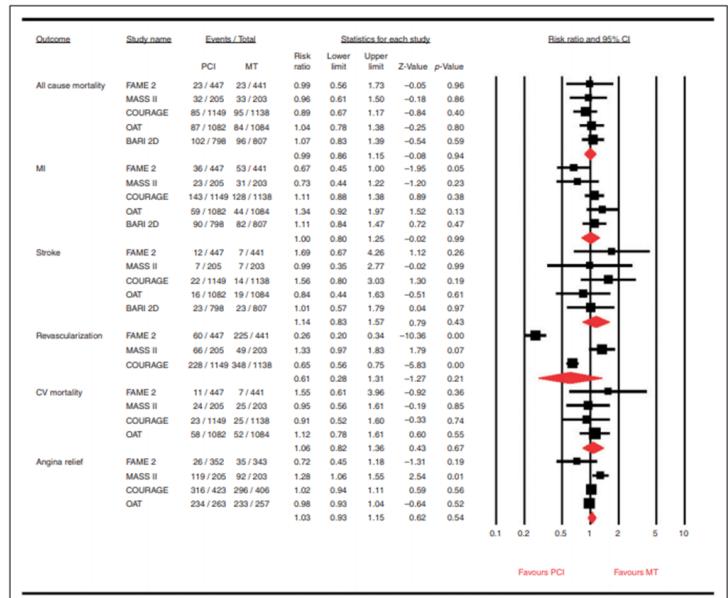
11. PCI WAS NOT ASSOCIATED WITH A REDUCED CV OUTCOMES OR SURVIVAL BENEFIT COMPARED WITH MEDICAL THERAPY IN STABLE CAD

PCI Was Not Associated With a Reduced CV Outcomes or Survival Benefit Compared with Medical Therapy in Stable CAD

This meta-analysis suggests that in patients with stable CAD, PCI was not associated with a reduction in cardiovascular outcomes, angina relief or survival benefit compared with Medical Therapy (Statin, antiplatelet , ACEi and Beta blocker) at 5 years mean follow-up duration.



Eur J Prev Cardiol. 2018 Sep 18:2047487318800511.
doi: 10.1177/2047487318800511.



Investigators have performed meta-analysis comparing the efficacy of PCI versus Medical therapy at a mean follow-up duration of 5 years. A comprehensive search strategy was devised using MEDLINE, EMBASE and CENTRAL (inception to 30 May 2018) to identify randomized controlled trials (RCTs) with a sample size greater than 400 patients (to avoid small study effects) and over 4 years follow-up duration. Investigators included trials reporting PCI with stent implantation in 70% or more of the patients and statin therapy in 50% or more patients in the study population. The outcomes of interest were all-cause mortality, myocardial infarction (MI), stroke, cardiovascular mortality, revascularization and angina relief.

At a mean follow-up duration of 5 years, there were no significant differences between PCI and MT in terms of all-cause mortality (RR 0.99, 95% CI 0.86–1.15, P = 0.95, I² = 0%), MI (RR 1.00, 95% CI 0.80–1.25, P = 0.99, I² = 54%), stroke (RR 1.14, 95% CI 0.83–1.57, P = 0.43, I² = 0%), revascularization (RR 0.61, 95% CI 0.28–1.31, P = 0.21, I² = 97%), cardiovascular mortality (RR 1.06, 95% CI 0.82–1.36, P = 0.67, I² = 0%) or angina relief (RR 1.03, 95% CI 0.93–1.15, P = 0.54, I² = 66%). Egger's regression test did not detect publication bias (P (two-tailed) = 0.19). This meta-analysis suggests that in patients with stable CAD, PCI was not associated with a reduction in cardiovascular outcomes, angina relief or survival benefit compared with MT at 5 years mean follow-up duration. The former meta-analyses included studies with shorter follow-ups with the lesser use of stents, which is contrary to the current standard of care.

"PCI WAS NOT ASSOCIATED WITH A REDUCTION IN CARDIOVASCULAR OUTCOMES, ANGINA RELIEF OR SURVIVAL BENEFIT COMPARED WITH MEDICAL THERAPY IN STABLE CAD "

This information is brought to you by



Disclaimer: The matter content in this infographics are solely for educational information only. It does not intend either directly or indirectly expressly or impliedly meant to promote, propagate, advertise or otherwise endorsing any particular product or brand. The matter content in this infographics do not make any representation or warranties with respect to the efficacy, accuracy, usefulness or applicability, or fitness, or completeness for any particular purpose. The Contents are not and are not intended to be a alternative/substitute for professional medical advice, diagnosis, or treatment. It is advised to always seek the advice of your physician or other qualified health provider with any questions you may have regarding a medical condition. Never disregard professional medical advice or delay in seeking it because of something you have read or seen in this infographic. The creators of this infographic hereby disclaim any and all liability to any party for any direct, indirect, implied, punitive, special, incidental or other consequential damages arising directly or indirectly from any use of this infographics, which is provided as is, and without warranties.