Circumferential and Longitudinal Strain in 3 Myocardial Layers in Normal Subjects and in Patients with Regional Left Ventricular Dysfunction.


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Safety and effectiveness of the endeavor zotarolimus-eluting stent in real-world clinical practice 12-month data from the e-five registry.


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Characteristics of oxygen- and nitroglycerin-induced vasodilation were measured in 64 patients with CHF and 64 controls. We measured the percentage of patients with an increase of 5% or more in reactive hyperemia and the percentage of patients with a flow-mediated dilatation (FMD) of 5% or more. We also assessed the effect of nitroglycerin on FMD. The results showed that the percentage of patients with a flow-mediated dilatation of 5% or more was significantly higher in the CHF group than in the control group (71% versus 41%, P<0.05). The percentage of patients with an increase of 5% or more in reactive hyperemia was also significantly higher in the CHF group than in the control group (73% versus 49%, P<0.05). The percentage of patients with a flow-mediated dilatation of 5% or more in response to nitroglycerin was also significantly higher in the CHF group than in the control group (64% versus 31%, P<0.05). These findings suggest that flow-mediated dilatation is a useful tool for the evaluation of endothelial function in patients with CHF.


dian Journal of Cardiology, Rambam Medical Center, Haifa, Israel.

CONCLUSIONS: The results of this study suggest that the use of flow-mediated dilatation is a useful tool for the evaluation of endothelial function in patients with CHF. Further studies are needed to confirm these findings and to determine the clinical relevance of flow-mediated dilatation in patients with CHF.


Chaim Sheba Medical Center, Tel-Hashomer, Israel.

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Antibodies to oxidized LDL as predictors of morbidity and mortality in patients with chronic heart failure.

Chorag, George J, Afsk A, Wexler D, Sheps D, Keren G, Rubinstein A.

BACKGROUND: Oxidative stress appears to play a significant role in the pathogenesis of heart failure (HF). Antibodies to oxidized low-density lipoprotein (Ox LDL) reflect an immune response to LDL over a prolonged period and may thus indicate a common abnormality for an extended time. Ox LDL Abs have been shown to correlate with functional class, atrial fibrillation, and mortality in patients with HF. We evaluated the predictive power of Ox LDL Abs on the outcome in patients with HF, respectively: CONCLUSIONS: Ox LDL Abs level maybe a useful marker for predicting HF and planning better management of patients with HF. It was significantly associated with mortality when evaluated by a Cox multivariate regression analysis and expressed as hazard ratio in hospitalization.

Conflict of interest: None.

Vascular endothelial function predicts mortality risk in patients with advanced ischemic chronic heart failure.

Shechter M, Mattetzky S, Arad M, Feinberg MS, Freimark D.

Heart Institute, Chaim Sheba Medical Center, Tel Hashomer, Israel

BACKGROUND: The effects of pan-peroxisome proliferator-activated receptor ligand bezafibrate on N-terminal pro-B type natriuretic peptide (NT pro-BNP) level in patients with chronic heart failure (CHF) is unknown. The current study aimed to investigate the long-term effects of bezafibrate on NT pro-BNP level in patients with pre-existing CAD and advanced functional capacity impairment.

METHODS: Metabolic and inflammatory markers were assessed from stored frozen serum samples obtained from 106 patients enrolled in the Bezafibrate Infarction Prevention (BIP) study. The present with New York Heart Association (NYHA) functional class III, comprising 58 patients in the bezafibrate group and 30 in the placebo group, and completed a 2-year prospective, double-blind, placebo-controlled follow-up. RESULTS: During follow-up NT pro-BNP level did not change significantly in the placebo group, whereas it increased slightly in the bezafibrate group, which was older and with lower baseline NT pro-BNP values. No significant between-group differences were observed for the change in NT pro-BNP level at 2-year follow-up. Conclusions: Long-term treatment with bezafibrate was not associated with longitudinal NT pro-BNP changes in patients with pre-existing CAD and advanced functional capacity impairment.

Conflict of interest: None.

Increased insulin resistance and risk of incident cerebrovascular events in patients with pre-existing atherothrombotic disease.

Tanne D, Tenenbaum A, Boyko V, Benderly M, Fisman E, Matas Z, Adler Y, Behar S.

Chaim Sheba Medical Center, Tel-Hashomer, Israel

BACKGROUND: Oxidative stress appears to play a significant role in the pathogenesis of heart failure (HF). Antibodies to oxidized low-density lipoprotein (Ox LDL) reflect an immune response to LDL over a prolonged period and may thus indicate a common abnormality for an extended time. Ox LDL Abs have been shown to correlate with functional class, atrial fibrillation, and mortality in patients with HF. We evaluated the predictive power of Ox LDL Abs on the outcome in patients with HF, respectively: CONCLUSIONS: Ox LDL Abs level maybe a useful marker for predicting HF and planning better management of patients with HF. It was significantly associated with mortality when evaluated by a Cox multivariate regression analysis and expressed as hazard ratio in hospitalization.

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Conflict of interest: None.
Circumferential and Longitudinal Strain in 3 Myocardial Layers in Normal Subjects and in Patients with Regional Left Ventricular Dysfunction.


Department of Cardiology, Assaf Harofeh Medical Center, Zerifin, Sacker School of Medicine, Tel Aviv University, Tel Aviv, Israel. Tel-Hashomer was highest in the apex and lowest in the base. Epicardial longitudinal strain was homogenous over the left ventricle. Circumferential 3-layer strain was highest in the apex and lowest in the base. In patients with LV systolic dysfunction, strain was lower with late diastolic or double peak. CONCLUSIONS: Three-layer analysis of circumferential and longitudinal strain using speckle-tracking imaging can be performed on a clinical basis and may become an important method for the assessment of real-time, quantitative global and regional LV function.

Safety and effectiveness of the endeavor zotarolimus-eluting stent in real-world clinical practice 12-month data from the e-five registry.


Heart Institute, Hadassah Hebrew University Medical Center, Jerusalem, Israel. The E-Five registry is a prospective, nonrandomized, multicenter global registry conducted at 186 centers worldwide. Adult patients (n = 3,814) with coronary artery disease who underwent single- or multivessel percutaneous coronary intervention were enrolled. The primary end point was the incidence of major adverse cardiac events (MACE) at 12 months. A secondary analysis stratified patients by standard versus extended-use clinical and lesion characteristics. Overall 12-month outcome rates were MACE 7.5%; cardiac death 1.7%; myocardial infarction (all) 1.6%; target lesion revascularization 4.5%; and stent thrombosis (Academic Research Consortium) 0.7%. The 12-month MACE rates were similar in standard and extended-use patients, respectively (p < 0.001). CONCLUSIONS: This large, multicenter international registry provides important information regarding the short-term safety and efficacy of the Endeavor ZES across both standard and extended-use patients in the real-world setting. Rates of MACE and stent thrombosis (including cardiac death, myocardial infarction, and stent thrombosis) were low and consistent with pooled results of clinical trials. (E-Five Investigators. J Am Coll Cardiol. 2009;54:1892-900).

Cardiovascular Diabetology

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Meta-analysis of the effect of niacin acid alone or in combination on cardiovascular events and atherosclerosis.


OBJECTIVE: High-density lipoprotein cholesterol (HDL-C) concentration is a strong predictor of cardiovascular events in both naive and statin-treated patients. Niacin acid is an attractive option for decreasing residual risk in statin-treated or statin-intolerant patients. In addition, increases HDL-C by up to 20% and decreases low-density lipoprotein cholesterol and lipoprotein(a) plasma concentrations. METHODS: We performed a meta-analysis of 5 randomized clinical trials that focused on clinical trials evaluating niacin, alone or in combination with other lipid-lowering drugs, published between January 1966 and August 2008. RESULTS: Among 587 citations, 29 full articles were read and 14 were eligible for inclusion. Overall 11 randomized controlled trials enrolled 2682 patients in the active group and 3934 in the control group. In primary analysis, niacin significantly reduced major coronary events (relative odds reduction=25%, 95% CI 13.35, stroke=26%, 95% CI=5.841) and any cardiovascular events (27%, 95% CI=15.37). Except for stroke, the pooled between-group difference remained significant in sensitivity analysis excluding the largest trial. In comparison with the non-niacin group, more in combination with other lipid-lowering drugs, published between January 1966 and August 2008. RESULTS: Among 587 citations, 29 full articles were read and 14 were decreased by 41%, 95% CI=25.53. Similar effects of niacin were found on carotid intima thickness with a weighted mean difference in annual change of -0.07mm/year (95% CI 0.02 - 0.12). CONCLUSIONS: Although the studies were conducted before statin therapy became standard care, and mostly in patients in secondary prevention, with various dosages of niacin acid 1-3g/day, this meta-analysis found positive effects of niacin alone or in combination on all cardiovascular events and on atherosclerosis evolution.

Cardiovascular Diabetology Newsletter

Chairman: Prof. A. Tenenbaum
Secretary: Dr. I. Hay
Board: Prof. E. Z. Fisman, Prof. M. Moto, Prof. I. Shapira, Prof. D. Aronson

Working Group on Cardiovascular Pharmacology and Drug Therapy of the Israel Heart Society

The recent meeting of our Working Group took place on February 8 2010 at Delphi Restaurant, Tel-Aviv, and it was dedicated to two interrelated topics: 1) the etiology, pathophysiology, prevalence and clinical characteristics of the fatty liver, and 2) the possible safety concerns regarding hepatic function in patients on statin therapy. The invited speakers, Prof. Ran Oren – head of the Hepatology Unit at Ichilov Hospital - brought an updated and authoritative view of this essential issue. The main take home messages were that NFLD (nonalcoholic fatty liver disease) is a rather common finding, affecting more of 25% of obese individuals, and ranges from simple steatosis to eventually severe steatohepatitis. It presents a strong positive correlation with obesity and insulin resistance; thus, it may be considered as the hepatic expression of the metabolic syndrome. In addition, as a general rule, the several types of statin medication do not negatively affect hepatic function. The presentation was followed by a friendly panel discussion. The meeting was sponsored by Pfizer Israel.

Objective: High-density lipoprotein cholesterol (HDL-C) concentration is a strong predictor of cardiovascular events in both naive and statin-treated patients. Niacin acid is an attractive option for decreasing residual risk in statin-treated or statin-intolerant patients. In addition, it decreases HDL-C by up to 20% and decreases low-density lipoprotein cholesterol and lipoprotein(a) plasma concentrations. METHODS: We performed a meta-analysis of 5 randomized clinical trials that focused on clinical trials evaluating niacin, alone or in combination with other lipid-lowering drugs, published between January 1966 and August 2008. RESULTS: Among 587 citations, 29 full articles were read and 14 were eligible for inclusion. Overall 11 randomized controlled trials enrolled 2682 patients in the active group and 3934 in the control group. In primary analysis, niacin significantly reduced major coronary events (relative odds reduction=25%, 95% CI 13.35, stroke=26%, 95% CI=5.841) and any cardiovascular events (27%, 95% CI=15.37). Except for stroke, the pooled between-group difference remained significant in sensitivity analysis excluding the largest trial. In comparison with the non-niacin group, more in combination with other lipid-lowering drugs, published between January 1966 and August 2008. RESULTS: Among 587 citations, 29 full articles were read and 14 were decreased by 41%, 95% CI=25.53. Similar effects of niacin were found on carotid intima thickness with a weighted mean difference in annual change of -0.07mm/year (95% CI 0.02 - 0.12). CONCLUSIONS: Although the studies were conducted before statin therapy became standard care, and mostly in patients in secondary prevention, with various dosages of niacin acid 1-3g/day, this meta-analysis found positive effects of niacin alone or in combination on all cardiovascular events and on atherosclerosis evolution.

Currently, niacin acid is the most potent lipid lowering agent effecting other cardio metabolic risk factors, especially when raising HDL-C levels and lowering both triglycerides and LDL-C. Previous clinical trials (like the Coronary Drug Project - 1972, Lee et al J Am Coll Cardiol 2009;54:1787-94). However, niacin is not very commonly used due to its significant side effects (especially flushing). Laropiprant is a potent selective antagonist of P2Y2 receptor subtypes 1 and 4 and thus reduces the incidence of flushing. Although the addition of laropiprant will considerably reduce flushing frequency, it will not completely eliminate this side effect. Laropiprant does not change niacin acid pharmacokinetic or lipid or other side effects of niacin (i.e. gastro-intestinal problems, glucose elevation). The combination of niacin with laropiprant may therefore enable use of niacin at higher doses and therefore exploit the full potential of the drug. Endpoint studies that will be published over the next few years will show whether this treatment modality is also reflected in the clinical outcome of patients treated with statins: the triple combination therapy of statins, fibrates and niacin/laropiprant may reduce flushing side effects and facilitate a more comprehensive treatment for patients with mixed dyslipidemia. An additional large outcome trial is underway: the Treatment of HDL to Reduce the Incidence of Vascular Events (HPS2-THRIVE) study will assess a new combination therapy containing extended-release niacin acid and laropiprant (projected completion in 2013).