Clinical trials of cholesterol lowering intervention for post myocardial infarction in all type of patients

TrialResults-center www.trialresultscenter.org

1 diet

Trial	Treatments	Patients	Trials design and methods
low fat diet vs mediterranean-style diet			
Tuttle , 2008 n=NA follow-up: 24 months	low-fat versus Mediterranean-style diets	First MI survivors	Parallel groups open

References

Tuttle, 2008:

Tuttle KR, Shuler LA, Packard DP, Milton JE, Daratha KB, Bibus DM, Short RA Comparison of low-fat versus Mediterranean-style dietary intervention after first myocardial infarction (from The Heart Institute of Spokane Diet Intervention and Evaluation Trial). Am J Cardiol 2008;101:1523-30 [18489927]

2 ezetimibe

Trial	Treatments	Patients	Trials design and methods
ezetimibe vs placebo (on top statins)			
IMPROVE-IT , 2014 [NCT00202878] n=9067/9077 follow-up: 5.68 years	10 mg/day of ezetimibe and 40 mg/day of simvastatin versus simvastatin 40 mg/day	subjects with stabilized high-risk acute coronary syndrome	Parallel groups double blind 39 countries

References

IMPROVE-IT, 2014:

Cannon CP, Blazing MA, Giugliano RP, McCagg A, White JA, Theroux P, Darius H, Lewis BS, Ophuis TO, Jukema JW, De Ferrari GM, Ruzyllo W, De Lucca P, Im K, Bohula EA, Reist C, Wiviott SD, Tershakovec AM, Musliner TA, Braunwald E, Califf RM Ezetimibe Added to Statin Therapy after Acute Coronary Syndromes. N Engl J Med 2015;372:2387-97 [26039521]

3 fibrates

Trial	Treatments	Patients	Trials design and methods
bezafibrate vs placebo			
BECAIT , 1996 n=47/45 follow-up: 5.0 years	bezafibrate 200 mg three times daily versus placebo	dyslipidaemic male survivors of myocardial infarction who were younger than 45 years at the time of the event	Parallel groups double blind Sweden
BIP , 2000 n=1548/1542 follow-up: 6.2 y	bezafibrate 400 mg/d versus placebo	patients with a previous myocardial infarction or stable angina, total cholesterol of 180 to 250 mg/dL, HDL-C <or =45 mg/dL, triglycerides <or =300 mg/dL, and low-density lipoprotein cholesterol <or =180 mg/dL	Parallel groups double blind Israel
gemfibrozil vs placebo			
VA-HIT , 1999 [NCT00283335] n=1264/1267 follow-up: 5.1 years	gemfibrozil 1.2g daily versus placebo	men with coronary heart disease, an HDL cholesterol level of 40 mg per deciliter (1.0 mmol per liter) or less, and an LDL cholesterol level of 140 mg per deciliter (3.6 mmol per liter) or less	Parallel groups double blind USA

References

BECAIT, 1996:

Ruotolo G, Ericsson CG, Tettamanti C, Karpe F, Grip L, Svane B, Nilsson J, de Faire U, Hamsten A Treatment effects on serum lipoprotein lipids, apolipoproteins and low density lipoprotein particle size and relationships of lipoprotein variables to progression of coronary artery disease in the Bezafibrate Coronary Atherosclerosis Intervention Trial (BECAIT). J Am Coll Cardiol 1998;32:1648-56 [9822092]

Ericsson CG Results of the Bezafibrate Coronary Atherosclerosis Intervention Trial (BECAIT) and an update on trials now in progress. Eur Heart J 1998;19 Suppl H:H37-41 [9717064]

Ericsson CG, Hamsten A, Nilsson J, Grip L, Svane B, de Faire U Angiographic assessment of effects of bezafibrate on progression of coronary artery disease in young male postinfarction patients. Lancet 1996;347:849-53 [8622389]

de Faire U, Ericsson CG, Hamsten A, Nilsson J Design features of a five-year Bezafibrate Coronary Atherosclerosis Intervention Trial (BECAIT). Drugs Exp Clin Res 1995;21:105-24 [7555614]

BIP, 2000:

, Secondary prevention by raising HDL cholesterol and reducing triglycerides in patients with coronary artery disease: the Bezafibrate Infarction Prevention (BIP) study. Circulation 2000; 102:21-7 [10880410]

Goldenberg I, Boyko V, Tennenbaum A, Tanne D, Behar S, Guetta V Long-term benefit of high-density lipoprotein cholesterol-raising therapy with bezafibrate: 16-year mortality follow-up of the bezafibrate infarction prevention trial. Arch Intern Med 2009;169:508-14 [19273782]

VA-HIT, 1999:

Rubins HB, Robins SJ, Collins D, Fye CL, Anderson JW, Elam MB, Faas FH, Linares E, Schaefer EJ, Schectman G, Wilt TJ, Wittes J, Gemfibrozil for the secondary prevention of coronary heart disease in men with low levels of high-density lipoprotein cholesterol. Veterans Affairs High-Density Lipoprotein Cholesterol Intervention Trial Study Group. N Engl J Med 1999; 341:410-8 [10438259]

Adabag AS, Mithani S, Al Aloul B, Collins D, Bertog S, Bloomfield HE Efficacy of gemfibrozil in the primary prevention of atrial fibrillation in a large randomized controlled trial. Am Heart J 2009 May;157:913-8 [19376321]

4 other cholesterol lowering drugs

Trial	Treatments	Patients	Trials design and methods
clofibtate+niacin vs placebo			
Carlson (Stockholm) , 1977 n=279/276 follow-up: 5 years	clofibrate, 1 g twice daily, and nicotinic acid 1 g three times daily versus control	survivors of a myocardial infarction below 70 years of age	Parallel groups open Sweden

References

Carlson (Stockholm), 1977:

Carlson LA, Danielson M, Ekberg I, Klintemar B, Rosenhamer G, Reduction of myocardial reinfarction by the combined treatment with clofibrate and nicotinic acid. Atherosclerosis 1977; 28:81-6 [911371]

Carlson LA, Rosenhamer G, Reduction of mortality in the Stockholm Ischaemic Heart Disease Secondary Prevention Study by combined treatment with clofibrate and nicotinic acid. Acta Med Scand 1988; 223:405-18 [3287837]

5 statins

Trial	Treatments	Patients	Trials design and methods
pravastatin vs placebo			
CARE , 1996 n=2081/2078 follow-up: 5 years	pravastatin 40 mg/d versus placebo	men and women with myocardial infarction who had plasma totalcholesterol levels below 240 mg per deciliter (mean,209) and low-density lipoprotein (LDL) cholesterollevels of 115 to 174 mg per deciliter	Parallel groups double blind USA, Canada
LIPID , 1998 n=4512/4502 follow-up: 6.1 years	pravastatin 40 mg/d versus placebo	patients with previous myocardial infarction or unstable angina and a baseline plasma cholesterol concentration of 4.0-7.0 mmol/L	Parallel groups double blind Australie et Nouvelle Zlande
PACT , 2004 n=1710/1689 follow-up: 30 days	pravastatin initiated within 24 hours of onset of synmptoms and for 4 weeks versus placebo	patients with unstable angina, non-ST-segment elevation myocardial infarction, or ST-segment elevation myocardial infarction <24 hours	Parallel groups double blind
simvastatin vs placebo			
4S , 1994 n=2221/2223 follow-up: 5.4 years	simvastatin 20 or 40 mg/d, target CT between 3 et 5.2 mmol/l versus placebo	patients with angina pectoris or previous myocardial infarction and serum cholesterol 5.5-8.0 mmol/L on a lipid-lowering diet	Parallel groups double blind Scandinavia

References

CARE, 1996:

Sacks FM, Pfeffer MA, Moye LA, Rouleau JL, Rutherford JD, Cole TG, Brown L, Warnica JW, Arnold JM, Wun CC, Davis BR, Braunwald E, The effect of pravastatin on coronary events after myocardial infarction in patients with average cholesterol levels. Cholesterol and Recurrent Events Trial investigators. N Engl J Med 1996; 335:1001-9 [8801446]

Plehn JF, Davis BR, Sacks FM, Rouleau JL, Pfeffer MA, Bernstein V, Cuddy TE, Moy LA, Piller LB, Rutherford J, Simpson LM, Braunwald E Reduction of stroke incidence after myocardial infarction with pravastatin: the Cholesterol and Recurrent Events (CARE) study. The Care Investigators. Circulation 1999;99:216-23 [9892586]

LIPID, 1998:

, Prevention of cardiovascular events and death with pravastatin in patients with coronary heart disease and a broad range of initial cholesterol levels. The Long-Term Intervention with Pravastatin in Ischaemic Disease (LIPID) Study Group. N Engl J Med 1998; 339:1349-57 [9841303]

, Long-term effectiveness and safety of pravastatin in 9014 patients with coronary heart disease and average cholesterol concentrations: the LIPID trial follow-up. Lancet 2002; 359:1379-87 [11978335]

Design features and baseline characteristics of the LIPID (Long-Term Intervention with Pravastatin in Ischemic Disease) Study: a randomized trial in patients with previous acute myocardial infarction and/or unstable angina pectoris. Am J Cardiol 1995;76:474-9 [7653447]

PACT, 2004:

Thompson PL, Meredith I, Amerena J, Campbell TJ, Sloman JG, Harris PJ Effect of pravastatin compared with placebo initiated within 24 hours of onset of acute myocardial infarction or unstable angina: the Pravastatin in Acute Coronary Treatment (PACT) trial. Am Heart J 2004;148:e2 [15215811]

4S, 1994:

, Randomised trial of cholesterol lowering in 4444 patients with coronary heart disease: the Scandinavian Simvastatin Survival Study (4S) Lancet 1994; 344:1383-9 [7968073]

6 statins high dose

Trial	Treatments	Patients	Trials design and methods
atorvastatin high dose vs atorvastatin			
TNT , 2005 [NCT00327691] n=4995/5006 follow-up: 4.9 years	80 mg of atorvastatin daily versus 10 mg of atorvastatin daily	Chronic coronary artery disease LDL cholesterol <3.4 mmol/L	Parallel groups double blind 14 countries
atorvastatin high dose vs lovastatin			
Vascular basis , 2005 n=197/103 follow-up: 1 year	atorvastatin (80 mg) with or without vitamin C and E versus low dose lovastatin (5 mg)	Chronic coronary artery disease	Parallel groups double blind
atorvastatin high dose vs pravastatin			
REVERSAL , 2004 n=327/327 follow-up: 1.5 years	atorvastatin 80 mg daily versus Pravastatin(40 mg)	Chronic coronary artery disease	Parallel groups double blind
SAGE , 2007 n=446/445 follow-up: 1 years	atorvastatin 80 mg daily versus pravastatin(40 mg)	Chronic coronary artery disease	Parallel groups double blind
atorvastatin high dose vs simvastatin			

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Trial	Treatments	Patients	Trials design and methods
IDEAL , 2005 [NCT00159835] n=4439/4449 follow-up: 4.8 years	atorvastatin 80mg daily versus simvastatine 20mg/j	Men and women aged 80 years or younger with a history of a definite myocardial infarction and who qualified for statin therapy according to national guidelines	Parallel groups open Denmark, Finland, Iceland, Netherlands, Norway, Sweden

References

TNT, 2005:

LaRosa JC, Grundy SM, Waters DD, Shear C, Barter P, Fruchart JC, Gotto AM, Greten H, Kastelein JJ, Shepherd J, Wenger NK Intensive lipid lowering with atorvastatin in patients with stable coronary disease. N Engl J Med 2005 Apr 7;352:1425-35 [15755765]

Wenger NK, Lewis SJ, Welty FK, Herrington DM, Bittner V Beneficial effects of aggressive low-density lipoprotein cholesterol lowering in women with stable coronary heart disease in the Treating to New Targets (TNT) study. Heart 2008;94:434-9 [18070940]

Johnson C, Waters DD, DeMicco DA, Breazna A, Bittner V, Greten H, Grundy SM, LaRosa JC Comparison of effectiveness of atorvastatin 10 mg versus 80 mg in reducing major cardiovascular events and repeat revascularization in patients with previous percutaneous coronary intervention (post hoc analysis of the Treating to New Targets [TNT] Study). Am J Cardiol 2008;102:1312-7 [18993147]

Waters DD, Guyton JR, Herrington DM, McGowan MP, Wenger NK, Shear C Treating to New Targets (TNT) Study: does lowering low-density lipoprotein cholesterol levels below currently recommended guidelines yield incremental clinical benefit? Am J Cardiol 2004;93:154-8 [14715339]

Vascular basis, 2005:

Stone PH, Lloyd-Jones DM, Kinlay S, Frei B, Carlson W, Rubenstein J, Andrews TC, Johnstone M, Sopko G, Cole H, Orav J, Selwyn AP, Creager MA Effect of intensive lipid lowering, with or without antioxidant vitamins, compared with moderate lipid lowering on myocardial ischemia in patients with stable coronary artery disease: the Vascular Basis for the Treatment of Myocardial Ischemia Study. Circulation 2005;111:1747-55 [15809368]

REVERSAL, 2004:

Nissen SE, Tuzcu EM, Schoenhagen P, Brown BG, Ganz P, Vogel RA, Crowe T, Howard G, Cooper CJ, Brodie B, Grines CL, DeMaria AN Effect of intensive compared with moderate lipid-lowering therapy on progression of coronary atherosclerosis: a randomized controlled trial. JAMA 2004;291:1071-80 [14996776]

SAGE, 2007:

Deedwania P, Stone PH, Bairey Merz CN, Cosin-Aguilar J, Koylan N, Luo D, Ouyang P, Piotrowicz R, Schenck-Gustafsson K, Sellier P, Stein JH, Thompson PL, Tzivoni D Effects of intensive versus moderate lipid-lowering therapy on myocardial ischemia in older patients with coronary heart disease: results of the Study Assessing Goals in the Elderly (SAGE). Circulation 2007;115:700-7 [17283260]

IDEAL, 2005:

Pedersen TR, Faergeman O, Kastelein JJ, Olsson AG, Tikkanen MJ, Holme I, Larsen ML, Bendiksen FS, Lindahl C, Szarek M, Tsai J High-dose atorvastatin vs usual-dose simvastatin for secondary prevention after myocardial infarction: the IDEAL study: a randomized controlled trial. JAMA 2005 Nov 16;294:2437-45 [16287954]

Pedersen TR, Cater NB, Faergeman O, Kastelein JJ, Olsson AG, Tikkanen MJ, Holme I, Larsen ML, Lindahl C, Szarek M Comparison of atorvastatin 80 mg/day versus simvastatin 20 to 40 mg/day on frequency of cardiovascular events late (five years) after acute myocardial infarction (from the Incremental Decrease in End Points through Aggressive Lipid Lowering [IDEAL] trial). Am J Cardiol 2010;106:354-9 [20643245] 10.1016/j.amjcard.2010.03.033

7 About TrialResults-center.org

TrialResults-center is an innovative knowledge database that collects the results of RCTs and provides dynamic interactive systematic reviews and meta-analysis in the field of all major heart and vessels diseases.

The TrialResults-center database provides a unique view of the treatment efficacy based on all data provided directly from clinical trial results, offering a valuable alternative to personal bibliographic search, published meta-analysis, etc. Furthermore, it would allow comparing easily the various concurrent therapeutic for the same clinical condition.

Rigorous meta-analysis method is used to populate TrialResults-center: widespread search of published and non published trials, study selection using pre-specified criteria, data extraction using standard form.

TrialResults-center is continually updated on a weekly basis. We continually search all new results (whatever their publication channel) and these news results are immediately added to the database with a maximum of 1 week.

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