

Clinical trials of anti hypertensive agents for diabetes type 2 in patients with hypertension

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1 angiotensin receptor blocker

Trial	Treatments	Patients	Trials design and methods
irbesartan vs placebo			
IDNT (irbesartan vs pbo) , 2001 n=579/569 follow-up: 2.6 years	Irbesartan 300 mg daily versus placebo	hypertensive patients with nephropathy due to type 2 diabetes	Parallel groups double blind Worldwide
IPDM (150mg) , 2001 n=195/201 follow-up: 2 years	irbesartan 150 mg daily versus placebo	hypertensive patients with type 2 diabetes and microalbuminuria	Parallel groups double-blind Worldwide
irbesartan vs amlodipine			
IDNT (irbesartan vs amlodipine) , 2001 n=579/567 follow-up: 2.6 years	Irbesartan 300 mg daily versus amlodipine 10 mg daily	hypertensive patients with nephropathy due to type 2 diabetes	Parallel groups double blind Worldwide
valsartan vs amlodipine			
NAGOYA HEART , 2011 <i>unpublished</i> [NCT00129233] n=575/575 follow-up: 3.2 y median	blood-pressure-lowering therapy based on valsartan; blood-pressure goal of <130/80 mm Hg versus blood-pressure-lowering therapy based on amlodipine; blood-pressure goal of <130/80 mm Hg	patients with hypertension with type 2 diabetes or impaired glucose tolerance	Parallel groups open Japan
losartan vs atenolol			
LIFE (diabetic subgroup) , 2002 n=586/609 follow-up: 4.7 years	losartan 50mg daily at step 1 versus atenolol 50mg daily at step 1	patients with diabetes (subgroup) , hypertension, and signs of left-ventricular hypertrophy on electrocardiograms	Parallel groups double-blind USA, UK, Nordic countries

References

IDNT (irbesartan vs pbo), 2001:

Lewis EJ, Hunsicker LG, Clarke WR, Berl T, Pohl MA, Lewis JB, Ritz E, Atkins RC, Rohde R, Raz I Renoprotective effect of the angiotensin-receptor antagonist irbesartan in patients with nephropathy due to type 2 diabetes. N Engl J Med 2001;345:851-60 [[11565517](#)]

IPDM (150mg), 2001:

Parving HH, Lehnert H, Brchner-Mortensen J, Gomis R, Andersen S, Arner P The effect of irbesartan on the development of diabetic nephropathy in patients with type 2 diabetes.

N Engl J Med 2001;345:870-8 [11565519]

IDNT (irbesartan vs amlodipine), 2001:

Lewis EJ, Hunsicker LG, Clarke WR, Berl T, Pohl MA, Lewis JB, Ritz E, Atkins RC, Rohde R, Raz I Renoprotective effect of the angiotensin-receptor antagonist irbesartan in patients with nephropathy due to type 2 diabetes. N Engl J Med 2001;345:851-60 [11565517]

NAGOYA HEART, 2011:

Matsushita K, Muramatsu T, Kondo T, Maeda K, Shintani S, Murohara T Rationale and design of the NAGOYA HEART Study: comparison between valsartan and amlodipine regarding morbidity and mortality in patients with hypertension and glucose intolerance. J Cardiol 2010;56:111-7 [20409690] 10.1016/j.jjcc.2010.03.004

LIFE (diabetic subgroup), 2002:

Lindholm LH, Ibsen H, Dahlf B, Devereux RB, Beevers G, de Faire U, Fyhrquist F, Julius S, Kjeldsen SE, Kristiansson K, Lederballe-Pedersen O, Nieminen MS, Omvik P, Oparil S, Wedel H, Aurup P, Edelman J, Snapinn S Cardiovascular morbidity and mortality in patients with diabetes in the Losartan Intervention For Endpoint reduction in hypertension study (LIFE): a randomised trial against atenolol. Lancet 2002;359:1004-10 [11937179] 10.1016/S0140-6736(02)08090-X

Dahlf B, Devereux RB, Kjeldsen SE, Julius S, Beevers G, de Faire U, Fyhrquist F, Ibsen H, Kristiansson K, Lederballe-Pedersen O, Lindholm LH, Nieminen MS, Omvik P, Oparil S, Wedel H Cardiovascular morbidity and mortality in the Losartan Intervention For Endpoint reduction in hypertension study (LIFE): a randomised trial against atenolol. Lancet 2002;359:995-1003 [11937178] 10.1016/S0140-6736(02)08089-3

2 angiotensin-converting enzyme inhibitors

Trial	Treatments	Patients	Trials design and methods
captopril or atenolol vs control			
UKPDS 38 , 1998 n=758/390 follow-up: 8.4y (median)	tight control of blood pressure aiming at a BP <150/85 (with the use of captopril or atenolol as main treatment, other treatment were added if the control criteria were not met) versus less tight control aiming at a blood pressure of <180/105 (avoiding treatment with ACE inhibitors or beta-blockers)	hypertensive patients with type 2 diabetes	Parallel groups open UK
ACE inhibitors vs placebo			
HOPE (diabetic subgroup) , 2000 n=1808/1759 follow-up: 4.5 years	ramipril 10 mg once per day orally versus placebo	patients with diabetes (sub group), aged 55 years or older, who had a previous cardiovascular event or at least one other cardiovascular risk factor, no clinical proteinuria, heart failure, or low ejection fraction	Factorial plan double-blind North, South america, Europe
captopril vs atenolol			
UKPDS 39 , 1998 n=400/358 follow-up: ND	captopril 25 mg/d aiming at a BP <150/85 versus atenolol 50mg/d aiming at a BP <150/85	hypertensive patients with type 2 diabetes	Parallel groups open UK
ACE inhibitor vs calcium-channel blocker			

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Trial	Treatments	Patients	Trials design and methods
STOP-2 (ACEI vs CCB) (diabetic subgroup) , 2000 n=235/231 follow-up: 5.03y	ACE inhibitor versus calcium antagonists	diabetic (subgroup) elderly patients aged 70-84 years	open with blind assessment Sweden
lisinopril vs chlorthalidone			
ALLHAT (lisi vs chlor, diabetic subgroup) , 2002 n=2431/4498 follow-up: 4.9 y	lisinopril 10 to 40 mg/d versus chlorthalidone 12.5 to 25 mg/d	diabetic (subgroup) participants aged 55 years or older with hypertension	Parallel groups double-blind
captopril vs diuretic and/or beta-blockers			
CAPP (diabetic subgroup) , 1999 n=309/263 follow-up: 6.1 year	Captopril initial dose of 50 mg daily given in one or two doses versus thiazide diuretic or beta-blocker	Patients aged 25-66 years with a measured diastolic blood pressure of 100 mm Hg or more on two occasions; subgroup of diabetic patients	Parallel groups open with blinded assessment Sweden, Finland
ACE inhibitor vs diuretic or beta-blocker			
STOP-2 (ACEI, diabetic subgroup) , 2000 n=235/253 follow-up: 5.03y	ACE inhibitor versus conventional treatment (diuretic or beta-blocker)	diabetic (subgroup) elderly patients aged 70-84 years with hypertension	Parallel groups open with blind assessment Sweden

References

UKPDS 38, 1998:

Efficacy of atenolol and captopril in reducing risk of macrovascular and microvascular complications in type 2 diabetes: UKPDS 39. UK Prospective Diabetes Study Group. *BMJ* 1998;317:713-20 [[9732338](#)]

Tight blood pressure control and risk of macrovascular and microvascular complications in type 2 diabetes: UKPDS 38. UK Prospective Diabetes Study Group. *BMJ* 1998;317:703-13 [[9732337](#)]

HOPE (diabetic subgroup), 2000:

Effects of ramipril on cardiovascular and microvascular outcomes in people with diabetes mellitus: results of the HOPE study and MICRO-HOPE substudy. Heart Outcomes Prevention Evaluation Study Investigators. *Lancet* 2000;355:253-9 [[10675071](#)]

Yusuf S, Sleight P, Pogue J, Bosch J, Davies R, Dagenais G Effects of an angiotensin-converting-enzyme inhibitor, ramipril, on cardiovascular events in high-risk patients. The Heart Outcomes Prevention Evaluation Study Investigators. *N Engl J Med* 2000;342:145-53 [[10639539](#)]

UKPDS 39, 1998:

Tight blood pressure control and risk of macrovascular and microvascular complications in type 2 diabetes: UKPDS 38. UK Prospective Diabetes Study Group. *BMJ* 1998;317:703-13 [[9732337](#)]

Efficacy of atenolol and captopril in reducing risk of macrovascular and microvascular complications in type 2 diabetes: UKPDS 39. UK Prospective Diabetes Study Group. *BMJ* 1998;317:713-20 [[9732338](#)]

STOP-2 (ACEI vs CCB) (diabetic subgroup), 2000:

Lindholm LH, Hansson L, Ekblom T, Dahlf B, Lanke J, Linjer E, Scherstn B, Wester PO, Hedner T, de Faire U Comparison of antihypertensive treatments in preventing cardiovascular events in elderly diabetic patients: results from the Swedish Trial in Old Patients with Hypertension-2. STOP Hypertension-2 Study Group. *J Hypertens* 2000 Nov;18:1671-5 [[11081782](#)]

Hansson L, Lindholm LH, Ekblom T, Dahlf B, Lanke J, Scherstn B, Wester PO, Hedner T, de Faire U Randomised trial of old and new antihypertensive drugs in elderly patients: cardiovascular mortality and morbidity the Swedish Trial in Old Patients with Hypertension-2 study. *Lancet* 1999;354:1751-6 [[10577635](#)]

ALLHAT (lisi vs chlor, diabetic subgroup), 2002:

Major outcomes in high-risk hypertensive patients randomized to angiotensin-converting enzyme inhibitor or calcium channel blocker vs diuretic: The Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial (ALLHAT). *JAMA* 2002;288:2981-97 [12479763]

Whelton PK, Barzilay J, Cushman WC, Davis BR, Iiamathi E, Kostis JB, Leenen FH, Louis GT, Margolis KL, Mathis DE, Moloo J, Nwachuku C, Panebianco D, Parish DC, Pressel S, Simmons DL, Thadani U Clinical outcomes in antihypertensive treatment of type 2 diabetes, impaired fasting glucose concentration, and normoglycemia: Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial (ALLHAT). *Arch Intern Med* 2005;165:1401-9 [15983290] [10.1001/archinte.165.12.1401](https://doi.org/10.1001/archinte.165.12.1401)

CAPP (diabetic subgroup), 1999:

Hansson L, Lindholm LH, Niskanen L, Lanke J, Hedner T, Niklason A, Luomanmki K, Dahlf B, de Faire U, Mrlin C, Karlberg BE, Wester PO, Bjrcck JE Effect of angiotensin-converting-enzyme inhibition compared with conventional therapy on cardiovascular morbidity and mortality in hypertension: the Captopril Prevention Project (CAPPP) randomised trial. *Lancet* 1999;353:611-6 [10030325]

Niklason A, Hedner T, Niskanen L, Lanke J Development of diabetes is retarded by ACE inhibition in hypertensive patients—a subanalysis of the Captopril Prevention Project (CAPPP). *J Hypertens* 2004;22:645-52 [15076172]

Niskanen L, Hedner T, Hansson L, Lanke J, Niklason A Reduced cardiovascular morbidity and mortality in hypertensive diabetic patients on first-line therapy with an ACE inhibitor compared with a diuretic/beta-blocker-based treatment regimen: a subanalysis of the Captopril Prevention Project. *Diabetes Care* 2001;24:2091-6 [11723089]

STOP-2 (ACEI, diabetic subgroup), 2000:

Lindholm LH, Hansson L, Ekblom T, Dahlf B, Lanke J, Linjer E, Scherstn B, Wester PO, Hedner T, de Faire U Comparison of antihypertensive treatments in preventing cardiovascular events in elderly diabetic patients: results from the Swedish Trial in Old Patients with Hypertension-2. STOP Hypertension-2 Study Group. *J Hypertens* 2000;18:1671-5 [11081782]

Hansson L, Lindholm LH, Ekblom T, Dahlf B, Lanke J, Scherstn B, Wester PO, Hedner T, de Faire U Randomised trial of old and new antihypertensive drugs in elderly patients: cardiovascular mortality and morbidity the Swedish Trial in Old Patients with Hypertension-2 study. *Lancet* 1999;354:1751-6 [10577635]

Hansson L, Hedner T, Dahlf B Prospective randomized open blinded end-point (PROBE) study. A novel design for intervention trials. Prospective Randomized Open Blinded End-Point. *Blood Press* 1992;1:113-9 [1366259]

3 calcium-channel blockers

Trial	Treatments	Patients	Trials design and methods
amlodipine vs placebo			
IDNT (amlodipine vs PBO) , 2001 n=567/569 follow-up: 2.6 years	Amlodipine 10 mg daily versus placebo	hypertensive patients with nephropathy due to type 2 diabetes	Parallel groups double-blind Worldwide
nitrendipine vs placebo			
Syst-Eur (diabetic subgroup) , 1999 n=252/240 follow-up: 2 years	Calcium-channel blocker versus placebo	subgroup of diabetic patients, age, >=60 years) with systolic blood pressure of 160 to 219 mm Hg and diastolic pressure below 95 mm Hg	Parallel groups double blind
benazepril + amlodipine vs benazepril + hydrochlorothiazide			
ACCOMPLISH (diabetic subgroup) , 2010 [NCT00170950] n=1432/1410 follow-up: 36 months	benazepril, combined with amlodipine versus benazepril, combined with hydrochlorothiazide	patients with diabetes (subgroup) and hypertension at high risk of cardiovascular and related events	Parallel groups double-blind US, Norway, Denmark, Finland
amlodipine vs chlorthalidone			

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Trial	Treatments	Patients	Trials design and methods
ALLHAT (amlodipine vs chlor, diabetic subgroup) , 2002 n=2664/4498 follow-up: 4.9 y	amlodipine versus chlorthalidone	diabetic (subgroup) participants aged 55 years or older with hypertension	Parallel groups double-blind
nifedipine vs coamilofide			
INSIGHT (diabetic subgroup) , 2000 n=649/653 follow-up: 4 y	Nifedipine GITS 30 mg daily versus co-amilofide hydrochlorothiazide 25 mg plus amilofide 2.5 mg	diabetic (subgroup) patients aged 55-80 years with hypertension (blood pressure \geq 150/95 mm Hg, or \geq 160 mmHg systolic)	Parallel groups double-blind Europe, Israel
diltiazem vs diuretic and/or beta-blocker			
NORDIL (diabetic subgroup) , 2000 n=351/376 follow-up: 4.5 y	Diltiazem 180/360 mg diltiazem daily at step one versus thiazide diuretic or a beta-blocker at step one	diabetic patients (subgroup), aged 50-74 years who had diastolic blood pressure of 100 mm Hg or more	Parallel groups open Norway, Sweden
calcium-channel blocker vs diuretic or beta-blocker			
STOP-2 (CCB, diabetic subgroup) , 2000 n=231/253 follow-up: 5.03y	Calcium-channel blocker versus diuretic or beta-blocker	diabetic (subgroup) elderly patients aged 70-84 years	Parallel groups open with blind assessment Sweden
nisoldipine vs enalapril			
ABCD (hypertension) , 1998 n=235/235 follow-up: 5 y	nisoldipine (long acting) versus enalapril	patients with non-insulin-dependent diabetes and hypertension	Factorial plan Double blind USA
amlodipine vs fosinopril			
FACET , 1997 n=191/189 follow-up: 3.5 y	amlodipine (long acting) 10 mg daily versus fosinopril 20 mg daily	hypertensive patients with NIDDM	Parallel groups open Italy

References

IDNT (amlodipine vs PBO), 2001:

Lewis EJ, Hunsicker LG, Clarke WR, Berl T, Pohl MA, Lewis JB, Ritz E, Atkins RC, Rohde R, Raz I Renoprotective effect of the angiotensin-receptor antagonist irbesartan in patients with nephropathy due to type 2 diabetes. *N Engl J Med* 2001;345:851-60 [[11565517](#)]

Hunsicker LG, Atkins RC, Lewis JB, Braden G, de Zeeuw D, de Zeeuw P, Locatelli F, Wiegmann TB, Lewis EJ Impact of irbesartan, blood pressure control, and proteinuria on renal outcomes in the Irbesartan Diabetic Nephropathy Trial. *Kidney Int Suppl* 2004;:S99-101 [[15485429](#)] [10.1111/j.1523-1755.2004.09223.x](#)

POHL, MA, CORDONNIER, DJ, SPITALOWITZ, S, et al, FOR THE COLLABORATIVE STUDY GROUP Impact of angiotensin receptor blockade with irbesartan on renal function at different systolic blood pressure (SBP) levels in type 2 diabetic nephropathy. *J Am Soc Nephrol* 2002 13: 650A,

Pohl MA, Blumenthal S, Cordonnier DJ, De Alvaro F, Deferrari G, Eisner G, Esmatjes E, Gilbert RE, Hunsicker LG, de Faria JB, Mangili R, Moore J Jr, Reisin E, Ritz E, Scherthaner G, Spitalowitz S, Tindall H, Rodby RA, Lewis EJ Independent and additive impact of blood pressure control and angiotensin II receptor blockade on renal outcomes in the irbesartan diabetic nephropathy trial: clinical implications and limitations. *J Am Soc Nephrol* 2005;16:3027-37 [[16120823](#)] [10.1681/ASN.2004110919](#)

Syst-Eur (diabetic subgroup), 1999:

Tuomilehto J, Rastenyte D, Birkenhger WH, Thijs L, Antikainen R, Bulpitt CJ, Fletcher AE, Forette F, Goldhaber A, Palatini P, Sarti C, Fagard R Effects of calcium-channel blockade in older patients with diabetes and systolic hypertension. Systolic Hypertension in Europe Trial Investigators. *N Engl J Med* 1999;340:677-84 [[10053176](#)]

ACCOMPLISH (diabetic subgroup), 2010:

Weber MA, Bakris GL, Jamerson K, Weir M, Kjeldsen SE, Devereux RB, Velazquez EJ, Dahlf B, Kelly RY, Hua TA, Hester A, Pitt B Cardiovascular events during differing hypertension therapies in patients with diabetes. *J Am Coll Cardiol* 2010;56:77-85 [[20620720](#)] [10.1016/j.jacc.2010.02.046](#)

Jamerson K, Weber MA, Bakris GL, Dahlf B, Pitt B, Shi V, Hester A, Gupte J, Gatlin M, Velazquez EJ Benazepril plus amlodipine or hydrochlorothiazide for hypertension in high-risk patients. *N Engl J Med* 2008;359:2417-28 [[19052124](#)] [10.1056/NEJMoa0806182](#)

ALLHAT (amlodipine vs chlor, diabetic subgroup), 2002:

Major outcomes in high-risk hypertensive patients randomized to angiotensin-converting enzyme inhibitor or calcium channel blocker vs diuretic: The Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial (ALLHAT). *JAMA* 2002;288:2981-97 [[12479763](#)]

Berecek KH, Farag A, Bahtiyar G, Rothman J, McFarlane SI The Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack (ALLHAT) Trial: focus on the diabetic patient. *Curr Hypertens Rep* 2004;6:212-4 [[15128474](#)]

Whelton PK, Barzilay J, Cushman WC, Davis BR, Iamathi E, Kostis JB, Leenen FH, Louis GT, Margolis KL, Mathis DE, Moloo J, Nwachuku C, Panebianco D, Parish DC, Pressel S, Simmons DL, Thadani U Clinical outcomes in antihypertensive treatment of type 2 diabetes, impaired fasting glucose concentration, and normoglycemia: Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial (ALLHAT). *Arch Intern Med* 2005;165:1401-9 [[15983290](#)] [10.1001/archinte.165.12.1401](#)

INSIGHT (diabetic subgroup), 2000:

Brown MJ, Palmer CR, Castaigne A, de Leeuw PW, Mancia G, Rosenthal T, Ruilope LM Morbidity and mortality in patients randomised to double-blind treatment with a long-acting calcium-channel blocker or diuretic in the International Nifedipine GITS study: Intervention as a Goal in Hypertension Treatment (INSIGHT). *Lancet* 2000;356:366-72 [[10972368](#)] [10.1016/S0140-6736\(00\)02527-7](#)

Mancia G, Brown M, Castaigne A, de Leeuw P, Palmer CR, Rosenthal T, Wagener G, Ruilope LM Outcomes with nifedipine GITS or Co-amlozide in hypertensive diabetics and nondiabetics in Intervention as a Goal in Hypertension (INSIGHT). *Hypertension* 2003;41:431-6 [[12623939](#)] [10.1161/01.HYP.0000057420.27692.AD](#)

NORDIL (diabetic subgroup), 2000:

Hansson L, Hedner T, Lund-Johansen P, Kjeldsen SE, Lindholm LH, Syvertsen JO, Lanke J, de Faire U, Dahlf B, Karlberg BE Randomised trial of effects of calcium antagonists compared with diuretics and beta-blockers on cardiovascular morbidity and mortality in hypertension: the Nordic Diltiazem (NORDIL) study. *Lancet* 2000;356:359-65 [[10972367](#)]

Kjeldsen SE, Hedner T, Syvertsen JO, Lund-Johansen P, Hansson L, Lanke J, Lindholm LH, De Faire U, Dahlf B, Karlberg BE Influence of age, sex and blood pressure on the principal endpoints of the Nordic Diltiazem (NORDIL) Study. *J Hypertens* 2002 Jun;20:1231-7 [[12023696](#)] [10.1097/00004872-200206000-00038](#)

Kjeldsen SE, Hedner T, Syvertsen JO, Lund-Johansen P, Hansson L Comparison of home and office blood pressure in treated hypertensives in the Nordic Diltiazem (NORDIL) Study. *Blood Press* 2002;11:371-6 [[12523681](#)]

Thijs L, Staessen JA, Wang J, Fagard R Subgroup analysis of the NORDIL trial. *J Hypertens* 2002;20:1085-7 [[12023676](#)]

STOP-2 (CCB, diabetic subgroup), 2000:

Lindholm LH, Hansson L, Ekblom T, Dahlf B, Lanke J, Linjer E, Scherstn B, Wester PO, Hedner T, de Faire U Comparison of antihypertensive treatments in preventing cardiovascular events in elderly diabetic patients: results from the Swedish Trial in Old Patients with Hypertension-2. STOP Hypertension-2 Study Group. *J Hypertens* 2000;18:1671-5 [[11081782](#)]

Hansson L, Lindholm LH, Ekblom T, Dahlf B, Lanke J, Scherstn B, Wester PO, Hedner T, de Faire U Randomised trial of old and new antihypertensive drugs in elderly patients: cardiovascular mortality and morbidity the Swedish Trial in Old Patients with Hypertension-2 study. *Lancet* 1999;354:1751-6 [[10577635](#)]

ABCD (hypertension), 1998:

Estacio RO, Jeffers BW, Hiatt WR, Biggerstaff SL, Gifford N, Schrier RW The effect of nisoldipine as compared with enalapril on cardiovascular outcomes in patients with non-insulin-dependent diabetes and hypertension. *N Engl J Med* 1998;338:645-52 [[9486993](#)]

Schrier RW, Estacio RO, Esler A, Mehler P Effects of aggressive blood pressure control in normotensive type 2 diabetic patients on albuminuria, retinopathy and strokes. *Kidney Int* 2002;61:1086-97 [[11849464](#)] [10.1046/j.1523-1755.2002.00213.x](#)

FACET, 1997:

Tatti et al. *Circulation* 1997; 96:I-764 (abstr) [0]

Tatti P, Pahor M, Byington RP, Di Mauro P, Guarisco R, Strollo G, Strollo F Outcome results of the Fosinopril Versus Amlodipine Cardiovascular Events Randomized Trial (FACET) in patients with hypertension and NIDDM. *Diabetes Care* 1998 Apr;21:597-603 [[9571349](#)]

4 diuretics

Trial	Treatments	Patients	Trials design and methods
chlorthalidone vs placebo			
SHEP (diabetic subgroup) , 1996 n=283/300 follow-up: 5 year	low dose of chlorthalidone (12.5-25.0 mg/d) with a step-up to atenolol (25.0-50.0 mg/d) or reserpine (0.05-0.10 mg/d) if needed versus placebo	men and women aged 60 years and older , non-insulin-treated diabetic (sub group) patients with isolated systolic hypertension (systolic BP \geq 160 mm Hg; diastolic BP, $<$ 90 mm Hg)	Parallel groups double-blind

References

SHEP (diabetic subgroup), 1996:

Curb JD, Pressel SL, Cutler JA, Savage PJ, Applegate WB, Black H, Camel G, Davis BR, Frost PH, Gonzalez N, Guthrie G, Oberman A, Rutan GH, Stamler J Effect of diuretic-based antihypertensive treatment on cardiovascular disease risk in older diabetic patients with isolated systolic hypertension. Systolic Hypertension in the Elderly Program Cooperative Research Group. *JAMA* 1996;276:1886-92 [[8968014](#)]

5 intensive treatment

Trial	Treatments	Patients	Trials design and methods
intensive vs usual			
ACCORD (blood pressure) , 2010 [NCT00000620] n=2363/2371 follow-up: 4.7 y	intensive blood-pressure control, targeting a systolic pressure of less than 120 mm Hg versus standard blood-pressure control	high-risk patients with type 2 diabetes, high HbA1c concentrations ($>$ 7.5%), and cardiovascular disease (or \geq 2 cardiovascular risk factors)	Factorial plan open United States, Canada

References

ACCORD (blood pressure), 2010:

Effects of Medical Therapies on Retinopathy Progression in Type 2 Diabetes. *N Engl J Med* 2010 Jun 29;: [[20587587](#)] [10.1056/NEJMoa1001288](#)

Ismail-Beigi F, Craven T, Banerji MA, Basile J, Calles J, Cohen RM, Cuddihy R, Cushman WC, Genuth S, Grimm RH Jr, Hamilton BP, Hoogwerf B, Karl D, Katz L, Krikorian A, O'Connor P, Pop-Busui R, Schubart U, Simmons D, Taylor H, Thomas A, Weiss D, Hramiak I Effect of intensive treatment of hyperglycaemia on microvascular outcomes in type 2 diabetes: an analysis of the ACCORD randomised trial. *Lancet* 2010 Jun 29;: [[20594588](#)] [10.1016/S0140-6736\(10\)60576-4](#)

Chew EY, Ambrosius WT, Howard LT, Greven CM, Johnson S, Danis RP, Davis MD, Genuth S, Domanski M Rationale, design, and methods of the Action to Control Cardiovascular Risk in Diabetes Eye Study (ACCORD-EYE). *Am J Cardiol* 2007;99:103i-111i [[17599420](#)] [10.1016/j.amjcard.2007.03.028](#)

Gerstein HC, Miller ME, Byington RP, Goff DC Jr, Bigger JT, Buse JB, Cushman WC, Genuth S, Ismail-Beigi F, Grimm RH Jr, Probstfield JL, Simons-Morton DG, Friedewald

WT Effects of intensive glucose lowering in type 2 diabetes. N Engl J Med 2008;358:2545-59 [18539917] 10.1056/NEJMoa0802743

Cushman WC, Evans GW, Byington RP, Goff DC Jr, Grimm RH Jr, Cutler JA, Simons-Morton DG, Basile JN, Corson MA, Probstfield JL, Katz L, Peterson KA, Friedewald WT, Buse JB, Bigger JT, Gerstein HC, Ismail-Beigi F Effects of intensive blood-pressure control in type 2 diabetes mellitus. N Engl J Med 2010;362:1575-85 [20228401] 10.1056/NEJMoa1001286

6 Treatment blood pressure target

Trial	Treatments	Patients	Trials design and methods
more intensive blood pressure lowering strategie vs less intensive blood pressure lowering strategie			
ABCD target (H) , 2000 n=237/233 follow-up: 5 year	intensive treatment with a diastolic blood pressure goal of 75 mmHg versus moderate treatment with a diastolic blood pressure goal of 80-89 mmHg	diabetes patients with DBP \geq 90 mmHg	Parallel groups open
ABCD target (N) , 2002 n=237/243 follow-up:	intensive treatment (diastolic blood pressure decrease of 10 mmHg below baseline DBP) versus moderate treatment (diastolic blood pressure goal of 80-89 mmHg)	diabetes patients with diastolic blood pressure between 80 and 89mmHg	Parallel groups open

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References

ABCD target (H) , 2000:

Estacio RO, Jeffers BW, Gifford N, Schrier RW Effect of blood pressure control on diabetic microvascular complications in patients with hypertension and type 2 diabetes. Diabetes Care 2000;23 Suppl 2:B54-64 [10860192]

ABCD target (N) , 2002:

Schrier RW, Estacio RO, Esler A, Mehler P Effects of aggressive blood pressure control in normotensive type 2 diabetic patients on albuminuria, retinopathy and strokes. Kidney Int 2002;61:1086-97 [11849464] 10.1046/j.1523-1755.2002.00213.x

7 About TrialResults-center.org

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