

# Clinical trials of diltiazem

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## 1 acute myocardial infarction

Trial	Treatments	Patients	Trials design and methods
<b>diltiazem vs</b>			
<a href="#">Machecourt , 1986</a> n=38/37 follow-up: 21 days	-	-	Parallel groups single blind
<b>diltiazem vs placebo</b>			
<a href="#">Gibson , 1986</a> n=287/289 follow-up: 14 days	Diltiazem 90mgx4 versus placebo	-	Parallel groups double blind
<a href="#">Zannad , 1988</a> n=17/17 follow-up:	Diltiazem 10-20mg/h IV, 4x60mg orrally versus placebo	-	Parallel groups double blind
<a href="#">MDPIT , 1988</a> n=1234/1232 follow-up: 25 months (at least 12 months)	Diltiazem 60mgx4 versus placebo	Patient aged 25 to 75 years, admitted to coronary care units with a documented acute myocardial infarction	Parallel groups Double blind US, Canada

More details and results :

- calcium channel blockers for acute myocardial infarction in acute short term and post MI studies at <http://www.trialresultscenter.org/go-Q141>
- calcium channel blockers for acute myocardial infarction in acute (short term) treatment at <http://www.trialresultscenter.org/go-Q142>
- calcium channel blockers for acute myocardial infarction in long term studies at <http://www.trialresultscenter.org/go-Q143>

## References

**Machecourt, 1986:**

**Gibson, 1986:**

Gibson RS, Boden WE, Theroux P, Strauss HD, Pratt CM, Gheorghide M, Capone RJ, Crawford MH, Schlant RC, Kleiger RE Diltiazem and reinfarction in patients with non-Q-wave myocardial infarction. Results of a double-blind, randomized, multicenter trial. N Engl J Med 1986;315:423-9 [[3526151](#)]

### Zannad, 1988:

Zannad F, Amor M, Karcher G, Maurin P, Ethevenot G, Sebag C, Bertrand A, Pernot C, Gilgenkrantz JM Effect of diltiazem on myocardial infarct size estimated by enzyme release, serial thallium-201 single-photon emission computed tomography and radionuclide angiography. Am J Cardiol 1988;61:1172-7 [3287881]

### MDPIT, 1988:

The effect of diltiazem on mortality and reinfarction after myocardial infarction. The Multicenter Diltiazem Postinfarction Trial Research Group N Engl J Med 1988;319:385-92 [2899840]

Bigger JT Jr, Coromilas J, Rolnitzky LM, Fleiss JL, Kleiger RE Effect of diltiazem on cardiac rate and rhythm after myocardial infarction. Multicenter Diltiazem Postinfarction Trial Investigators Am J Cardiol 1990;65:539-46 [2178379]

Moss AJ, Oakes D, Rubison M, McDermott M, Carleen E, Eberly S, Brown M Effects of diltiazem on long-term outcome after acute myocardial infarction in patients with and without a history of systemic hypertension. The Multicenter Diltiazem Postinfarction Trial Research Group Am J Cardiol 1991;68:429-33 [1872266]

Gibson RS, Hansen JF, Messerli F, Schechtman KB, Boden WE Long-term effects of diltiazem and verapamil on mortality and cardiac events in non-Q-wave acute myocardial infarction without pulmonary congestion: post hoc subset analysis of the multicenter diltiazem postinfarction trial and the second danish verapamil infarction trial studies Am J Cardiol 2000;86:275-9 [10922432]

## 2 post myocardial infarction

Trial	Treatments	Patients	Trials design and methods
<b>diltiazem vs placebo</b>			
MDPIT, 1988 n=1234/1232 follow-up: 25 months (at least 12 months)	Diltiazem 60mgx4 versus placebo	Patient aged 25 to 75 years, admitted to coronary care units with a documented acute myocardial infarction	Parallel groups Double blind US, Canada

More details and results :

- calcium channel blockers for post myocardial infarction in all type of patients at <http://www.trialresultscenter.org/go-Q252>

## References

### MDPIT, 1988:

The effect of diltiazem on mortality and reinfarction after myocardial infarction. The Multicenter Diltiazem Postinfarction Trial Research Group N Engl J Med 1988;319:385-92 [2899840]

Bigger JT Jr, Coromilas J, Rolnitzky LM, Fleiss JL, Kleiger RE Effect of diltiazem on cardiac rate and rhythm after myocardial infarction. Multicenter Diltiazem Postinfarction Trial Investigators Am J Cardiol 1990;65:539-46 [2178379]

Moss AJ, Oakes D, Rubison M, McDermott M, Carleen E, Eberly S, Brown M Effects of diltiazem on long-term outcome after acute myocardial infarction in patients with and without a history of systemic hypertension. The Multicenter Diltiazem Postinfarction Trial Research Group Am J Cardiol 1991;68:429-33 [1872266]

Gibson RS, Hansen JF, Messerli F, Schechtman KB, Boden WE Long-term effects of diltiazem and verapamil on mortality and cardiac events in non-Q-wave acute myocardial infarction without pulmonary congestion: post hoc subset analysis of the multicenter diltiazem postinfarction trial and the second danish verapamil infarction trial studies Am J Cardiol 2000;86:275-9 [10922432]

### 3 hypertension

Trial	Treatments	Patients	Trials design and methods
<b>diltiazem vs diuretic and/or beta-blocker</b>			
<b>NORDIL (diabetic subgroup) , 2000</b> n=351/376 follow-up: 4.5 y	Diltiazem 180/360 mg 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
<b>diltiazem vs diuretic or beta-blocker</b>			
<b>NORDIL , 2000</b> n=5410/5471 follow-up: up to 5 years	diltiazem 180-360 daily versus beta-blocker (not specified) or diuretic (not specified)	hypertensive patients, aged 50-74 years	Parallel groups Open Norway, Sweden

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More details and results :

- anti hypertensive agents for hypertension in diabetic patients at <http://www.trialresultscenter.org/go-Q10>
- anti hypertensive agents for hypertension in all type of patient at <http://www.trialresultscenter.org/go-Q13>
- anti hypertensive agents for hypertension in uncomplicated hypertension at <http://www.trialresultscenter.org/go-Q685>

### References

#### **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]

## NORDIL, 2000:

Hansson L, Hedner T, Lund-Johansen P, Kjeldsen SE, Lindholm LH, Syvertsen JO, Lanke J, de Faire U, Dahlof 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 Jul 29;356:359-65 [10972367]

## 4 heart failure

Trial	Treatments	Patients	Trials design and methods
<b>Diltiazem vs placebo</b>			
DiDi, 1996 n=92/94 follow-up: 24 months	diltiazem 60mg three times daily versus placebo	idiopathic dilated cardiomyopathy and LVEF<0.50	Parallel groups Double blind germany
Liao, 1998 n=114/107 follow-up: 6 months	diltiazem 30mg twice daily versus control (vitamin B1 30mg twice daily)	patients with dilated cardiomyopathy	Parallel groups Simple aveugle China

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More details and results :

- calcium channel blockers for heart failure in all type of patients at <http://www.trialresultscenter.org/go-Q70>

## References

### DiDi, 1996:

Figulla HR, Gietzen F, Zeymer U, Raiber M, Hegselmann J, Soballa R, Hilgers R Diltiazem improves cardiac function and exercise capacity in patients with idiopathic dilated cardiomyopathy. Results of the Diltiazem in Dilated Cardiomyopathy Trial. Circulation 1996 Aug 1;94:346-52 [8759075]

### Liao, 1998:

Liao YH Interventional study of diltiazem in dilated cardiomyopathy: a report of multiple centre clinical trial in China. Chinese Cooperative Group of Diltiazem Intervention Trial in Dilated Cardiomyopathy. Int J Cardiol 1998 Mar 13;64:25-30 [9579813]

## 5 acute coronary syndrome

Trial	Treatments	Patients	Trials design and methods
<b>diltiazem vs placebo</b>			

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Trial	Treatments	Patients	Trials design and methods
Gbel (Dutch study) , 1995 n=129 follow-up: ND	diltiazem intravenously versus glyceryl trinitrate intravenously	patients with unstable angina	Parallel groups double blind
DRS , 1986 n=287/289 follow-up: ND	diltiazem 90 mg every six hours up to 14 days versus placebo	patients with non-Q-wave myocardial infarct, 24 to 72 hours after the onset of infarction	double blind

More details and results :

- calcium channel blockers for acute coronary syndrome in all type of patients at <http://www.trialresultscenter.org/go-Q222>

## References

### Gbel (Dutch study), 1995:

Gobel EJ, Hautvast RW, van Gilst WH, Spanjaard JN, Hillege HL, DeJongste MJ, Molhoek GP, Lie KI Randomised, double-blind trial of intravenous diltiazem versus glyceryl trinitrate for unstable angina pectoris. Lancet 1995;346:1653-7 [8551821]

### DRS, 1986:

Gibson RS, Boden WE, Theroux P, Strauss HD, Pratt CM, Gheorghide M, Capone RJ, Crawford MH, Schlant RC, Kleiger RE Diltiazem and reinfarction in patients with non-Q-wave myocardial infarction. Results of a double-blind, randomized, multicenter trial. N Engl J Med 1986;315:423-9 [3526151]

## 6 diabetes type 2

Trial	Treatments	Patients	Trials design and methods
<b>diltiazem vs diuretic and/or beta-blocker</b>			
NORDIL (diabetic subgroup) , 2000 n=351/376 follow-up: 4.5 y	Diltiazem 180360 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

More details and results :

- anti hypertensive agents for diabetes type 2 in patients with hypertension at <http://www.trialresultscenter.org/go-Q83>
- anti hypertensive agents for diabetes type 2 in patients with or without hypertension at <http://www.trialresultscenter.org/go-Q414>

## References

### 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]

## 7 percutaneous coronary intervention

Trial	Treatments	Patients	Trials design and methods
<b>diltiazem vs control</b>			
Corcos , 1985 n=46/46 follow-up: 3 months	-	-	open
<b>diltiazem vs placebo</b>			
OKeefe , 1991 n=61/59 follow-up: 12 months	diltiazem (240-360 mg/day) versus placebo	-	double blind
Unverdorben , 1996 n=84/86 follow-up: 4 months	diltiazem (180 mg/day) versus placebo	-	double blind

More details and results :

- restenosis prevention for percutaneous coronary intervention in all type of patients at <http://www.trialresultscenter.org/go-Q318>

## References

### Corcos, 1985:

Corcos T, David PR, Val PG, Renkin J, Dangoisse V, Rapold HG, Bourassa MG Failure of diltiazem to prevent restenosis after percutaneous transluminal coronary angioplasty. *Am Heart J* 1985;109:926-31 [3158187]

### OKeefe, 1991:

O'Keefe JH Jr, Giorgi LV, Hartzler GO, Good TH, Ligon RW, Webb DL, McCallister BD Effects of diltiazem on complications and restenosis after coronary angioplasty. Am J Cardiol 1991;67:373-6 [[1994661](#)]

**Unverdorben, 1996:**

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Entry terms: atenolol, propranolol