

# Clinical trials of verapamil

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## 1 acute myocardial infarction

Trial	Treatments	Patients	Trials design and methods
<b>verapamil vs control</b>			
<b>Bussman , 1984</b> n=29/25 follow-up: 2 days	Verapamil 5 to 10 mg/h IV versus no treatment	-	Parallel groups open
<b>verapamil vs placebo</b>			
<b>DAVIT I , 1984</b> n=1751/1747 follow-up: 6 months	verapamil 120mgx3 versus placebo	-	Parallel groups Double blind Danish
<b>Crea , 1985</b> n=8/9 follow-up: 10 days	verapamil 80mgx3 versus placebo	patients admitted to the coronary care unit with transmural acute myocardial infarction	Parallel groups single blind
<b>DAVIT II , 1990</b> n=878/897 follow-up: 16 months	verapamil 120mgx3 for 18 months versus placebo	patients <76years with diagnosis of acute MI	Parallel groups Double blind Danish
<b>CRIS , 1996</b> n=531/542 follow-up: 23.5 months	verapamil retard 360 mg daily versus placebo	patients admitted for acute myocardial infarction	Parallel groups Double blind Italy
<b>Danish study , 1984</b> n=1729/1718 follow-up: 12 months	verapamil 0.1mg/kg IV plus 3x120mg orally versus placebo	patients under 75 years of age admitted to the CCU with a suspicion of acute myocardial infarction	Parallel groups double blind Danish

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

### Bussman, 1984:

Bussmann WD, Seher W, Gruengras M Reduction of creatine kinase and creatine kinase-MB indexes of infarct size by intravenous verapamil Am J Cardiol 1984;54:1224-30 [6391131]

### DAVIT I, 1984:

Verapamil in acute myocardial infarction. The Danish Study Group on Verapamil in Myocardial Infarction Eur Heart J 1984;5:516-28 [6383832]

Hansen JF Treatment with verapamil after an acute myocardial infarction. Review of the Danish studies on verapamil in myocardial infarction (DAVIT I and II) Drugs 1991;42 Suppl 2:43-53 [1718701]

### Crea, 1985:

Crea F, Deanfield J, Crean P, Sharom M, Davies G, Maseri A Effects of verapamil in preventing early postinfarction angina and reinfarction Am J Cardiol 1985;55:900-4 [3920891]

### DAVIT II, 1990:

Effect of verapamil on mortality and major events after acute myocardial infarction (the Danish Verapamil Infarction Trial II–DAVIT II) Am J Cardiol 1990;66:779-85 [2220572]

Vaage-Nilsen M, Rasmussen V Effect of verapamil on heart rate variability after an acute myocardial infarction. Danish Verapamil Infarction Trial II Cardiovasc Drugs Ther 1998;12:285-90 [9784908]

Vaage-Nilsen M, Rasmussen V, Hansen JF, Hagerup L, Sorensen MB, Pedersen-Bjergaard O, Mellempgaard K, Hollander NH, Nielsen I, Sigurd BM Effect of verapamil on arrhythmias and heart rate during 16 months following an acute myocardial infarction. The Danish Study Group on Verapamil in Myocardial Infarction Cardiovasc Drugs Ther 1994;8:147-51 [8086325]

### CRIS, 1996:

Rengo F, Carbonin P, Pahor M, DeCaprio L, Bernabei R, Ferrara N, Carosella L, Acanfora D, Parlati S, Vitale D A controlled trial of verapamil in patients after acute myocardial infarction: results of the calcium antagonist reinfarction Italian study (CRIS) Am J Cardiol 1996;77:365-9 [8602564]

Ferrara N Giorn geront 1996;44:577-583

### Danish study, 1984:

Verapamil in acute myocardial infarction. The Danish Study Group on Verapamil in Myocardial Infarction. Eur Heart J 1984;5:516-28 [6383832]

## 2 post myocardial infarction

Trial	Treatments	Patients	Trials design and methods
verapamil vs placebo			

continued...

Trial	Treatments	Patients	Trials design and methods
DAVIT I , 1984 n=1751/1747 follow-up: 6 months	verapamil 120mgx3 versus placebo	-	Parallel groups Double blind Danish
DAVIT II , 1990 n=878/897 follow-up: 16 months	verapamil 120mgx3 for 18 months versus placebo	patients <76years with diagnosis of acute MI	Parallel groups Double blind Danish
CRIS , 1996 n=531/542 follow-up: 23.5 months	verapamil retard 360 mg daily versus placebo	patients admitted for acute myocardial infarction	Parallel groups Double blind Italy
Danish study , 1984 n=1729/1718 follow-up: 12 months	verapamil 0.1mg/kg IV plus 3x120mg orally versus placebo	patients under 75 years of age admitted to the CCU with a suspicion of acute myocardial infarction	Parallel groups double blind Danish

More details and results :

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

## References

### DAVIT I, 1984:

Verapamil in acute myocardial infarction. The Danish Study Group on Verapamil in Myocardial Infarction Eur Heart J 1984;5:516-28 [6383832]

Hansen JF Treatment with verapamil after an acute myocardial infarction. Review of the Danish studies on verapamil in myocardial infarction (DAVIT I and II) Drugs 1991;42 Suppl 2:43-53 [1718701]

### DAVIT II, 1990:

Effect of verapamil on mortality and major events after acute myocardial infarction (the Danish Verapamil Infarction Trial II–DAVIT II) Am J Cardiol 1990;66:779-85 [2220572]

Vaage-Nilsen M, Rasmussen V Effect of verapamil on heart rate variability after an acute myocardial infarction. Danish Verapamil Infarction Trial II Cardiovasc Drugs Ther 1998;12:285-90 [9784908]

Vaage-Nilsen M, Rasmussen V, Hansen JF, Hagerup L, Sorensen MB, Pedersen-Bjergaard O, Mellempgaard K, Hollander NH, Nielsen I, Sigurd BM Effect of verapamil on arrhythmias and heart rate during 16 months following an acute myocardial infarction. The Danish Study Group on Verapamil in Myocardial Infarction Cardiovasc Drugs Ther 1994;8:147-51 [8086325]

### CRIS, 1996:

Rengo F, Carbonin P, Pahor M, DeCaprio L, Bernabei R, Ferrara N, Carosella L, Acanfora D, Parlati S, Vitale D A controlled trial of verapamil in patients after acute myocardial infarction: results of the calcium antagonist reinfarction Italian study (CRIS) Am J Cardiol 1996;77:365-9 [8602564]

Ferrara N Giorn geront 1996;44:577-583

### Danish study, 1984:

Verapamil in acute myocardial infarction. The Danish Study Group on Verapamil in Myocardial Infarction. Eur Heart J 1984;5:516-28 [6383832]

## 3 hypertension

Trial	Treatments	Patients	Trials design and methods
<b>verapamil vs atenolol</b>			
<b>INVEST (Pepine) , 2003</b> [NCT00133692] n=11267/11309 follow-up: 2.7 y	verapamil sustained release 240mg/d versus atenolol 50mg/d	patients with hypertension and CAD	14 countries
<b>verapamil vs chlorthalidone</b>			
<b>VHAS , 1998</b> n=707/707 follow-up: 2 years	verapamil SR 240 mg/d versus chlorthalidone 25mg/d	HBP	Parallel groups Open
<b>verapamil vs diuretic or beta-blocker</b>			
<b>CONVINCE , 2003</b> n=8241/8361 follow-up: 3 y	controlled-onset extendedrelease(COER) verapamil 180mg/d versus hydrochlorothiazide 12.5 mg/d or atenolol 50 mg/d(investigator choice prior to randomization)	hypertension with 1 or more additional risk factors for cardiovascular disease	Parallel groups Double blind 15 countries

More details and results :

- 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>
- anti hypertensive agents for hypertension in patients with additional risk factor at <http://www.trialresultscenter.org/go-Q686>

## References

### INVEST (Pepine), 2003:

Pepine CJ, Handberg EM, Cooper-DeHoff RM, Marks RG, Kowey P, Messerli FH, Mancia G, Cangiano JL, Garcia-Barreto D, Keltai M, Erdine S, Bristol HA, Kolb HR, Bakris GL, Cohen JD, Parmley WW A calcium antagonist vs a non-calcium antagonist hypertension treatment strategy for patients with coronary artery disease. The International Verapamil-Trandolapril Study (INVEST): a randomized controlled trial. JAMA 2003 Dec 3;290:2805-16 [14657064]

### VHAS, 1998:

Rosei EA, Dal Palu C, Leonetti G, Magnani B, Pessina A, Zanchetti A Clinical results of the Verapamil in Hypertension and Atherosclerosis Study. VHAS Investigators. J Hypertens 1997 Nov;15:1337-44 [9383184]

Zanchetti A, Rosei EA, Dal Palu C, Leonetti G, Magnani B, Pessina A The Verapamil in Hypertension and Atherosclerosis Study (VHAS): results of long-term randomized treatment with either verapamil or chlorthalidone on carotid intima-media thickness. J Hypertens 1998 Nov;16:1667-76 [9856368]

**CONVINCE, 2003:**

Black HR, Elliott WJ, Grandits G, Grambsch P, Lucente T, White WB, Neaton JD, Grimm RH Jr, Hansson L, Lacourciere Y, Muller J, Sleight P, Weber MA, Williams G, Wittes J, Zanchetti A, Anders RJ Principal results of the Controlled Onset Verapamil Investigation of Cardiovascular End Points (CONVINCE) trial. JAMA 2003 Apr 23-30;289:2073-82 [12709465]

## 4 diabetes type 2

Trial	Treatments	Patients	Trials design and methods
<b>verapamil vs control</b>			
INVEST (subgroup) , 2003 n=3169/3231 follow-up: 24 months	calcium antagonist strategy (verapamil sustained release) versus non-calcium antagonist strategy (atenolol)	hypertensive CAD patients aged 50 years or older	Parallel groups open 14 countries

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More details and results :

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

## References

**INVEST (subgroup), 2003:**

Pepine CJ, Handberg EM, Cooper-DeHoff RM, Marks RG, Kowey P, Messerli FH, Mancia G, Cangiano JL, Garcia-Barreto D, Keltai M, Erdine S, Bristol HA, Kolb HR, Bakris GL, Cohen JD, Parmley WW A calcium antagonist vs a non-calcium antagonist hypertension treatment strategy for patients with coronary artery disease. The International Verapamil-Trandolapril Study (INVEST): a randomized controlled trial. JAMA 2003;290:2805-16 [14657064] 10.1001/jama.290.21.2805

Sharma SK, Ruggenti P, Remuzzi G Managing hypertension in diabetic patients-focus on trandolapril/verapamil combination. Vasc Health Risk Manag 2007;3:453-65 [17969376]

## 5 percutaneous coronary intervention

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

continued...

Trial	Treatments	Patients	Trials design and methods
Hoberg , 1994 n=89/83 follow-up: 6 months	verapamil (240 mg bid) 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

### Hoberg, 1994:

Hoberg E, Dietz R, Frees U, Katus HA, Rauch B, Schmig A, Schuler G, Schwarz F, Tillmanns H, Niebauer J Verapamil treatment after coronary angioplasty in patients at high risk of recurrent stenosis. Br Heart J 1994;71:254-60 [8142195]

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