

# Clinical trials of anti hypertensive agents for hypertension in nephropathy

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## 1 angiotensin receptor blocker

Trial	Treatments	Patients	Trials design and methods
<b>ARBs vs control</b>			
<b>Suzuki , 2008</b> n=183/183 follow-up:	ARBs (valsartan, candesartan, and losartan) versus no ARBs	patients with diabetes and chronic kidney disease on dialysis	Parallel groups open
<b>candesartan vs control</b>			
<b>Takahashi , 2006</b> n=43/37 follow-up: 19.4 months	candesartan versus control	patients on chronic haemodialysis in stable condition and with no clinical evidence of cardiac disorders	Parallel groups open
<b>candesartan vs conventional treatment</b>			
<b>E-COST-R , 2005</b> n=69/72 follow-up:	candesartan versus conventional treatment	hypertensive subjects 60 to 75 years old with non-diabetic chronic renal insufficiency	Parallel groups open
<b>irbesartan vs placebo</b>			
<b>IDNT (irbesartan vs pbo) , 2001</b> n=579/569 follow-up: 2.6 y	Irbesartan 300mg/d (target 135/85) versus placebo	hypertensive patients with nephropathy due to type 2 diabetes	Parallel groups double-blind worldwide
<b>irbesartan vs amlodipine</b>			
<b>IDNT (irbesartan vs amlodipine) , 2001</b> n=579/567 follow-up: 26y	Irbesartan 300mg/d (with a target of 135/85) versus amlodipine 10mg/d (with a target of 135/85)	hypertensive patients with nephropathy due to type 2 diabetes	Parallel groups double-blind worldwide
<b>telmisartan vs enalapril</b>			
<b>DETAIL , 2004</b> n=120/130 follow-up: 5 year	telmisartan 80 mg daily versus enalapril 20 mg daily	subjects with type 2 diabetes and early nephropathy	Parallel groups double-blind

## References

### Suzuki, 2008:

Suzuki H, Kanno Y, Sugahara S, Ikeda N, Shoda J, Takenaka T, Inoue T, Araki R Effect of angiotensin receptor blockers on cardiovascular events in patients undergoing hemodialysis: an open-label randomized controlled trial. Am J Kidney Dis 2008;52:501-6 [18653268] [10.1053/j.ajkd.2008.04.031](https://doi.org/10.1053/j.ajkd.2008.04.031)

### Takahashi, 2006:

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**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](#)]

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](#)]

**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](#)]

**DETAIL, 2004:**

Barnett AH, Bain SC, Bouter P, Karlberg B, Madsbad S, Jervell J, Mustonen J Angiotensin-receptor blockade versus converting-enzyme inhibition in type 2 diabetes and nephropathy. *N Engl J Med* 2004;351:1952-61 [[15516696](#)] [10.1056/NEJMoa042274](#)

## 2 angiotensin-converting enzyme inhibitors

Trial	Treatments	Patients	Trials design and methods
<b>ramipril vs amlodipine</b>			
<b>AASK (ramipril vs amlodipine) , 2002</b> n=436/217 follow-up: 30 y	ramipril 2.5-10 mg/d versus amlodipine 5-10 mg/d	African Americans aged 18 to 70 years with hypertensive renal disease (GFR, 20-65 mL/min per 1.73 m <sup>2</sup> )	Parallel groups Double blind US
<b>ramipril vs metoprolol</b>			
<b>AASK (ramipril vs metoprolol) , 2002</b> n=436/441 follow-up: 41 y	ramipril 2.5-10 mg/d versus metoprolol 50-200 mg/d	African Americans aged 18 to 70 years with hypertensive renal disease (GFR, 20-65 mL/min per 1.73 m <sup>2</sup> )	Parallel groups Double blind US

## References

**AASK (ramipril vs amlodipine), 2002:**

Wright JT Jr, Bakris G, Greene T, Agodoa LY, Appel LJ, Charleston J, Cheek D, Douglas-Baltimore JG, Gassman J, Glassock R, Hebert L, Jamerson K, Lewis J, Phillips RA, Toto RD, Middleton JP, Rostand SG Effect of blood pressure lowering and antihypertensive drug class on progression of hypertensive kidney disease: results from the AASK trial. *JAMA* 2002;288:2421-31 [[12435255](#)]

**AASK (ramipril vs metoprolol), 2002:**

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Norris K, Bourgoigne J, Gassman J, Hebert L, Middleton J, Phillips RA, Randall O, Rostand S, Sherer S, Toto RD, Wright JT Jr, Wang X, Greene T, Appel LJ, Lewis J Cardiovascular outcomes in the African American Study of Kidney Disease and Hypertension (AASK) Trial. *Am J Kidney Dis* 2006;48:739-51 [[17059993](#)] [10.1053/j.ajkd.2006.08.004](#)

### 3 calcium-channel blockers

Trial	Treatments	Patients	Trials design and methods
<b>amlodipine vs placebo</b>			
<b>IDNT (amlodipine vs pbo) , 2001</b> n=567/569 follow-up: 26	Amlodipine 10mg/d versus placebo	hypertensive patients with nephropathy due to type 2 diabetes	Parallel groups Double blind
<b>amlodipine vs metoprolol</b>			
<b>AASK (amlodipine vs metoprolol) , 2002</b> n=217/441 follow-up: 30y	Amlodipine 5-10 mg/d versus metoprolol 50-200 mg/d	African Americans aged 18 to 70 years with hypertensive renal disease (GFR, 20-65 mL/min per 1.73m <sup>2</sup> )	US
<b>amlodipine vs ramipril</b>			
<b>AASK (amlodipine vs ramipril) , 2002</b> n=217/436 follow-up: 30	Amlodipine 5-10 mg/d versus ramipril 2.5-10 mg/d	African Americans aged 18 to 70 years with hypertensive renal disease (GFR, 20-65 mL/min per 1.73m <sup>2</sup> )	Factorial plan Double blind US

### 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](#)]

#### AASK (amlodipine vs metoprolol), 2002:

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#### AASK (amlodipine vs ramipril), 2002:

Wright JT Jr, Bakris G, Greene T, Agodoa LY, Appel LJ, Charleston J, Cheek D, Douglas-Baltimore JG, Gassman J, Glassock R, Hebert L, Jamerson K, Lewis J, Phillips RA, Toto RD, Middleton JP, Rostand SG Effect of blood pressure lowering and antihypertensive drug class on progression of hypertensive kidney disease: results from the AASK trial. JAMA 2002;288:2421-31 [[12435255](#)]

### 4 direct renin inhibitor

Trial	Treatments	Patients	Trials design and methods
<b>aliskiren vs placebo</b>			
<b>AVOID , 2008</b> [NCT00097955] n=301/298 follow-up: 6 months	aliskiren (150 mg daily for 3 months, followed by an increase in dosage to 300 mg daily for another 3 months versus placebo	patients with hypertension and type 2 diabetes with nephropathy	Parallel groups double blind 15 countries

## References

### AVOID, 2008:

Parving HH, Persson F, Lewis JB, Lewis EJ, Hollenberg NK Aliskiren combined with losartan in type 2 diabetes and nephropathy. N Engl J Med 2008;358:2433-46 [[18525041](#)]

## 5 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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