Diabetic nephropathy

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Type 2 diabetes and early nephropathy

Angiotensin II receptor antagonists

In this section:

Summary

Mortality

Compared with ACE inhibitors The effects of angiotensin II receptor antagonists on mortality seem to be similar to those of ACE inhibitors (low-quality evidence).

Progression to late nephropathy

Compared with placebo Angiotensin II receptor antagonists reduce progression to late nephropathy in people with type 2 diabetes, hypertension, and microalbuminuria, compared with placebo (high-quality evidence).

Compared with ACE inhibitors The effects of angiotensin II receptor antagonists on progression of nephropathy seem to be similar to those of ACE inhibitors (low quality evidence).

Cardiovascular events

Compared with ACE inhibitors The effects of angiotensin II receptor antagonists on cardiovascular events seem to be similar to those of ACE inhibitors (low quality evidence).

Note

We found no clinically important results about the effects of combined angiotensin II receptor antagonists plus ACE inhibitors in people with type 2 diabetes and early nephropathy.

For GRADE evaluation of interventions for diabetic nephropathy, see table.

Top

Benefits

Angiotensin II receptor antagonists versus placebo:

We found one RCT, which found that irbesartan 300 mg significantly reduced progression to late nephropathy over 2 years compared with placebo, in people with type 2 diabetes, hypertension, and microalbuminuria. [33] It found no significant decrease with irbesartan 150 mg compared with placebo (1 RCT, 590 people; progression from early to late nephropathy: 10/194 [5%] with irbesartan 300 mg *v* 30/201 [15%] with placebo; HR 0.30, 95% CI 0.14 to 0.61; P < 0.001; 19/195 [10%] with irbesartan 150 mg *v* 30/201 [15%] with placebo; HR 0.61, 95% CI 0.34 to 1.08; P = 0.08). Early nephropathy (microalbuminuria) was defined as an albumin excretion rate of 20–200 µg/minute and late nephropathy as albumin excretion rate greater than 200 µg/minute. [33]

Angiotensin II receptor antagonists versus ACE inhibitors:

We found one RCT (250 people with type 2 diabetes and early nephropathy), which found no significant difference in change in glomerular filtration rate, mortality, stroke, heart failure, and myocardial infarction between telmisartan 80 mg and enalapril 20 mg in people with type 2 diabetes and early nephropathy over 5 years of follow up (change in glomerular filtration rate: –17.9 mL/minute/1.73 m^2 with telmisartan *v* –14.9 mL/minute/1.73 m^2 with enalapril; treatment difference: –3.0 mL/minute/1.73 m^2, 95% CI –7.6 mL/minute/1.73 m^2 to +1.6 mL/minute/1.73 m^2 ; mortality: 6/120 [5.0%] with telmisartan *v* 6/130 [4.6%] with enalapril; RR 1.04, 95% CI 0.58 to 1.87; stroke: 6/120 [5.0%] with telmisartan *v* 6/130 [4.6%] with enalapril; RR 1.04, 95% CI 0.58 to 1.87; heart failure: 9/120 [8%] with telmisartan *v* 7/130 [5%] with enalapril; RR 1.39, 95% CI 0.54 to 3.62; myocardial infarction: 9/120 [8%] with telmisartan *v* 6/130 [5%] with enalapril; RR 1.63, 95% CI 0.60 to 4.43). [34] Although this study found no difference between the two drugs, the results could have been biased, as telmisartan was at maximum dose, whereas enalapril was not.

Angiotensin II receptor antagonists plus ACE inhibitors:

We found no systematic review or RCTs.

Top

Harms

Angiotensin II receptor antagonists versus placebo:

The RCT found no significant difference in the proportion of people permanently discontinuing medication (590 people; 15% with combined doses of irbesartan *v* 19% with placebo; P = 0.21). [33]

Angiotensin II receptor antagonists versus ACE inhibitors:

The RCT found no significant difference in the proportion of people discontinuing telmisartan or enalapril (20/120 [17%] with telmisartan *v* 30/130 [23%] with enalapril; P = 0.21). [34]

Angiotensin II receptor antagonists plus ACE inhibitors:

We found no RCTs.

Top

Comment

None.

References

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34. Barnett AH, Bain SC, Bouter P, et al. Angiotensin-receptor blockade versus converting-enzyme inhibition in type 2 diabetes and nephropathy. *N Engl J Med* 2004;351:1952–1961. [PubMed]