Major journals

N ENGL J MED

Aliskiren does not reduce CV events in people with T2D

Readability	✓✓✓✓✓
Applicability to practice	✓✓✓✓✓
WOW! factor	✓✓✓✓✓

1 The authors set out to determine whether the use of the direct renin inhibitor aliskiren would reduce cardiovascular (CV) and renal events in people with T2D and chronic kidney disease, CV disease (CVD)or both.

2 In a double-blind, randomised controlled trial, 8561 participants who met the above criteria were assigned to aliskiren (300 mg daily) or placebo in addition to an angiotensin-converting enzyme inhibitor or an angiotensin-receptor blocker.

3 The primary endpoint was a composite of time to first CV event (including myocardial infarction, stroke and heart failure), end-stage renal disease, kidney failure, renal replacement therapy, doubling of the baseline serum creatinine level or death.

4 After a median follow-up of 32.9 months, the primary endpoint had occurred in 783 (18.3%) individuals assigned to aliskiren compared with 732 (17.1%) assigned to placebo (hazard ratio, 1.08; 95% confidence interval, 0.98–1.20; P=0.12); effects on secondary renal endpoints were similar.

5 The proportion of participants with hyperkalaemia (serum potassium level ≥6 mmol/L) and with reported hypotension were significantly higher in the aliskiren group than in the placebo group (P<0.001 for both comparisons).

6 The authors concluded that these data do not support the addition of aliskiren to standard renin–angiotensin system blockade in individuals with T2D at high risk for CV and renal events.

7 The trial was stopped prematurely because of these results.

Parving HH, Brenner BM, McMurray JJ et al (2012) Cardiorenal endpoints in a trial of aliskiren for type 2 diabetes. *N Engl J Med* **367**: 2204–13

Aliskiren not proven in dual renin–angiotensin blockade

Jiten Vora, Professor of Diabetes, Royal Liverpool University Hospital, Liverpool

There continues to be debate regarding dual blockade of the renin–angiotensin system when treating renal disease and cardiovascular disease (CVD) in people with diabetes. In those with renal disease, the risk of CVD is, of course, magnified; blood pressure (BP) lowering has been shown to reduce the rate of progression of renal disease and CVD. It has been proposed that dual renin–angiotensin system blockade may be more effective than using a single agent. Previous studies examining this proposal have not supported combination therapy with angiotensin-converting enzyme (ACE) inhibitors or angiotensin-receptor blockers (ARBs; Pfeffer et al, 2003; ONTARGET Investigators et al, 2008).

Parving et al (2012; summarised alongside) examined the effect of the addition of a direct renin inhibitor (DRI) aliskiren compared with placebo as an adjunct to either an ACE inhibitor or ARB, as per usual practice. This trial, which was discontinued prematurely after 39.2 months following an interim efficacy analysis, revealed an increase in primary endpoint incidence (composite CVD and renal endpoints) in those who were assigned to aliskiren (18.3%; n=783) compared with those assigned to the placebo group. While systolic and diastolic BPs were lower with aliskiren than with placebo, the effects on secondary renal endpoints were similarly increased (compared with placebo), although the mean reduction in albumin–creatinine ratio was greater with the DRI. As expected, there were more individuals with hyperkalaemia in the DRI group, compared with the ACE inhibitor and ARB groups.

The study findings highlight the need to reduce the routine use of a combination of two agents blocking the renin–angiotensin system; the only situation where this should be considered is when treating uncontrolled BP.

Pfeffer MA, McMurray JJ, Velazquez EJ et al (2003) Valsartan, captopril, or both in myocardial infarction complicated by heart failure, left ventricular dysfunction, or both. *N Engl J Med* **349**: 1893–906

ONTARGET Investigators, Yusuf S, Teo KK et al (2008) Telmisartan, ramipril, or both in patients at high risk for vascular events. *N Engl J Med* **358**: 1547–59

LANCET

Population screening for T2D is not associated with reduced mortality

Readability	✓✓✓✓
Applicability to practice	✓✓✓✓
WOW! factor	✓✓✓✓

1 As the increasing prevalence of T2D poses a major public health challenge, population-based screening for undiagnosed cases of T2D, and early treatment could reduce complications.

2 To determine the benefits of T2D screening, the authors assessed the effect of a population-based step-wise screening programme on mortality in T2D.

3 A total of 20 184 people at high risk of diabetes (aged 40–69 years; mean 58 years) from 33 general practices were randomly assigned to: screening with intensive treatment for those diagnosed with diabetes; screening with routine care for those diagnosed with diabetes; and no screening (control group), in a primary care-based screening and intervention study for T2D. The primary outcome in this half of the study was all-cause mortality.

4 Of the 15 089 people invited for screening, 11 737 (73%) attended and 466 (3%) were diagnosed with T2D; the control group (n=4137) were followed up in non-screening practices.

5 During 184 057 person-years of follow-up (median duration, 9.6 years), there were 1532 deaths in the screening group and 377 in the control group (mortality hazard ratio [HR], 1.06; 95% confidence interval [CI], 0.90–1.25).

6 Screening for T2D was not associated with significant reductions in cardiovascular (HR, 1.02; 95% CI, 0.75–1.38), cancer- (1.08; 0.90–1.30) or diabetes-related mortality (1.26; 0.75–2.10).

Simmons RK, Echouffo-Tcheugui JB, Sharp SJ et al (2012) Screening for type 2 diabetes and population mortality over 10 years (ADDITION-Cambridge): A cluster-randomised controlled trial. *Lancet* **380**: 1741–8

"The introduction of electronic health records significantly decreased HbA_{1c} and LDL-cholesterol levels, with the largest reductions seen in people with diabetes who had the worst glycaemic control."

ANN INTERN MED

Sulphonylurea monotherapy increases CVD risk in T2D

Readability	✓✓✓✓
Applicability to practice	✓✓✓✓
WOW! factor	✓✓✓✓

1 Although it is well known that people with diabetes have a high risk of cardiovascular disease (CVD), it is less clear how drugs used to manage T2D affect this risk.

2 As metformin and sulphonylureas are most commonly used to manage T2D, the study objective was to compare the effects of these therapies on CVD outcomes; the primary composite outcome was hospitalisation for acute myocardial infarction or stroke, or death.

3 In this retrospective cohort study, data from Veterans Health Administration databases were analysed in terms of diabetes treatment (metformin or sulphonylurea monotherapy) and CVD outcomes; measures analysed included HbA_{1c}, BMI, serum creatinine level and blood pressure.

4 Data from people receiving either sulphonylurea monotherapy (n=98 665) or metformin monotherapy (n=55 025) for T2D were included in the analysis.

5 Unadjusted rates of the composite outcome were 18.2 per 1000 person-years for people on sulphonylurea monotherapy and 10.4 per 1000 person-years for those on metformin monotherapy (adjusted hazard ratio [aHR], 1.21; 95% confidence interval [CI], 1.13–1.30).

6 In a subgroup analysis of sulphonylurea type, results were consistent for both glyburide (aHR, 1.26; 95% CI, 1.16–1.37) and glipizide (aHR, 1.15; 95% CI, 1.06–1.26).

7 The authors concluded that, compared with metformin, sulphonylurea monotherapy increased the risk of CVD events or death in T2D.

Roumie CL, Hung AM, Greevy RA et al (2012) Comparative effectiveness of sulphonylurea and metformin monotherapy on cardiovascular events in type 2 diabetes mellitus. *Ann Intern Med* **157**: 601–10

N ENGL J MED

CABG versus PCI in reducing mortality and MI in diabetes

Readability	✓✓✓✓
Applicability to practice	✓✓✓✓
WOW! factor	✓✓✓

1 The authors sought to determine whether coronary artery bypass grafting (CABG) or percutaneous coronary intervention (PCI) with drug-eluting stents is the superior revascularisation strategy for people with diabetes and multi-vessel coronary artery disease (CAD).

2 In total, 1900 people with diabetes and multi-vessel CAD were randomised to undergo either CABG or PCI with drug-eluting stents, and were followed up for a median of 3.8 years.

3 The primary outcome was a composite of death from any cause, non-fatal myocardial infarction (MI) and non-fatal stroke.

4 The primary outcome occurred in 205 people in the PCI group and 147 people in the CABG group; 5-year event rates were 26.6% in the PCI group and 18.7% in the CABG group.

5 Compared with PCI, CABG was associated with improved rates of MI (P<0.001) and all-cause mortality (P=0.049); however, rate of stroke was increased in this group.

Farkouh ME, Domanski M, Sleeper LA et al (2012) Strategies for multi-vessel revascularisation in patients with diabetes. *N Engl J Med* **367**: 2375–84

ANN INTERN MED

EHRs reduce HbA_{1c} and LDL-cholesterol

Readability	✓✓✓✓
Applicability to practice	✓✓✓
WOW! factor	✓✓✓✓

1 The authors examined whether a commercially available electronic health record (EHR) could affect outpatient care and improve outcomes in people with diabetes. A certified EHR was sequentially introduced across 17 medical centres comprising 169 711 participants.

2 The authors examined drug treatment intensification, HbA_{1c} and low-density lipoprotein (LDL)-cholesterol values before and after the introduction of EHR.

3 EHR implementation significantly improved drug treatment intensification after HbA_{1c} values of ≥75 mmol/mol (9%) and LDL-cholesterol values of 2.6–3.3 mmol/L.

4 The introduction of EHRs significantly decreased HbA_{1c} and LDL-cholesterol levels, with the largest reductions seen in people with diabetes who had the worst glycaemic control. Less HbA_{1c} and LDL-cholesterol testing was needed in those already achieving national glycaemic and lipid targets.

Reed M, Huang J, Graetz I et al (2012) Outpatient electronic health records and the clinical care and outcomes of patients with diabetes mellitus. *Ann Intern Med* **157**: 482–9

ARCH INTERN MED

Legumes as part of a low-GI diet improve glycaemic control

Readability	✓✓✓
Applicability to practice	✓✓
WOW! factor	✓✓✓

1 Legumes or "pulses", such as beans, chickpeas and lentils, are recognised as having low glycaemic index (GI) values and are recommended as part of a low-GI diet in many national diabetes guidelines.

2 The authors investigated the effect of legumes as part of a low-GI diet on glycaemic control and coronary heart disease (CHD) risk in people with T2D.

3 A total of 121 participants were randomised to either a low-GI legume diet (n=60) or a high-wheat-fibre diet (n=61) for 3 months; HbA_{1c} and lipid measures were assessed regularly.

4 The low-GI legume diet reduced HbA_{1c} values, systolic blood pressure and risk of CHD compared with the high-wheat-fibre diet (P<0.001, P<0.001 and P=0.003, respectively).

Jenkins DJ, Kendall CW, Augustin LS et al (2012) Effect of legumes as part of a low glycaemic index diet on glycaemic control and cardiovascular risk factors in type 2 diabetes. *Arch Intern Med* **172**: 1653–60