Major journals

Lowering blood pressure: Of any benefit in cardiovascular disease?

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The ACCORD (Action to Control Cardiovascular Risk in Diabetes) study (2010; summarised alongside) continues to provide "controversial" results.

Healthcare professionals involved in diabetes care are keen on blood pressure-lowering therapy to reduce macro- and micro-vascular endpoints; targets have been established from previous studies such as the UKPDS (UK Prospective Diabetes Study; UKPDS Group, 1998) and the HOT (Hypertension Optimal Treatment) study (Kjeldsen et al, 1998).

The ACCORD blood pressure study suggests that lowering of systolic blood pressure to below 120 mmHg (mean 119 mmHg) does not result in an reduction in the primary composite outcome of nonfatal myocardial infarction, nonfatal stroke or death from cardiovascular causes, compared with a group of patients whose mean systolic blood pressure was 133.5 mmHg.

It is important to recognise that the number of events in this study was considerably lower and, indeed, were in the order of 50% of previously reported rates in the standard therapy group. However, the intensively treated group demonstrated a major reduction in stroke, with hazard ratios of 0.59 and 0.63 for any event or nonfatal stroke, while all other secondary endpoints remained non-significant between the two groups.

> ***"While it is to be recognised that systolic blood pressures of 130 mmHg would be an appropriate target, debate will continue with regard to the benefits of lowering blood pressure further, particularly from the point of view of cerebrovascular disease."***

Thus, while it is to be recognised that systolic blood pressures of 130 mmHg would be an appropriate target, debate will continue with regard to the benefits of lowering blood pressure further, particularly from the point of view of cerebrovascular disease. Indeed, it must also be recognised that the intensively-treated group had significantly more side-effects than those in the standard therapy group.

Kjeldsen SE, Hedner T, Jamerson K et al (1998) Hypertension Optimal Treatment (HOT) Study – home blood pressure in treated hypertensive subjects. *Hypertension* **31**: 1014–20

UKPDS Group (1998) Intensive blood-glucose control with sulphonylureas or insulin compared with conventional treatment and risk of complications in patients with type 2 diabetes (UKPDS 33). *Lancet* **352**: 837–53

NEJM

HbA_{1c} an accurate test for T2D?

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

1 New clinical guidelines from the American Diabetes Association recommend the use of HbA_{1c} rather than fasting glucose levels for the diagnosis of T2D.

2 The relationship between HbA_{1c} and fasting glucose levels and the incidence of T2D and cardiovascular (CV) disease were compared in 11 092 people with no history of T2D or CV disease.

3 People with HbA_{1c} levels ≥6.0% (≥42 mmol/mol) were found to be at risk of T2D. Furthermore, raised HbA_{1c} level at baseline was found to be a marker for CV disease, while fasting glucose levels were not significantly associated with CV risk.

4 The authors suggest that these data warrant the use of HbA_{1c} levels as a diagnostic test for T2D in the future.

Selvin E, Steffes MW, Zhu H et al (2010) Glycated hemoglobin, diabetes, and cardiovascular risk in nondiabetic adults. *N Engl J Med* **362**: 800–11

NEJM

Blood pressure control and CV risk in T2D

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

1 Among people with diabetes, the risk of cardiovascular (CV) disease increases two- to three-fold for every level rise of systolic blood pressure.

2 This ACCORD (Action to Control Cardiovascular Risk in Diabetes) trial examined whether therapy targeting a systolic blood pressure below 120 mmHg would reduce major CV events in people with T2D at high risk of CV events.

3 In total, 4733 participants (mean age, 62 years) with T2D were randomly assigned to either intensive (n=2362) or standard (n=2371) blood pressure control, with target systolic blood pressures of <120 mmHg and <140 mmHg, respectively.

4 The primary outcome was first occurrence of a major CV event (nonfatal myocardial infarction, nonfatal stroke or CV death). Median follow-up was 4.7 years.

5 After 1 year of treatment, mean systolic pressure was 119.3 mmHg after intensive therapy and 133.5 mmHg after standard therapy.

6 The primary outcome occurred at a rate of 1.87% per year in the intensive therapy group and 2.09% in the standard therapy group (hazard ratio [HR] with intensive therapy, 0.88; 95% confidence interval [CI], 0.73–1.06; P=0.20), and the annual rates of death from any cause were 1.28% and 1.19%, respectively (HR, 1.07; 95% CI, 0.85–1.35; P=0.55).

7 The authors concluded that targeting systolic pressure to <120 mmHg does not reduce the risk of major CV events in people with T2D.

ACCORD Study Group, Cushman WC, Evans GW et al (2010) Effects of intensive blood-pressure control in type 2 diabetes mellitus. *N Engl J Med* **362**: 1575–85