Major journals

A multi-pronged approach: A new strategy for improving cardiovascular risk factors?

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It is well recognised that type 2 diabetes is a cardiovascular disease risk factor. The vast majority of our patients with type 2 diabetes have associated hypertension and hyperlipidaemia. The treatment of all these three risk factors (type 2 diabetes, hypertension and hyperlipidaemia) is important in controlling the cardiovascular risk in this large patient group. Many studies in the past, usually in small populations, have demonstrated the clinical difficulty in achieving all three targets in a large number of patients. This is particularly so for an improvement in glycaemic control.

"This study demonstrates that a widespread clinical strategy can improve the rate of achieving the three combined targets."

The study by Ji et al (summarised alongside) demonstrates that a widespread clinical strategy can improve the rate of achieving the three combined targets. In approximately 25 000 patients, enrolled from endocrinology, general medicine, cardiology and nephrology clinics, approximately half of the participants achieved HbA_{1c} control, but thereafter, smaller numbers achieved two or three risk factor targets. Thus, it is clear that a widespread strategy involving various different disciplines of medicine can assist in increasing the number of patients achieving control of the three important risk factor for cardiovascular disease: blood glucose, blood pressure and blood lipids.

THE NEW ENGLAND JOURNAL OF MEDICINE

High glucose levels: a risk factor for dementia

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

1 The authors' aim was to determine if high glucose levels in people without diabetes are a risk factor for dementia. Data was taken from the ACT (Adult Changes in Thought) study, part of the Group Health Cooperative. Inclusion criteria for participants included being enrolled in Group Health for at least 5 years, and having at least five glucose or HbA_{1c} measurements over the course of 2 or more years before this study entry.

2 In total, 2067 dementia-free participants were assessed every 2 years using the Cognitive Abilities Screening Instrument for dementia, and depending on the results, follow-up tests occurred.

3 Over the median follow-up of 6.8 years, 26.2% of those that did not develop diabetes developed dementia, and 21.6%of those that did develop T2D developed dementia.

4 Among participants without diabetes, higher than average glucose values over the preceding 5 years was associated with an increased risk of dementia (P=0.01). When an average glucose level of 115 mg/dL (6.4 mmol/L), was compared with 100 mg/dL (5.5 mmol/L), the hazard ratio (HR) for dementia was 1.18 (95% confident interval [CI]).

5 People with diabetes with the highest glucose levels had an increased risk of dementia (P=0.002). For an average glucose level of 190 mg/dL (10.5 mmol/L), when compared with 160 mg/dL (8.9 mmol/L), the adjusted HR for dementia was 1.40 (95% CI).

6 High glucose values are associated with an increased risk of developing dementia in those with and without diabetes.

Crane PK, Walker R, Hubbard RA et al (2013) Glucose levels and risk of dementia. *N Engl J Med* **369**: 540–8

THE AMERICAN JOURNAL OF MEDICINE

Control of three CVD risk factors

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

1 The objective of this study was to assess the control of blood glucose, blood pressure (BP) and blood lipids (the 3Bs) among individuals with T2D as risk factors for cardiovascular disease (CVD).

2 Based in China, this cross-sectional, multicentre, observational study sampled participants from a wide range of geographical regions, hospital tiers and physician specialities.

3 Over 25 000 individuals with T2D from 140 centres were enrolled (mean age 62.6 years, 47% male). In total, 72% reported poor BP and blood lipid control.

4 The target goals for the clinical outcomes were HbA_{1c} 53 mmol/mol (<7%); BP <130/80 mmHg; and total cholesterol <4.5 mmol/L.

5 Among participants, the mean HbA_{1c} was 60 mmol/mol (7.6%), the mean BP was 133/78.8 mmHg, and the mean total cholesterol was 5.0 mmol/L.

6 In total, 47.7%, 28.4% and 36.1% achieved the individual target goals for HbA_{1c}, BP and total cholesterol, respectively.

7 Only 5.6% of participants achieved all three target goals.

8 Participants that were over the age of 65, male, educated, current non-smokers and non-drinkers, not overweight and newly diagnosed with diabetes were more likely to achieve control of all three risk factors for CVD.

9 This study highlights the effectiveness of a 3B approach to improve CVD risk factors.

Ji L, Hu D, Pan C et al (2013) Primacy of the 3B approach to control risk factors for cardiovascular disease in type 2 diabetes patients. *Am J Med* **126**: e11–22

JAMA

Home blood pressure telemonitoring

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

1 The aim of this investigation, part of the HyperLink study, was to measure the effectiveness of an intervention to lower blood pressure (BP) in a group of people with uncontrolled BP. In this cluster randomised clinical trial, the intervention care (IC) group was compared to usual care (UC).

2 The IC comprised a home BP monitor and phone calls with a doctoral pharmacist throughout the study period, which reduced in frequency over time.

3 The study time was 12 months of intervention and 6 months follow-up. The authors also investigated if BP could be maintained after the intervention was stopped (at 18 months).

4 In total, 16 centres were randomly assigned to administer the IC (n=8) or UC (n=8), and 450 people with uncontrolled BP were enrolled.

5 Target systolic BP (SBP)/diastolic BP (DBP) was ≤140/90 mmHg.

6 Compared with the UC group, BP was controlled in a significantly higher proportion of people in the IC group at all time points (6, 12 and 18 months).

7 The mean difference in SBP change between the IC and UC group were significant at all time points: –10.7 mmHg at 6 months, –9.7 mmHg at 12 months and –6.6 mmHg at 18 months.

8 The study found that home BP telemonitoring with pharmacist management resulted in larger improvements in BP control during the study and follow-up compared to UC.

Margolis KL, Asche SE, Bergdall AR et al (2013) Effect of home blood pressure telemonitoring and pharmacist management on blood pressure control: a cluster randomized clinical trial. *JAMA* **310**: 46–56

BMJ

FDA panel votes to ease restrictions on rosiglitazone

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

1 A joint Food and Drug Administration (FDA) advisory panel discussed the restrictions surrounding the prescription of rosiglitazone that have been in place since 2010.

2 The association between rosiglitazone and increased cardiovascular risk (in particular, increased risk of myocardial infarction) was first brought to light by a meta-analysis published in 2007 by Steven Nissen and Kathy Wolski.

3 The only trial to look specifically at the cardiovascular outcomes of rosiglitazone was the RECORD (Rosiglitazone Evaluated for Cardiovascular Outcomes and Regulation of glycaemia in Diabetes) study. It found no overall increased risk of cardiovascular events.

4 The advisory panel's vote took place on the second day of a 2-day joint meeting of the FDA's endocrinologic and metabolic drugs advisory committee and its drug safety and risk management advisory committee.

5 In total, 13 of the 26 advisory panel members voted to keep the drug on the market with a modification to the restrictions.

6 Seven members preferred to lift the ban entirely, five preferred for the restrictions to be continued with no modification, and one member preferred for rosiglitazone to be removed from the US market completely.

7 No final decision from the FDA about what will happen next has been announced (at the time of writing).

Tucker ME (2013) FDA panel advises easing restrictions on rosiglitazone. *BMJ* **10**: f3769

JAMA

Gastric band versus intensive management

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

1 This article, from the Diabetes Surgery Study, compared two interventions, Roux-en-Y gastric bypass and intensive medical management intervention to see which was more effective at achieving control of T2D, hypertension and hyperlipidaemia.

2 A total of 120 participants from four centres took part in the 12-month, unblinded randomised trial. The inclusion criteria included 30–67 years of age and an HbA_{1c} of ≥64 mmol/mol (≥8%). Participants also had a BMI from 30.0–39.9.

3 The intensive intervention was based on the protocol from the Look AHEAD study (i.e. decreased calorie intake and exercise).

4 All participants began the intensive medical management intervention, and then 60 were randomly assigned to receive a Roux-en-Y gastric bypass. Participants were willing to accept randomisation to either treatment.

5 Targets and primary outcomes included a composite goal of HbA_{1c} 53 mmol/mol (<7%), LDL-cholesterol <100 mg/dL (<2.6 mmol/L) and systolic blood pressure <130 mmHg.

6 After study's end, 49% (95% confident interval [CI]) of the gastric bypass group and 19% (95% CI) of the intensive medication group achieved the target end points (odds ratio 4.8; 95% CI).

7 People in the gastric bypass group required less medication and lost more of their initial body weight than the intensive medication group.

Ikramuddin S, Korner J, Lee WJ et al (2013) Roux-en-Y gastric bypass vs intensive medical management for the control of type 2 diabetes, hypertension, and hyperlipidemia: the Diabetes Surgery Study randomized clinical trial. *JAMA* **309**: 2240–9

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