

## Cardiovascular journals

### Multifactorial CV intervention in people with type 2 diabetes: Striking a balance



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This is an excellent article that everybody should read. Opie et al (2010; summarised alongside) precis the current status of cardiovascular risk factor management in type 2 diabetes and thereafter

move on to possibilities of therapies for the near future. These include extending beyond LDL-cholesterol lowering, an overview of how low blood pressure targets should be, and thereafter extends into the possible adverse effects of gluco-lipo-toxicity.

The cardiac events of intensive glycaemic control are also evaluated with a description of “how

low to go”. Further assessment of cardiovascular risk relates to the evaluation of heart failure in diabetes and subsequently the treatment thereof and the utilisation of oral antidiabetes agents in pre-existing heart failure.

Finally, there is a description of coronary revascularisation versus percutaneous coronary intervention, specifically relating to the findings of the BARI-2D (Bypass Angioplasty

Revascularization Investigation 2 Diabetes) trial. Thus, this article is to be recommended on grounds of its overview of the current status of treatment of cardiovascular risk and for the thought-provoking content relating to the possibilities in the near future for additional therapies.

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### INTERNATIONAL JOURNAL OF CARDIOLOGY

#### Role for ARBs in prevention of new-onset T2D

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

- The authors of this meta-analysis aimed to evaluate the effect of angiotensin receptor blockers (ARBs) on the development of new-onset T2D.
- Eleven RCTs were included, comprising 79 773 people (59 862 without T2D at baseline).
- Incidence of new-onset T2D was significantly lower in the ARB group compared with the control group (odds ratio [OR], 0.79 [0.74, 0.84]).
- Compared with placebo, beta-blocker, calcium-channel blocker and non-ARBs, ARBs were associated

with a significant reduction in the risk of new-onset T2D (OR, 0.83 [0.78, 0.89]; 0.73 [0.62, 0.87]; 0.76 [0.68, 0.85]; 0.57 [0.36, 0.91], respectively).

- ARBs were associated with a significant reduction in new-onset T2D in people with hypertension, heart failure, impaired glucose tolerance or cardiocerebrovascular conditions.
- Incidence of new-onset T2D was significantly lower in the ARB group compared with the control group, irrespective of the blood pressure level achieved.
- The authors concluded that there is sufficient evidence that ARBs are beneficial in preventing new-onset T2D, and should be considered in people considered at high risk of the condition.

Geng DF, Jin DM, Wu W, Xu Y, Wang JF (2010) Angiotensin receptor blockers for prevention of new-onset type 2 diabetes: a meta-analysis of 59,862 patients. *Int J Cardiol* [Epub ahead of print]

### HEART

#### Controversies in CV management of T2D

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

- Achieving theoretically ideal values of blood pressure (BP), lipids and blood glucose levels in people with T2D through intensive pharmacological control comes at a cost to the individual with the condition.
- This article reviewed current thinking and research regarding the pros and cons of pharmacological management of people with T2D.
- Intense lipid control is explored, with the authors concluding that, thus far, therapy has worked in achieving reductions in LDL-cholesterol, albeit with a small increase in new diabetes.
- A summary is given on “what is the ideal systolic BP in people with T2D?”, exploring current guidance and research data, and highlighting that tight control can be associated with renal complications.
- The authors discuss tight glycaemic control with regard to glucotoxicity versus lipotoxicity, and then move on to the benefits and adverse side-effects of some antidiabetes drugs, such as hypoglycaemia and weight gain.
- A multifactorial approach to the management of CVD in people with T2D is explored, with discussion of the STENO-2 trial.
- Further controversies are then covered, including heart failure and thiazolidinediones, cardiomyopathy, and coronary heart disease, culminating in a comprehensive discussion of possible future controversies and benefits regarding the incretin mimetics.
- The authors concluded that there should be a policy of flexible goals in CV management of people with T2D.

Opie LH, Yellon DM, Gersh BJ (2010) Controversies in the cardiovascular management of type 2 diabetes. *Heart* **97**: 6–14

## CIRCULATION

### BARI 2D: Improved health status following treatment for IHD and T2D

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

- When comparing treatments, health status is a key outcome measure, especially when mortality does not differ significantly.
- The BARI-2D (Bypass Angioplasty Revascularization Investigation 2 Diabetes) Study Group randomised 2368 people with T2D and stable ischaemic heart disease (IHD) to: (a) prompt revascularisation versus standard medical treatment, and (b) insulin sensitisation versus insulin provision. Randomisation was stratified by the intended method of revascularisation, coronary bypass graft surgery or percutaneous coronary intervention.
- Health status was evaluated using the Duke Activity Status Index (DASI) and RAND Energy, Health Distress and Self-Rated Health Scales at baseline and annually thereafter.
- From baseline to 1 year, health status improved significantly in each group ( $P < 0.001$ ).
- Compared with standard medical treatment, prompt revascularisation was associated with significantly greater improvements in DASI (1.32 points;  $P < 0.001$ ), Energy (1.36 points;  $P = 0.02$ ), Self-Rated Health (1.77 points;  $P = 0.007$ ) but not Health Distress ( $-0.47$ ;  $P = 0.46$ ).
- Prompt coronary revascularisation was found to be associated with a statistically significant improvement in health status, compared with standard medical treatment, in people with T2D and stable IHD.

Brooks MM, Chung SC, Helmy T et al (2010) Health status after treatment for coronary artery disease and type 2 diabetes mellitus in the Bypass Angioplasty Revascularization Investigation 2 Diabetes trial. *Circulation* **122**: 1690–9

## INTERNATIONAL JOURNAL OF CARDIOLOGY

### Androgen deficiency: Predictor of CV mortality in T2D?

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

- This study explored the prevalence and prognostic implications of deficiencies in total and free testosterone (TT and FT) and dehydroepiandrosterone sulphate (DHEAS) in 153 men with T2D and stable coronary artery disease (CAD).

- Serum FT was estimated (eFT). Deficiencies in TT, eFT and DHEAS were found in 22%, 33% and 77% of people, respectively. There were 43 cardiovascular (CV) deaths during follow-up (median 19 months).
- Four independent predictors of CV mortality were identified: deficiencies in TT and eFT, high plasma N-terminal pro-B-type natriuretic peptide, and high serum high sensitivity C-reactive protein.
- In men with T2D and stable CAD, testosterone and DHEAS deficiencies were associated high CV mortality. Ponikowska B, Jankowska EA, Maj J et al (2010) Gonadal and adrenal androgen deficiencies as independent predictors of increased cardiovascular mortality in men with type II diabetes mellitus and stable coronary artery disease. *Int J Cardiol* **143**: 343–8

## AMERICAN JOURNAL OF HYPERTENSION

### Serum cystatin C and hypertension incidence in T1D

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

- The authors examined the association of serum cystatin C with the incidence of hypertension in people with T1D.
- A cumulative incidence of hypertension was measured over a 15-year period in participants from

the Wisconsin Epidemiologic Study of Diabetic Retinopathy.

- Hypertension was defined as a systolic blood pressure (BP) of  $\geq 140$  mmHg and/or diastolic BP of  $\geq 90$  mmHg.
- After controlling for hypertension risk factors, serum cystatin C was associated with a 15-year incidence of hypertension (hazard ratio per mg/L of cystatin C, 3.43; 95% confidence interval, 1.36–8.63).
- The authors concluded that these findings show a relationship between serum cystatin C and the incidence of hypertension in T1D.

Sahakyan K, Klein BE, Lee KE et al (2011) Serum cystatin C and the incidence of hypertension in type 1 diabetes mellitus. *Am J Hypertens* **24**: 59–63

## AMERICAN JOURNAL OF CARDIOLOGY

### Metformin therapy beneficial in CHF and T2D?

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

- This study aimed to assess the use of metformin therapy in people with T2D and chronic heart failure (CHF).
- Using a population-based cohort study, 422 people (mean age 75.4 years) with T2D and CHF between 1994 and 2003 receiving oral

antidiabetes therapies, but not insulin, were identified.

- Differences in all-cause mortality were assessed between those taking sulphonylurea (SU) monotherapy ( $n=217$ ), metformin monotherapy ( $n=68$ ) and combination therapy ( $n=137$ ).
- Fewer deaths occurred in metformin users, alone or in conjunction with SU, compared with SU monotherapy at 1 year, and over long-term follow-up.
- It was concluded that metformin may be beneficial in people with CHF and T2D.

Evans JM, Doney AS, AlZadjali MA et al (2010) Effect of Metformin on mortality in patients with heart failure and type 2 diabetes mellitus. *Am J Cardiol* **106**: 1006–10

**“Prompt coronary revascularisation was found to be associated with a statistically significant improvement in health status compared with standard medical treatment in people with T2D and stable ischaemic heart disease.”**