Cardiovascular and major journals

Time to stress those New Year's Resolutions again!

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We know that smoking is bad for people. Several of my patients steadfastly resolved to give up smoking in the New Year; however, I note that many have failed already. The study by Pan et al (summarised alongside) is a meta-analysis of 89 large cohort studies, specifically in people with diabetes, comparing mortality in smokers, non-smokers and, most interesting of all, ex-smokers. The mortality studies alone had 1 132 700 participants with 109 966 mortality events. This is by far the largest such analysis reported. The data were adjusted for average age which, although not clearly stated, can be assumed to be "middle-aged" from the discussion.

As expected, smoking was associated with an increase in total mortality. The excess risk was 55% for all-cause and 49% for cardiovascular (CV) mortality. Coronary heart disease (CHD) risk was increased by 51% and stroke risk by 54%. The excess risk of peripheral vascular disease was 115% and for heart failure it was 43%.

The good news is that former smokers of relatively short duration had a significant reduction in the relative risk of mortality and CV events in comparison to current smokers. The excess risk in former smokers was attenuated to only 19% for total mortality, 15% for CV mortality, 9% for total CV disease and 14% for CHD. There was no significant increase in stroke risk.

The authors estimate that 14.6% of deaths in men and 3.3% in women with diabetes worldwide were attributable to smoking. These figures were likely to be an underestimation given the methodology behind them.

Hopefully, the benefits of smoking cessation can be given a further fillip with this report. The results should be persuasive for our patients with diabetes and encourage healthcare professionals to redouble their efforts to help them quit smoking.

Smoking is commonly associated with other unhealthy lifestyle factors such as poor diet, excessive alcohol intake and physical inactivity (Chiolero et al, 2006). Other papers attest to continued attention to these factors. Intriguingly, and perhaps comfortingly, the article by Gepner et al (summarised on the next page) indicates that moderate alcohol consumption does not increase CV risk and indeed may be slightly protective. The dose in this study was only 1–2 units per day, which is at the level of the upper limit of 14 units per week recently recommended by the Chief Medical Officer (Department of Health, 2015). ■

Chiolero A, Wietlisbach V, Ruffieux C et al (2006) Clustering of risk behaviors with cigarette consumption: a population-based survey. *Prev Med* **42**: 348–53

Department of Health (2015) *UK Chief Medical Officers' Alcohol Guidelines Review: Summary of the proposed new guidelines*. DH, London. Available at: http://bit.ly/1RxepPk (accessed 22.02.16)

Circulation

Smoking and excess mortality risk in people with diabetes

Readability	✓✓✓✓
Applicability to practice	✓✓✓✓
WOW! Factor	✓✓✓✓

1 In this systematic review and meta-analysis, the authors analysed a total of 89 cohort studies to describe the links between smoking and mortality and cardiovascular (CV) outcomes in people with diabetes.

2 Among 1 132 700 people, the relative risk (RR) of death from any cause was 1.55 (95% confidence interval [CI], 1.46–1.64) in current smokers compared with current non-smokers.

3 However, total mortality risk was attenuated in former smokers, in whom the pooled RR was 1.19 (95% CI, 1.11–1.28) compared with never-smokers.

4 For CV mortality, the pooled RR was 1.49 (95% CI, 1.29–1.71). The RR for ex-smokers compared with never-smokers was 1.15 (95% CI, 1.00–1.32).

5 Regarding other CV events, the RR was 1.44 for CV disease (CVD), 1.51 for coronary heart disease (CHD) and 1.54 for stroke. Compared with never-smokers, ex-smokers had a moderately increased risk of CVD (RR, 1.09) and CHD (RR, 1.14), but no significant increase for stroke.

6 Using recent data on smoking rates worldwide, the authors estimated the absolute risk difference for all-cause mortality to be 117 and 286 per 10 000 person-years in T1D and T2D, respectively.

6 Overall, among the global diabetes population, an estimated 14.6% of deaths in men and 3.3% in women were attributable to smoking.

Pan A, Wang Y, Talaei M, Hu FB (2015) Relation of smoking with total mortality and cardiovascular events among patients with diabetes mellitus: a meta-analysis and systematic review. *Circulation* **132**: 1795–804

Ann Intern Med

Moderate alcohol intake improves cardiometabolic risk factors in T2D

Readability ✓✓✓✓
Applicability to practice ✓✓✓✓
WOW! Factor ✓✓✓✓

1 In this randomised controlled trial, 224 people with well-controlled T2D, all non-drinkers at baseline, were assigned in a 1:1:1 ratio to consume 150 mL of either red wine, white wine or water with their evening meals for 2 years.

2 No attempt to restrict calories was made, but advice was given to follow a Mediterranean diet. Participants in the wine groups ended up drinking wine on around 80% of the study days.

3 After 2 years, all three groups had similar, modest reductions in waist circumference (mean, 1.48 cm) and body weight (1.4 kg).

4 Both wine groups had improvements in glycaemic markers compared with the water group; however, these were only significant in the white wine group (mean fasting plasma glucose fell by 1 mmol/L and HOMA-IR score increased by 1.2 (P=0.004 and P=0.019, respectively).

5 Compared with the water group, HDL-cholesterol levels increased by 0.05 mmol/L and total:HDL ratio decreased by 0.27 in the red wine group but not the white wine group. Triglyceride levels improved in both wine groups.

6 Some participants were assessed for *ADH1B* genotype, which affects the speed of alcohol metabolism. Wine had a greater effect on glycaemic variables in the slow metabolisers than fast metabolisers.

7 The authors conclude that moderate wine consumption is safe in T2D and may even reduce cardiometabolic risk.

Gepner Y, Golan R, Harman-Boehm I et al (2015) Effects of initiating moderate alcohol intake on cardiometabolic risk in adults with type 2 diabetes: a 2-year randomized, controlled trial. *Ann Intern Med* **163**: 569–79

J Am Coll Cardiol

High blood pressure increases the risk of developing T2D

Readability ✓✓✓✓
Applicability to practice ✓✓✓✓
WOW! Factor ✓✓✓

1 These authors used records from the UK CPRD (Clinical Practice Research Datalink) to determine the association between blood pressure (BP) and risk of developing T2D in 4 132 138 people without pre-existing diabetes or cardiovascular disease.

2 Over a median follow-up of 6.8 years, elevated BP at baseline was associated with a greater incidence of new-onset diabetes. Adjustment for age, gender and BMI attenuated the risk, but the association remained, with very narrow confidence intervals (CIs).

3 Each 20-mmHg increase in systolic BP (SBP) was associated with an adjusted hazard ratio (HR) of 1.58 (95% CI, 1.56–1.59) for new diabetes, and each 10-mmHg increase in diastolic BP had an HR of 1.52 (95% CI, 1.51–1.54).

4 Adjustment for smoking, antihypertensive therapy and lipid-lowering therapy had little effect on the results. The strength of the association declined with age and increasing BMI.

5 These findings were also confirmed in a meta-analysis of 285 664 people and 17 388 new diagnoses of diabetes. In this, the pooled relative risk of new-onset diabetes per 20-mmHg increase in SBP was 1.77 (95% CI, 1.53–2.05).

6 While causality could not be assessed in this study, the findings suggest that individual and population-level efforts to lower BP might also lower the risk of diabetes, and the authors call for a randomised controlled trial to assess this.

Emdin CA, Anderson SG, Woodward M, Rahimi K (2015) Usual blood pressure and risk of new-onset diabetes: evidence from 4.1 million adults and a meta-analysis of prospective studies. *J Am Coll Cardiol* **66**: 1552–62

Am J Cardiol

High triglycerides and low HDL increase CHD risk even in people with low LDL levels

Readability ✓✓✓✓
Applicability to practice ✓✓✓✓
WOW! Factor ✓✓✓

1 These authors sought to determine the effects of "metabolic dyslipidaemia" (high triglyceride [TG] and low HDL-cholesterol levels) on future coronary heart disease (CHD) risk in people with diabetes.

2 Therefore, they studied 28 318 people with diabetes but no known history of CHD, all with LDL-cholesterol levels <2.6 mmol/L.

3 Low HDL levels were defined as ≤1.3 mmol/L in women and ≤1.0 mmol/L in men. High TG levels were defined as ≥1.7 mmol/L in both genders.

4 Of the cohort, 25.7% had normal HDL and TG levels, 15.8% had normal HDL and high TG, 14.3% had low HDL and normal TG, and 44% had low HDL and high TG (metabolic dyslipidaemia).

5 People with metabolic dyslipidaemia had the highest age-adjusted CHD event rate (12.7 and 19.0 per 1000 person-years for women and men, respectively).

6 After adjustment for age, gender, ethnicity, hypertension, smoking, statin use, duration of diabetes and HbA$_{1c}$, compared with participants with normal HDL and TG levels, people with metabolic dyslipidaemia had an increased risk of CHD (hazard ratio, 1.35 in women and 1.62 in men).

6 Aggressive CHD prevention strategies are needed to address this high-risk subset of the population with diabetes.

Rana JS, Liu JY, Moffet HH et al (2015) Metabolic dyslipidemia and risk of coronary heart disease in 28,318 adults with diabetes mellitus and low-density lipoprotein cholesterol <100 mg/dL. *Am J Cardiol* **116**: 1700–4

> "*Overall, among the global diabetes population, an estimated 14.6% of deaths in men and 3.3% in women were attributable to smoking.*"