

# CVD, diabetes complications and care processes in England and Wales

Stay abreast of the latest news that could influence diabetes care. Pam Brown, Editor-in-Chief of *Diabetes & Primary Care*, rounds up the latest national and international news and clinical research stories.

## Heart failure audit – doing better but still room for improvement

More people with heart failure (HF) and reduced left ventricular ejection fraction admitted to hospital are being prescribed all three disease-modifying drugs (angiotensin-converting enzyme inhibitors/angiotensin receptor blockers, beta-blockers and mineralocorticoid receptor antagonists) at discharge, according to the latest *National Heart Failure Audit*, published in August (Donkor et al, 2017). Those receiving all three drug classes rose from 35% to 53% over the last six years, with 87% prescribed beta-blockers and 53% mineralocorticoid antagonists in 2015/16.

More than 90% had an up-to-date echocardiogram and 80% were seen by an HF specialist. HF nurses are playing an increased role, reviewing 33% of people admitted to general rather than cardiology wards (up from 24% previously). Inpatient mortality is lower than before, at 8.9% (previously 9.6%), but it is agreed this rate remains too high, and there is significant regional variability in all measures.

This audit examined data from 66 695 admissions for HF in England and Wales between April 2015 and March 2016, representing 82% of all HF admissions in England and 77% in Wales.

## Cognitive performance changes

Type 2 diabetes is associated with a variety of changes in cognitive function. Cross-sectional data from the Maastricht study suggest that early tight blood-pressure and glycaemic control are associated with reductions in

diabetes-associated decline in cognitive performance (Geijselaers et al, 2017).

Differences in both processing speed and executive function were linked to hyperglycaemia, while processing speed was linked, to a lesser extent, to blood pressure. None of the factors reviewed (hyperglycaemia [assessed by fasting glucose, post-load glucose, HbA<sub>1c</sub> and tissue advanced glycation end-products], insulin resistance and blood pressure [including 24-hour ambulatory pressures, their weighted standard deviations and use of antihypertensive medication]) explained the differences in memory.

Among 2531 people who completed neuropsychological testing (mean age, 60±8 years, 52% male and 666 with type 2 diabetes), those with type 2 diabetes performed worse in all cognitive domains (memory, processing speed, executive function and attention) compared to those without diabetes, after adjustment for age, gender and education. Although impairments are mild, they may result in forgetfulness and loss of concentration.

## Meta-analysis of metformin and cardiovascular disease

A new meta-analysis of randomised controlled trials of metformin's impact on cardiovascular (CV) outcomes failed to demonstrate statistically significant benefits, although all outcomes explored, except stroke, favoured metformin (Griffin et al, 2017). The risk ratios were 0.96 (95% confidence interval [CI], 0.84–1.09) for all-cause mortality, 0.97 (0.80–1.16) for CV death, 0.89 (0.75–1.06) for myocardial infarction, 0.81 (0.50–1.31) for peripheral

vascular disease and 1.04 (0.73–1.48) for stroke. The authors state that their results reflect absence of evidence rather than absence of effect.

With large CV outcome trials demonstrating benefit from newer drugs, the impact of metformin on CV disease remains uncertain, as many argue that the UKPDS, which contributed much of the data in this meta-analysis, did not provide a definitive answer, and there remain concerns regarding the increased mortality rate when metformin was added to sulfonylurea therapy in UKPDS. The authors propose how additional data might be collected to try to assess metformin's CV effects, as it is unlikely that a placebo-controlled CV outcome trial will ever be undertaken.

## Blindness from diabetes almost halved in Wales

A retrospective analysis of certifications has demonstrated a reduction in sight impairment and severe sight impairment (SSI; blindness) due to diabetic retinopathy (DR) in Wales: from 82.4 per 100 000 in 2007/08 to 46.9 per 100 000 in 2014/15 (Thomas et al, 2017). There was a 49.4% reduction in new SSI certifications, from 31.3 to 15.8 per 100 000, in the same time period. The authors acknowledge the limitations of the certification process and the increase in the number of people with known diabetes of just under 40% (an extra 52 229) in Wales over the time period.

Wales has had a retinopathy screening programme since 2003 and all people with diabetes over 12 years of age have been offered screening since the end of 2006. The study sought to determine whether this had

any impact. However, the authors conclude that, although earlier identification by the screening programme and direct referral for treatment of sight-threatening DR is likely to have been beneficial, other developments, such as new diabetes treatments and new treatments for DR and maculopathy, are also likely to have contributed, as well as improved awareness of DR in primary care, which may have prompted improved diabetes care.

### NICE propose diabetes prevention indicator for QOF in England

NICE have proposed a Quality and Outcomes Framework indicator that would incentivise practices to refer people to the Healthier You: NHS Diabetes Prevention Programme (NICE, 2017). People confirmed as being at high risk of developing type 2 diabetes (high risk score and HbA<sub>1c</sub> 42–47 mmol/mol or fasting plasma glucose 5.5–6.9 mmol/L) should have their risk and how to modify it discussed, and receive the offer of referral to a local, evidence-based, quality-assured, intensive lifestyle-change programme. However, despite the wording of the proposed indicator, to qualify, people must be referred to the NHS England-commissioned NHS Diabetes Prevention Programme and not to any locally developed programmes.

As the Healthier You programme is rolled out, uptake of the offered places has been low, with recent data revealing that just over 7000 of the 20 000 places offered had been filled (NHS England, 2016).

### Cost of diabetes medicines

The annual rise in costs of diabetes medicines in England appears to be slowing, with NHS spend in 2016/17 up only £27 million, at £974 million (11% of the prescribing budget; NHS Digital, 2017). This compares with increases of £88 million and £65 million in the previous 2 years. Insulins accounted for £349.1 million, while diagnostic and monitoring devices accounted for £187 million.

### Food for thought

#### Ideas to explore in practice arising from these news stories

##### Cognitive performance

- Do we ask about early signs of cognitive impairment in people with type 2 diabetes?
- What is the most useful early screening test in primary care?

##### Metformin and cardiovascular disease (CVD)

- Are people with type 2 diabetes and established CVD receiving glucose-lowering therapies with evidence of reduction in CVD mortality and events?

##### Diabetic retinopathy (DR)

- Do we know which of your patients have DR and are they as tightly controlled as appropriate?
- Do we consider DR when undertaking reviews and helping people set glycaemic targets?
- Do we have patients with diabetic eye disease who have missed their ophthalmology follow-up?

##### Non-diabetic hyperglycaemia (NDH)

- Do we code people diagnosed with NDH? Are all team members using the same code to facilitate recalls?
- Have all people with NDH received lifestyle advice or referral to a local programme?
- What proportion of those diagnosed more than 1 year ago have had annual testing? What proportion progress to diabetes?

### PURE study – fat, fruit and legumes associated with reduced mortality

Initial results of the PURE (Prospective Urban Rural Epidemiology) study looking at the association of nutrient intakes with CV disease and mortality suggest that fat intake is associated with lower total mortality (Miller et al, 2017; Toledo and Martínez-González, 2017). The highest versus lowest quintile of total fat showed a hazard ratio (HR) of 0.77 (95% CI, 0.67–0.87) for total mortality but no significant reduction in myocardial infarction or CV death.

Although total carbohydrate intake was associated with increased mortality, fruits, raw vegetables and legumes were associated with reduced non-CV and total mortality, with the lowest total mortality in those consuming 3–4 portions daily (HR, 0.78 [95% CI, 0.69–0.88]).

Food frequency questionnaires were used to estimate nutrient intakes, collecting an average of 7.4 years' data from more than 135 000 people from low- and middle-income populations in 18 countries across five continents. ■

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