

The old and the new



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Type 2 diabetes is a rapidly growing public health challenge at all ages, but especially in people over the age of 65. In the US, people ≥ 65 years have almost three times the risk of developing diabetes compared to adults under 45 years of age (Centers for Disease Control and Prevention, 2014). In the UK, our growing population of older people make a significant contribution to our diabetes epidemic and especially our workload. To help us manage the complex challenges posed by older people with diabetes, the April 2017 issue of *Diabetes Care* provides a useful collection of reviews that explore important aspects of safe and evidence-based care, and re-open the debate on glycaemic goals and hypoglycaemia risks in this group. Most of these papers are open access.

Pathophysiology, heterogeneity and overtreatment

Although aging results in both decreased insulin secretion and insulin sensitivity, studies suggest it is the impaired beta-cell function resulting in decreased insulin secretion that has most impact on hyperglycaemia (Lee and Halter, 2017). Several factors impact on the development of insulin resistance in older people and decreased physical activity, obesity and relative loss of lean muscle, rather than aging alone, have all been shown to impact (Karakelides et al, 2010). Postprandial hyperglycaemia significantly impacts HbA_{1c}. Insulin resistance and glycaemic control are often best addressed by lifestyle changes, even in older people.

Perhaps the biggest challenge we face in type 2 diabetes management in people over the age of 65 is the heterogeneity of the population; there are those with late-onset and short-duration disease and those who have had the condition for 30 years or more, and all durations in between. We meet those with good underlying health (functionally independent) well into their eighth decade, and those with significant comorbidities (functionally dependent) even in their 60s, including those who fit the criteria for “frail” (International Diabetes Federation, 2013). Many will have cardiovascular disease (CVD), renal impairment or both, while some

will have so far escaped significant comorbidities and complications. This heterogeneity makes it important but challenging to help older people make decisions about glycaemic targets and therapy choices and individualise approaches to care. Using the American Diabetes Association/European Association for the Study of Diabetes “Approach to management” diagram (Inzucchi et al, 2015) during consultations can help people with diabetes match outcomes and impact of care to their needs and expectations.

Older people are more at risk of severe hypoglycaemia than their younger counterparts, and hypoglycaemia has more impact with advancing age. Much has been written about individualisation and relaxing glycaemic targets in older populations (Bloomgarden et al, 2017; Pogach et al, 2017), but we are reminded that if good control can be achieved without increasing risk of hypoglycaemia, as is possible with other drugs, then there can be microvascular and mortality benefits, even in the elderly (Korytkowski and Forman, 2017). This has even been reported in trials such as ACCORD and VADT, which are popularly cited as demonstrating the dangers of tight control (Zoungas et al, 2017). Equally, hypoglycaemia remains a significant risk in everyone treated with sulfonylureas and insulin, irrespective of the HbA_{1c} achieved, highlighting that solely relaxing targets does not necessarily diminish risk (Bloomgarden et al, 2017; Munshi et al, 2017). In those aged 65 or over, overtreatment is a common issue (Pogach et al, 2017), and last year’s audit published in the *Journal* (Seidu, 2016) encouraged many of us to find older people still taking gliclazide and other inappropriate drugs despite HbA_{1c} values < 48 mmol/mol (6.5%).

Just as older people can be vulnerable to significant fluid and electrolyte loss when treated with sodium–glucose co-transporter 2 (SGLT2) inhibitors, fluid loss can be significant if glucose levels are uncontrolled and above the renal threshold. Poor control results in osmotic symptoms, which impair quality of life, and in frail older people with poor mobility can result in falls, fractures and loss of dignity – not what any of us would want for our own old age. Every time we are tempted to

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accept HbA_{1c} values of more than 64 mmol/mol (8%) in an older person, let’s ask ourselves whether this represents individualised care or our clinical inertia. Let’s instead consider whether better control can be achieved without using drugs that cause hypoglycaemia. In some cases, revisiting adherence and lifestyle can make a significant difference.

Type 2 diabetes is associated with around a doubling of the risk of developing dementia (Alzheimer’s disease and vascular dementias) and all cognitive dysfunction impacts on diabetes care (Munshi, 2017). Cognitive dysfunction includes impairment of a range of mental processes, which impact differently on how people cope with their diabetes. Those with type 1 diabetes demonstrate decreased mental flexibility and slowing of mental speed, while those with type 2 diabetes more commonly have declines in executive function, learning, memory and attention. People with dementia and memory loss have difficulty remembering to take medication, eat regularly or attend clinic visits. More subtle findings, such as stubbornness and unwillingness to change, may be early signs of cognitive dysfunction; difficulty stopping old behaviours and starting new behaviours may cause people to refuse new therapy and cope poorly with medication changes (Munshi, 2017). Sudden worsening of control or poor medication adherence should encourage us to review cognitive function and to look for depression.

New additions to *Diabetes & Primary Care*

As my generation retire and new healthcare professionals take over the delivery of primary care diabetes services, I believe it is a good time to revisit the landmark studies and to help future generations understand how and why they shaped practice. There is otherwise a real danger that myths, such as “tight glycaemic control is dangerous” based on the ACCORD study, persist and go unchallenged. In the first of the “Studies that changed practice” (page 61), we provide a concise summary of the most significant papers from the UKPDS (UK Prospective Diabetes Study), and Colin Kenny helps us understand their impact on our clinical practice.

As well as understanding key messages from the landmark trials, it is important that we have an easy

way to stay abreast of international and national diabetes news and papers that could influence our practice. *Diabetes Distilled*, PCDS’s free electronic newsletter, discusses several important papers each month and, from this issue, we’ll share important news stories and papers in our news pages.

We hope you found the first in our new series “How to diagnose, manage and monitor albuminuria” (Gadsby, 2017) useful and that the algorithm has found a place on consulting room notice boards. This issue, Jane Diggle helps clarify “How to diagnose and monitor CKD” on page 59. The children and young people with diabetes learning module on page 79 focuses on aspects of management particularly relevant to primary care. Completing the e-learning module online at www.diabetesonthenet.com/cpd, including reflecting on your practice, will give you the chance to gain a CPD certificate for your appraisal folder.

I hope each of us finds something in this issue that helps us do an even better job of looking after people with diabetes. As always, we welcome your feedback to dpc@omniamed.com. ■

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Centers for Disease Control and Prevention (2014) *National Diabetes Statistics Report: Estimates of Diabetes and Its Burden in the United States*. Department of Health and Human Services, Atlanta, GA, USA

Gadsby R (2017) How to diagnose, manage and monitor ACR. *Diabetes & Primary Care* **19**: 13

International Diabetes Federation (2013) *Managing older people with Type 2 diabetes. Global guidelines*. IDF, Brussels, Belgium

Inzucchi S, Bergenstal RM, Buse JB (2015) Management of hyperglycemia in type 2 diabetes, 2015: A patient-centered approach. Update to a position statement of the American Diabetes Association and the European Association for the Study of Diabetes. *Diabetes Care* **38**: 140–9

Karakelides H, Irving BA, Short KR et al (2010) Age, obesity, and sex effects on insulin sensitivity and skeletal muscle mitochondrial function. *Diabetes* **59**: 89–97

Korytkowski MT, Forman DE (2017) Management of atherosclerotic cardiovascular disease risk factors in the older adult patient with diabetes. *Diabetes Care* **40**: 476–84

Lee PG, Halter JB (2017) The pathophysiology of hyperglycemia in older adults: clinical considerations. *Diabetes Care* **40**: 444–52

Munshi MN (2017) Cognitive dysfunction in older adults with diabetes: what a clinician needs to know. *Diabetes Care* **40**: 461–67

Munshi MD, Slyne, C, Segal, AR et al (2017) Liberating A1c goals in older adults may not protect against the risk of hypoglycaemia. *J Diabetes Complications* 14 Mar [Epub ahead of print]

Pogach, L, Tseng CL, Soroka O et al (2017) A proposal for an out-of-range glycemic population health safety measure for older adults with diabetes. *Diabetes Care* **40**: 518–25

Seidu S (2016) The easy-to-do audit series: Glycaemic control in older people with type 2 diabetes. *Diabetes & Primary Care* **18**: 60–2

Zoungas S, Arima H, Gerstein HC et al (2017) Effects of intensive glucose control on microvascular outcomes in patients with type 2 diabetes. *Lancet Diabetes Endocrinol* 29 Mar [Epub ahead of print]

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