

SGLT2i	Sodium–glucose cotransporter-2 inhibitor(s)
TZD	Thiazolidinedione
UACR	Urinary albumin/creatinine ratio

Introduction

Type 2 diabetes is a chronic complex disease and management requires multifactorial behavioural and pharmacological treatments to prevent or delay complications and maintain quality of life (Fig. 1). This includes management of blood glucose levels, weight, cardiovascular risk factors, comorbidities and complications. This necessitates that care be delivered in an organised and structured way, such as described in the chronic care model, and includes a person-centred approach to enhance engagement in self-care activities [1]. Careful consideration of social determinants of health and the preferences of people living with diabetes must inform individualisation of treatment goals and strategies [2].

This consensus report addresses the approaches to management of blood glucose levels in non-pregnant adults with type 2 diabetes. The principles and approach for achieving this are summarised in Fig. 1. These recommendations are not generally applicable to individuals with diabetes due to other causes, for example monogenic diabetes, secondary diabetes and type 1 diabetes, or to children.

Data sources, searches and study selection

The writing group members were appointed by the ADA and EASD. The group largely worked virtually with regular teleconferences from September 2021, a 3 day workshop in January 2022 and a face-to-face 2 day meeting in April 2022. The writing group accepted the 2012 [3], 2015 [4], 2018 [5] and 2019 [6] editions of this consensus report as a starting point. To identify newer evidence, a search was conducted on PubMed for RCTs, systematic reviews and meta-analyses published in English between 28 January 2018 and 13 June 2022; eligible publications examined the effectiveness or safety of pharmacological or non-pharmacological interventions in adults with type 2 diabetes. Reference lists in eligible reports were scanned to identify additional relevant articles. Details of the keywords and the search strategy are available at <https://data.mendeley.com/datasets/h5rcnxpk8w/2>. Papers were grouped according to subject and the authors reviewed this new evidence. Up-to-date meta-analyses evaluating the effects of therapeutic interventions across clinically important subgroup populations were assessed in terms of their credibility using relevant guidance [7, 8]. Evidence appraisal was informed by the Grading of Recommendations Assessment, Development and Evaluation (GRADE) guidelines on the formulation of clinical practice recommendations [9, 10]. The draft consensus

recommendations were evaluated by invited reviewers and presented for public comment. Suggestions were incorporated as deemed appropriate by the authors (see Acknowledgements). Nevertheless, although evidence based with stakeholder input, the recommendations presented herein reflect the values and preferences of the consensus group.

The rationale, importance and context of glucose-lowering treatment

Fundamental aspects of diabetes care include promoting healthy behaviours, through medical nutrition therapy (MNT), physical activity and psychological support, as well as weight management and tobacco/substance abuse counseling as needed. This is often delivered in the context of diabetes self-management education and support (DSMES). The expanding number of glucose-lowering interventions—from behavioural interventions to pharmacological interventions, devices and surgery—and growing information about their benefits and risks provide more options for people with diabetes and providers but complicate decision making. The demonstrated benefits for high-risk individuals with atherosclerotic CVD, heart failure (HF) or chronic kidney disease (CKD) afforded by the glucagon-like peptide-1 receptor agonists (GLP-1 RA) and sodium–glucose cotransporter-2 inhibitors (SGLT2i) provide important progress in treatment aimed at reducing the progression and burden of diabetes and its complications. These benefits are largely independent of their glucose-lowering effects. These treatments were initially introduced as glucose-lowering agents but are now also prescribed for organ protection. In this consensus report, we summarise a large body of recent evidence for practitioners in the USA and Europe with the aim of simplifying clinical decision making and focusing our efforts on providing holistic person-centred care.

Attaining recommended glycaemic targets yields substantial and enduring reductions in the onset and progression of microvascular complications [11, 12] and early intervention is essential [13]. The greatest absolute risk reduction comes from improving very elevated glycaemic levels, and a more modest reduction results from near normalisation of plasma glucose levels [2, 14]. The impact of glucose control on macrovascular complications is less certain but is supported by multiple meta-analyses and epidemiological studies. Because the benefits of intensive glucose control emerge slowly while the harms can be immediate, people with longer life expectancy have more to gain from early intensive glycaemic management. A reasonable HbA_{1c} target for most non-pregnant adults with sufficient life expectancy to see microvascular benefits (generally ~10 years) is around 53 mmol/mol (7%) or less [2]. Aiming for a lower HbA_{1c} level than this may have value if it can be achieved safely without significant hypoglycaemia or