Type 2 Diabetes Cardiovascular Renal Metabolic Review Checklist

Medscape UK X Guidelines
Primary Care Hacks

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Consider the following during T2D CVRM shared decision making:

Lifestyle Considerations

- ☐ Identify people at high risk of T2D
- ☐ Assess weight (e.g. BMI or WHR) and discuss individualised weight loss goals as appropriate. Remember to ethnically adjust these goals where indicated[1]
- ☐ Discuss the importance of 24-hour physical behaviours for T2D:[2] sitting/breaking up prolonged sitting, sweating, strengthening, sleep, stepping
- ☐ Strive for remission of T2D if possible,[3] irrespective of weight.[4] Weight loss of 5–10% confers metabolic improvement; weight loss of 10–15% or more can have a disease-modifying effect and lead to remission of T2D[2]

Individualised HbA_{1c} Goals

- ☐ Review the person's current HbA_{1c} and trend, and consider other factors when individualising HbA_{1c} goals, e.g., risks potentially associated with hypoglycaemia and other drug adverse effects; life expectancy; comorbidities; established vascular complications; and patient preference, resources, and support systems[5]
- ☐ See the expert consensus statement on diabetes and frailty for individualising management in older adults and/or adults with frailty and T2D

Kidneys

- ☐ Individualise HbA_{1c} targets in people with diabetic kidney disease. Be aware that all SGLT2is have negligible glucose-lowering effect once eGFR falls below 45 ml/min, so consider adding in an additional glucose-lowering medication such as a GLP-1 RA
- ☐ If eGFR <60 ml/min/1.73 m^2 **or** clinically significant proteinuria (ACR ≥3 mg/mmol) **and** on maximally tolerated dose of ACEi/ARB: consider adding SGLT2i with renal protective benefits,[2] irrespective of HbA_{1c}
  - o see the Primary Care Hack, *Extra-Glycaemic Indications of SGLT2 Inhibitors*
- ☐ In people with T2D and CKD who have persistent albuminuria (ACR >3) despite use of maximally tolerated ACEi/ARB and SGLT2i, consider adding finerenone to reduce the risk of adverse kidney and CV outcomes[6] [7] [8]
- ☐ If CKD present, offer atorvastatin 20 mg for primary or secondary prevention of CVD[9]
- ☐ Offer aspirin or clopidogrel to adults with CKD for the secondary prevention of CVD,[10] but be aware of the risk of bleeding
- ☐ Consider referral as per NICE criteria, or if 5-year risk of requiring renal replacement therapy is >5% (measured using the Four-Variable Kidney Failure Risk Equation)

Blood Pressure

There is considerable debate around optimal BP targets for people living with diabetes, with several conflicting guidelines published

- ☐ For grade 1 hypertension (people with a clinic SBP 140–159 mmHg and/or a clinic DBP 90–99 mmHg), effective lifestyle changes may delay or prevent the need for pharmacological treatment
  - o for information on effective lifestyle changes, see the Primary Care Hack, *Lifestyle Changes for Managing Hypertension*
- ☐ **First instance:** aim for a HBPM average target of <135/85 mmHg (<140/90 mmHg clinic target) in all people[11]
- ☐ **Provided treatment is well tolerated:** then aim for HBPM average of 125/75 mmHg (130/80 mmHg clinic target) or lower in most people[11]
- ☐ **For adults aged >80 years:** consider a clinic BP target of <150/90 mmHg[12]
- ☐ **For people living with T2D:** start drug treatment with an ACEi/ARB,[12] irrespective of age or ethnic background
- ☐ Measure sitting and standing BP in people with hypertension and T2D.[12] In those with a significant postural drop in BP (i.e., ≥20 mmHg systolic and/or ≥10 mm Hg diastolic that occurs on standing[13]), treat to a BP target based on the standing BP

Note: SGLT2is have a modest impact on BP, lowering it by around 4/2 mmHg[14]

Lipids

- ☐ LDL-C targets for people living with T2D:[15]
  - o moderate risk: <2.6 mmol/l
  - o high risk: ≥50% reduction from baseline **and** <1.8 mmol/l
  - o very high risk: ≥50% reduction from baseline **and** <1.4 mmol/l
- ☐ Patient's QRISK3 is ≥10%: offer atorvastatin 20 mg for primary prevention of CVD[9] [16]
- ☐ If LDL-C targets are not achieved on maximally tolerated dose statin, consider combination lipid-lowering therapy e.g., add in ezetimibe, bempedoic acid, PCSK9 inhibitor,[15] or inclisiran
- ☐ Consider icosapent ethyl if the individual has established CVD (secondary prevention) and on statins with fasting TG ≥1.7 mmol/l and LDL-C between 1.04 and ≤2.60 mmol/l[16] [17]
- ☐ For secondary prevention of CVD, offer atorvastatin 80 mg[15]

Continued overleaf...

MASLD

- ☐ Noninvasive tests for liver fibrosis risk may be advisable due to the strong association of T2D with MASLD[18] [19] [20]
- ☐ Consider FIB-4 test to assess for underlying fibrosis risk in people aged <65 years
- ☐ If identified as intermediate or high risk, consider referral to secondary care gastroenterology for transient elastography (FibroScan)
- ☐ Strongly encourage and facilitate weight loss where possible: weight loss 3–5% reduces hepatic steatosis, ≥5–7% can lead to resolution of MASH, and ≥10% improves hepatic fibrosis[21]
- ☐ There is emerging evidence for pioglitazone, SGLTis, GLP-1 RAs, and the dual GLP-1 and GIP receptor agonist tirzepatide for MASLD[2]

Comorbidities and Life Story

- ☐ Consider presence of:
  - CVD or high risk of CVD:[2] [22]
    - ASCVD (i.e. IHD/TIA/stroke/PVD): if present, offer early combination therapy with metformin and an SGLT2i, irrespective of HbA_{1c} [22]
    - all subtypes of HF: if present, offer early combination therapy with metformin and an SGLT2i, irrespective of HbA_{1c} [22]
    - QRISK3 ≥10% and age >40 years, or presence of hypertension, dyslipidaemia, smoking, obesity, or family history (in a first-degree relative) of premature cardiovascular disease: consider early combination therapy with metformin and an SGLT2i, irrespective of HbA_{1c} [22]
  - CKD and proteinuria[2] [22] (see Kidney section)
  - obesity:[2] [22] both SGLT2is and GLP-1 RAs can facilitate weight loss in people living with T2D
  - retinopathy:[22] be aware of the possibility of worsening of pre-existing retinopathy if HbA_{1c} is rapidly lowered
  - OSAHS; these conditions are commonly associated with T2D.[2] [23] Consider using the Epworth sleepiness scale and the STOP–BANG questionnaire to exclude underlying OSAHS
- ☐ Educate women of childbearing age that many medications (e.g. ACEis, ARBs, statins, SGLT2is, and GLP-1 RAs) are contraindicated in pregnancy, and counsel them regarding contraception.[24] [25] If planning pregnancy, refer to pre-pregnancy services
- ☐ Consider age, functional and frailty status, occupation, literacy level, and other social determinants of health during shared decision making[2] [10] [22]

Prescribing Considerations

- ☐ Discuss adherence and if necessary explore barriers/preferences[2] [22] [25]
- ☐ Review history of hypoglycaemia/hypoglycaemia awareness, DVLA adherence, and CBG monitoring where appropriate, and consider CGM in all people with T2D on insulin[2] [22]
- ☐ Sick-day guidance[24] [25]
  - for people with T2D on insulin
  - review the SADMANS mnemonic. Consider temporarily pausing these drugs during any significant intercurrent illness, but remind individuals to restart once they are eating and drinking normally and recovered from their illness
- ☐ SGLT2i or GLP-1 RA commenced:
  - consider reduction in SU or insulin dose. If on insulin, consider cautiously reducing insulin dose, increase CBG monitoring, and contact DSN as required[22] [26] [27]
  - consider adjustment of any dose of diuretic when introducing an SGLT2i[24] [28] [29]
- ☐ Ensure appropriate/optimal prescribing; consider de-intensifying in the context of functional dependence and frailty[30]

MDT Referrals

- ☐ DSMES (e.g. DESMOND or X-Pert)
- ☐ Consider any locally available physical activity referral pathway
- ☐ Regular retinopathy screening
- ☐ Regular foot screening
- ☐ Consider secondary care as required, e.g., diagnostic uncertainty or treatment option advice
- ☐ Consider dietician referral, and psychological counselling for diabetes distress

Coding

- ☐ Code identified conditions as 'priority 1'
- ☐ Do not code 'diabetes resolved'; instead, code 'diabetes in remission'

Follow Up

- ☐ Goal setting—Diabetes UK information prescriptions can help to facilitate goal setting, information sharing, and care planning
- ☐ Set a defined timescale for follow up and consider regular monitoring as clinically indicated
- ☐ Regular monitoring of weight, BP, HbA_{1c}, renal function (both eGFR and urinary ACR), and lipid profile as clinically indicated (at least annually).

ACEi=angiotensin-converting enzyme inhibitor; **ACR**=albumin to creatinine ratio; **ARB**=angiotensin receptor blockers; **ASCVD**=atherosclerotic cardiovascular disease; **BP**=blood pressure; **CBG**=capillary blood glucose; **CGM**=continuous glucose monitoring; **CHF**=congestive heart failure; **CKD**=chronic kidney disease; **CVD**=cardiovascular disease; **CVRM**=cardiovascular, renal, and metabolism; **DBP**=diastolic blood pressure; **DESMOND**=diabetes education and self-management for ongoing and newly diagnosed; **DSMES**=diabetes self-management, education, and support; **DSN**=diabetes specialist nurse; **DVLA**=Driver and Vehicle Licensing Agency; **eGFR**=estimated glomerular filtration rate; **FIB-4**=Fibrosis-4; **GLP-1 RA**=glucagon-like peptide-1 receptor agonist; **HbA_{1c}**=haemoglobin A_{1c}; **HBPM**=home blood pressure monitoring; **HDL-C**=high-density lipoprotein cholesterol; **HF**=heart failure; **HFpEF**=heart failure with preserved ejection fraction; **HFrEF**=heart failure with reduced ejection fraction; **IHD**=ischaemic heart disease; **LDL-C**=low-density lipoprotein cholesterol; **MASH**=metabolic dysfunction-associated steatohepatitis; **MASLD**=metabolic dysfunction-associated steatotic liver disease; **MDT**=multidisciplinary team; **OSAHS**=obstructive sleep apnoea hypopnoea syndrome; **PARS**=Physical Activity Referral Service; **PVD**=peripheral vascular disease; **QRISK3**=Cardiovascular Risk Score 3; **SGLT2i**=sodium–glucose cotransporter-2 inhibitor; **SBP**=systolic blood pressure; **STOP–BANG**=snoring history, tired during the day, observed stop breathing while sleep, high blood pressure, BMI >35 kg/m^2, age >50 years, neck circumference >40 cm, and male gender; **SU**=sulfonylurea; **TIA**=transient ischaemic attack; **TG**=triglyceride; **T2D**=type 2 diabetes; **WHR**=waist to hip ratio.

For references, view this Primary Care Hack online at bit.ly/Hack-CVRM

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