

Type 2 diabetes and COVID-19

Webinar recorded on 8 April 2020; information on COVID-19 at this time is changing rapidly and some information may be outdated

Management priorities for patients with T2D during the COVID-19 outbreak

Chantal Mathieu

Presented on 8 April 2020; information on COVID-19 at this time is changing rapidly and some information may be outdated if viewing at a later date

Speaker disclosures

Chantal Mathieu serves or has served on the advisory panel for Novo Nordisk, Sanofi, Merck Sharp and Dohme Ltd., Eli Lilly and Company, Novartis, AstraZeneca, Boehringer Ingelheim, Hanmi Pharmaceuticals, Roche, Medtronic, ActoBio Therapeutics, Pfizer and UCB. Financial compensation for these activities has been received by KU Leuven; KU Leuven has received research support for CM from Medtronic, Novo Nordisk, Sanofi, Merck Sharp and Dohme Ltd., Eli Lilly and Company, Roche, Abbott, ActoBio Therapeutics and Novartis; CM serves or has served on the speakers bureau for Novo Nordisk, Sanofi, Merck Sharp and Dohme, Eli Lilly and Company, Boehringer Ingelheim, Astra Zeneca and Novartis. Financial compensation for these activities has been received by KU Leuven.

People with diabetes and related comorbidities are at a higher risk of complications from COVID-19



High-risk populations include those:

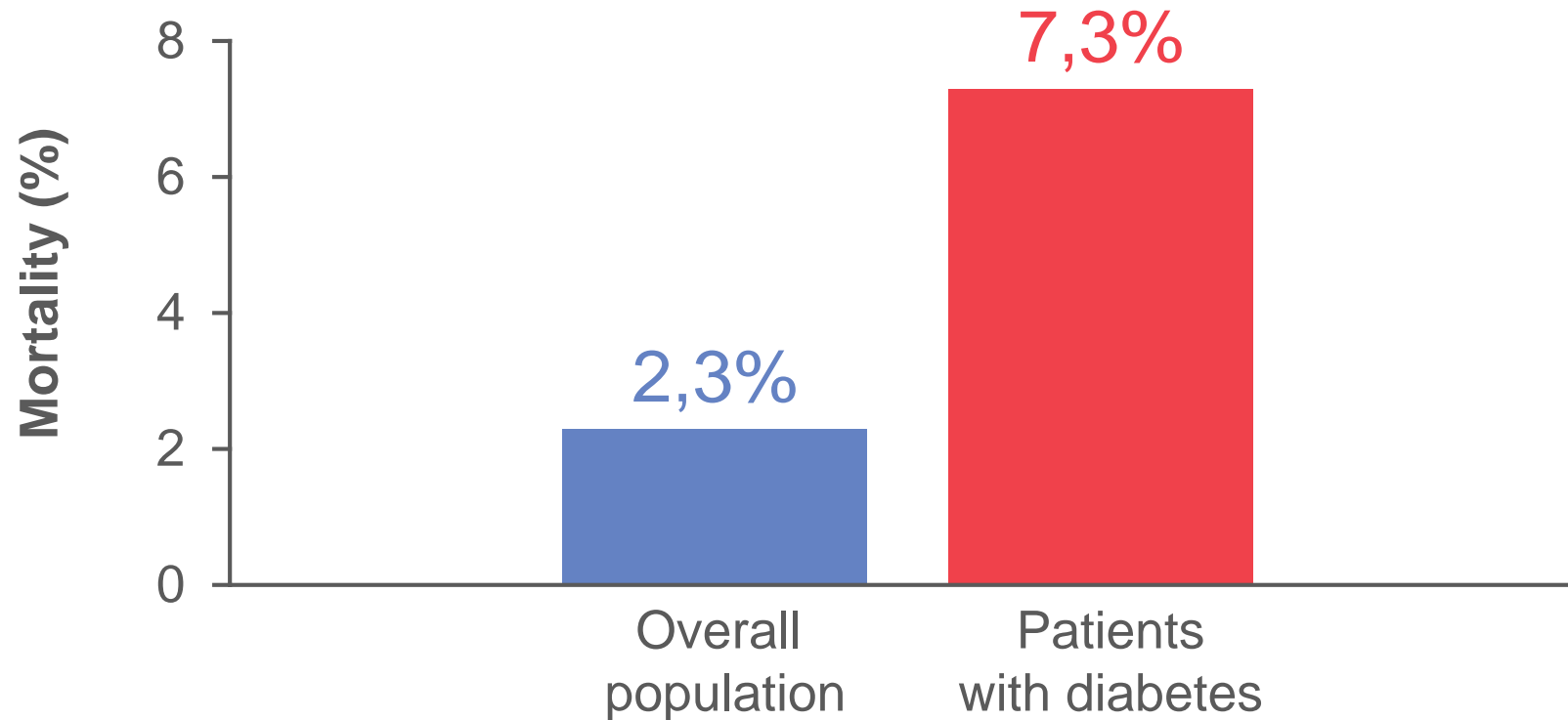
- Aged 65 years and older
- Living in a nursing home or long-term care facility
- With chronic lung disease or moderate–severe asthma
- **With serious cardiovascular disease**
- Who are immunocompromised*
- **With severe obesity** or underlying conditions,[†] including **diabetes, kidney failure** or liver disease
- Who are pregnant[‡]

*Includes those on cancer treatment, who smoke, have had a bone marrow or organ transplant, immune deficiencies, poorly controlled human immunodeficiency virus/acquired immune deficiency syndrome, prolonged use of corticosteroids, and other immune weakening medications; [†]Particularly if not well controlled; [‡]Pregnant women should be monitored as they are known to be at risk with severe viral illness, although to date evidence on COVID-19 has not shown increased risk

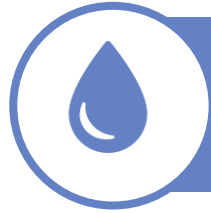
Centers for Disease Control and Prevention. 2020. <https://www.cdc.gov/coronavirus/2019-ncov/specific-groups/people-at-higher-risk.html> (accessed Apr 2020)

COVID-19-related mortality rates are higher in patients with diabetes compared with the general population

A report of 44,672 cases of COVID-19 published by the Chinese Centre for Disease Control and Prevention



Providing optimal care for patients with diabetes during the COVID-19 outbreak



Optimal glycaemic control



CV risk factor and lifestyle management



Adherence to medication



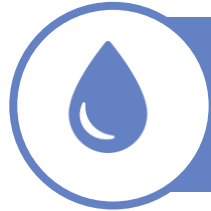
Reassurance and support

**Now is the time
to better educate
patients** on
self-management
of their diabetes
and comorbidities



- General guidance on preventative measures during the COVID-19 outbreak should also be followed

Good glycaemic control may help reduce the risk and severity of COVID-19 infection¹



**Optimal
glycaemic control**



**CV risk factor and
lifestyle management**



**Adherence
to medication**



**Reassurance
and support**

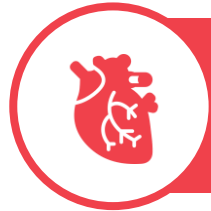
Patients should be advised to:

- Monitor their blood glucose levels more frequently^{1,2}**
- Monitor for signs of hyperglycaemia²**

CV risk factor and lifestyle management are important factors that should not be forgotten during the COVID-19 outbreak



Optimal
glycaemic control



CV risk factor and
lifestyle management



Adherence
to medication



Reassurance
and support

- Special efforts should be made to stabilise patients with co-existing heart and/or kidney disease**
- Nutritional deficiencies should be treated***
- Exercise should be encouraged**, because it is shown to improve immunity
- Vaccinations should be taken** for influenza and pneumonia[†]

*Including protein and vitamin/mineral deficiencies; [†]Vaccinations for pneumonia may decrease the chances of secondary bacterial pneumonia after respiratory viral infection; however, data on the present viral epidemic are not available

There is currently no reason for patients taking NSAIDs to interrupt their treatment during the COVID-19 outbreak¹



Optimal
glycaemic control



CV risk factor and
lifestyle management



Adherence
to medication



Reassurance
and support

NSAIDs

- ❑ **Advise patients to keep taking their NSAIDs** as per approved product information
 - This is particularly important for those taking NSAIDs for chronic diseases¹
- ❑ **Consider all available treatment options** when treating for fever or pain¹
 - Most EU national treatment guidelines recommend paracetamol as a first-line treatment option¹
 - Inform patients that paracetamol, especially if taken repeatedly at high dose, may cause a false rise in glucose sensor values^{*2}

*See the reference for further information
NSAID, non-steroidal anti-inflammatory drug

1. European Medicines Agency. 2020. <https://www.ema.europa.eu/en/news/ema-gives-advice-use-non-steroidal-anti-inflammatories-covid-19> (accessed Apr 2020);

2. EASD e-learning. Tips: Diabetes and COVID-19; Glucose sensors and paracetamol. <https://easd-elearning.org/covid-19/> (accessed Apr 2020)

There is currently no confirmed link between ACEi/ARB treatment and the risk of COVID-19 and its complications¹



Optimal
glycaemic control



CV risk factor and
lifestyle management



Adherence
to medication



Reassurance
and support

Antihypertensive medications

- ❑ Advise patients not to stop or change medications without consulting their HCP¹
 - **Blood pressure control is essential** for managing diabetes and is recommended for protection from kidney- and heart-related complications, even in the absence of high blood pressure¹
 - **Hypertension was the most prevalent comorbidity** reported in patients with COVID-19 infection*²

*Of 1590 patients in China with COVID-19, with or without diabetes

ACEi, angiotensin-converting enzyme inhibitor; ARB, angiotensin receptor blocker

1. Diabetes Canada. Facts about COVID-19 and diabetes. <https://www.diabetes.ca/en-CA/resources/tools---resources/faq-about-covid-19-and-diabetes> (accessed Apr 2020); 2. Guan W *et al.* *Eur Respir J* 2020; doi.org/10.1183/13993003.00547-2020

Patients may be worried about their condition during the COVID-19 outbreak; it is important to provide reassurance



Optimal
glycaemic control



CV risk factor and
lifestyle management



Adherence
to medication



Reassurance
and support

- Recommend that patients speak with friends, family or dedicated helplines** to relieve mental pressures¹
- Direct patients to verified resources** to avoid misinformation
- Ensure your patients are aware and prepared** in case they contract the COVID-19 infection:
 - Sick-day guidance¹
 - Plentiful supply of medication²

1. Diabetes UK. Coronavirus and diabetes. https://www.diabetes.org.uk/about_us/news/coronavirus (accessed Apr 2020);

2. Diabetes Canada. Facts about COVID-19 and diabetes. <https://www.diabetes.ca/en-CA/resources/tools---resources/faq-about-covid-19-and-diabetes> (accessed Apr 2020)

What should be done if a patient with diabetes in your care has COVID-19?

- **Notify the appropriate health authority** in case a person with diabetes develops fever, cough, runny nose or dyspnoea
- **Ensure the affected person is isolated** for 14 days or until the symptoms resolve (whichever is longer)
- **Follow general sick-day guidance for patients with diabetes**
 - The majority of patients have a mild disease and can be managed at home
 - Symptomatic treatment with paracetamol, steam inhalation, etc. can be given

In periods of acute illness, all patients should follow sick-day rules to minimise risk of complications (1)

MONITOR

SEEK ADVICE (from an HCP)

MEDICATIONS

Hydration status: drink plenty of water and try to eat as normal

Blood glucose

- If monitored routinely, **check more frequently** (every 4 hours) and keep records

Check for symptoms of high blood glucose:

- Thirst/dry mouth
- Passing large amounts of urine
- Tiredness
- Weight loss (check every day)

Ketone bodies: if monitoring advised and kit provided

Temperature: every morning and evening

In periods of acute illness, all patients should follow sick-day rules to minimise risk of complications (2)

MONITOR

SEEK ADVICE
(from an HCP)

MEDICATIONS

If unsure what to do¹

If vomiting repeatedly (unable to hold down food/drink for >6 hours)¹

If blood glucose is very high for >24 hours¹

If showing symptoms/signs of DKA²

- Ketones or blood in urine
- Excessive thirst; dehydration
- Polyuria
- Shortness of breath and laboured breathing
- Abdominal pain
- Leg cramps
- Nausea and vomiting
- Mental confusion and drowsiness
- Ketones detected on the breath (fruity smell)

- **DKA occurs in patients with T1D and can occur in T2D at times of severe illness** or, rarely, in those on SGLT2 inhibitor therapy²
- **DKA requires urgent hospital admission²**
- If diagnosed with DKA, **SGLT2 inhibitor therapy should be discontinued immediately³**

DKA, diabetic ketoacidosis; SGLT2, sodium-glucose co-transporter-2; T1D, type 1 diabetes; T2D, type 2 diabetes

1. International Diabetes Foundation. Sick day management. <https://www.idf.org/component/attachments/?task=download&id=2155:IDFE-Sick-day-management> (accessed Apr 2020); 2. Down S. *Diabetes & Primary Care* 2018;20:15; 3. Wilding J *et al. Diabetes Ther* 2018;9:1757

In periods of acute illness, all patients should follow sick-day rules to minimise risk of complications (3)

MONITOR

SEEK ADVICE
(from an HCP)

MEDICATIONS

Take medications as normal unless advised otherwise by a HCP¹

These medications should be **temporarily stopped** during acute illnesses that can cause dehydration or acute decline in renal function:^{2,3}

S	Sulphonylureas
A	ACE inhibitors
D	Diuretics
M	Metformin
A	ARBs
N	NSAIDs
S	SGLT2 inhibitors

Once the person is feeling better and able to eat and drink for 24–48 hours, these medications should be restarted²

- Insulin is the preferred agent for control of hyperglycaemia in hospitalised sick patients⁴

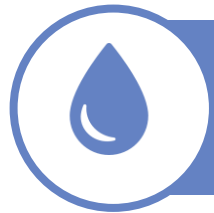
ACE, angiotensin-converting enzyme; ARB, angiotensin receptor blocker; NSAID, non-steroidal anti-inflammatory drug; SGLT2, sodium-glucose co-transporter-2

1. International Diabetes Foundation. Sick day management. <https://www.idf.org/component/attachments/?task=download&id=2155:IDFE-Sick-day-management>

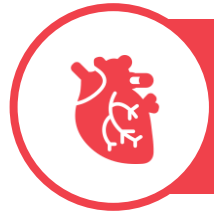
(accessed Apr 2020); 2. Down S. *Diabetes & Primary Care* 2018;20:15; 3. Canadian Diabetes Association. *Can J Diabetes* 2018;42:S316; 4. Gupta R *et al. Diabetes Metab Syndr* 2020;14:211

Key considerations

For prevention, and optimal care of patients with diabetes, consider:



Optimal glycaemic control



CV risk factor and lifestyle management



Adherence to medication



Reassurance and support

For treating patients with diabetes and COVID-19 infection, follow sick-day guidance:

MONITOR

SEEK ADVICE

MEDICATIONS