COVID-19 Care in the Community - Case Management in Pharmacy Operational Guide

March 2022

Medication Management Consult: Diabetes

Eligibility Criteria

Clients who are in COVID-19 mandatory isolation due to being COVID-19 *positive* and have diabetes.

Referrals for this service may come from:

- Prescriber via email or phone or noted on prescription.
- Welfare or other agencies such as Tihei Mauri Ora and the local hubs who provide support.
- General Practice
- Health Hawke's Bay.
- DHB services.

Background

People with diabetes and COVID-19 infection are more likely to have a severe infection and have a high chance of being admitted to hospital with complications of COVID-19. If the diabetes is not managed well during a COVID infection it can escalate and result in more serious conditions, such as diabetic ketoacidosis, hyperosmolar hyperglycaemic state and acute kidney injury, which will require emergency hospital admission. It is, therefore, vital that the right advice is given to manage the initial illness. The aims of managing a person with diabetes during intercurrent illness are to:

- Manage blood glucose levels.
- Ensure adequate calorie intake and hydration with fluid replacement.
- Manage medicines which increase the risk of adverse outcomes if the patient becomes dehydrated.
- Recognise symptoms associated with Ketosis, (if able e.g. patient with Type 1 Diabetes) test for and manage (if present) ketones.
- Recognise when further medical attention is required.

General advice for managing diabetes during COVID infection[1]

S (sugar)	Blood glucose levels can rise during illness even if the person is not eating Advise to increase blood glucose monitoring if the person has access to a meter Diabetes medications (sulfonylureas and insulin doses) may need to be increased temporarily during illness to manage these raised glucose levels.
I (insulin)	NEVER stop insulin or sulfonylureas without seeking advice from Diabetes Clinical Nurse Specialist or GP. Insulin doses may need to be increased during illness, especially if ketones are present. The patient may have a plan or seek guidance from Diabetes Clinical Nurse Specialist or GP.

C (carbohydrate)	Ensure the person maintains hydration and carbohydrate intake If the person is not able to eat or is vomiting, advise to replace meals with sugary fluids If blood glucose levels are high, maintain fluid intake with sugar-free fluids. If blood glucose levels are low, encourage regular intake of sugary fluids.
K (Ketones)	In type 1 diabetes, advise to check for ketones every 4–6 hours. If present, check every 2 hours. Check the patient has a plan for extra rapid-acting insulin doses (in addition to regular doses) based on total daily insulin dose if ketones are present. Seek guidance from Diabetes Clinical Nurse Specialist or GP. Advise to drink plenty of water to maintain hydration and flush through ketones

Specific medications

See also SADMAN(S-DOG) 'How to' guide for additional information. Diabetes specific medicines:

- Metformin
  - Not directly nephrotoxic.
  - Accumulates in renal impairment. Combined with dehydration and inflammatory response to infection, increased risk of lactic acidosis.
- SGLT-2 inhibitors e.g. Empagliflozin, Dapagliflozin
  - Increased risk of dehydration, particularly when taken with diuretics
  - Increased risk of euglycaemic ketoacidosis if a patient is unwell and not eating and drinking normally e.g. COVID-19 infection
- Sulphonylureas e.g. Gliclazide, Glipizide, Glibenclamide
  - Risk of accumulation for glibenclamide and significant hypoglycaemia.
  - Risk of hypoglycaemia if the patient is not eating.
- ACE-Inhibitors and Angiotensin Receptor Blockers (ARB's)
  - Risk of acute kidney injury if the patient becomes dehydrated. Risk is increased further when taken with NSAIDs, diuretics and SGLT-2 Inhibitors.

Factors to discuss with your patient

If this happens…	…then do this
Patient needing analgesia and/or antipyretic and has risk factors for AKI	Use Paracetamol AVOID NSAIDs
Patient has vomiting and diarrhoea or fever over 38 °C and sweating, reduced oral intake of fluids and nutrition.	Advise the patient to increase fluid intake and give rehydration fluids where appropriate. See 'How to guide' SADMANS-DOG **NOT for Heart failure patients** (see 'How to' guide Heart Failure): Stop ACE-I, ARB Stop diuretics Stop metformin Stop NSAIDs Stop empagliflozin

	IF the patient is on Glicbenclamide, contact GP through ISBAR to recommend an alternative agent eg Gliclazide or Insulin Medicines can be restarted 48 hours after feeling better and eating and drinking normally. **If patients are on anticoagulants:** discuss signs and symptoms of bleeding and to contact GP immediately if concerned. Alternatively, pharmacist to send ISBAR.
Patient is on empagliflozin/dapagliflozin and experiences signs and symptoms of Ketoacidosis: Nausea, vomiting, shortness of breath, generalized tiredness, loss of appetite, malaise, lethargy	Educate patients on the signs and symptoms of Ketoacidosis Stop empagliflozin/dapagliflozin immediately. Advise patient to call GP immediately
T1DM patients has positive ketones.	Contact doctor immediately.

Tools available:

- **Patient fact sheet: COVID-19 Seeking medical help – when and how**
- **Patient fact sheet: Managing Insulin when you are sick**
- **Diabetes Canada: Stay Safe When You Have Diabetes and Are Sick or At Risk of Dehydration**
- **ISBAR communication framework between health care workers.**

References:

[1] Down S (2020) How to advise on sick day rules. Diabetes & Primary Care 22: 47–8.

Authored by: Brendan Duck **Reviewed by:** Ben Firestone

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