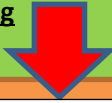



## HYPERGLYCAEMIA MANAGEMENT GUIDANCE FOR DEXAMETHASONE-TREATED COVID-19 INPATIENTS WITH OR WITHOUT DIABETES

**Frequency of Glucose monitoring**  **Target Glucose levels aimed at** 

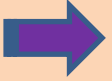
Monitor CBG before meals and before bed  
If CBG>15 check for ketones

6.0 – 10.0 mmol/l (up to 12.0 mmol/l is acceptable)

Exclude DKA/HHS (see Inpatient Diabetes guidelines/DKA & HHS proformas)

HOLD off Metformin, Sitagliptin and SGLT2 inhibitors (*Empagliflozin, Dapagliflozin, Canagliflozin*)  
(these can be restarted when patient is well AND if not contraindicated (eg resolution of AKI))

**FOR INSULIN-NAÏVE PATIENTS OR IF ON ORAL HYPOGLYCAEMIC AGENTS**

If CBG>12.0mmol/l  suggest commence HUMULIN I at

- **0.3units/kg/day**
- **0.15units/kg/day** (If age>70 yo or frail and Serum Creatinine > 150umol/l (eGFR<30ml/min))

**FOR PATIENTS ON INSULIN**

- Once daily Intermediate/Long-Acting insulin  
(eg *Humulin I, Insulatard, Levemir, Lantus, Tresiba*)

**TITRATE AS PER TABLE**


GLUCOSE LEVEL JUST BEFORE INSULIN DOSE	
<4mmol/L	Reduce insulin by 20%
4.1-6mmol/L	Reduce insulin by 10%
6.1-12mmol/L	No change
12.1-18mmol/L	Increase insulin by 10%
>18mmol/L	Increase insulin by 20%


- Twice daily Intermediate/Long-Acting/Premixed insulin  
(eg *Humulin I, Insulatard, Levemir, Lantus, Tresiba, Humulin M3, Humalog Mix 25, Humalog Mix 50, Novomix 30*)


**TITRATE AS PER TABLE**

GLUCOSE LEVEL	JUST BEFORE MORNING INSULIN DOSE	JUST BEFORE EVENING INSULIN DOSE
<4mmol/L	Reduce <b>evening</b> insulin by 20%	Reduce <b>morning</b> insulin by 20%
4.1-6mmol/L	Reduce <b>evening</b> insulin by 10%	Reduce <b>morning</b> insulin by 10%
6.1-12mmol/L	No change	No change
12.1-18mmol/L	Increase <b>evening</b> insulin 10%	Increase <b>morning</b> insulin by 10%
>18mmol/L	Increase <b>evening</b> insulin by 20%	Increase <b>morning</b> insulin by 20%

Suggested Correction doses:

 if CBG>15mmol/l consider 2 units of Novorapid (4hourly)

 if CBG>20mmol/l consider 4 units of Novorapid (4hourly)

 if CBG>27mmol/l consider 6 units of Novorapid (4hourly)

and review insulin regime as above

Once Dexamethasone therapy is discontinued, advise to monitor CBG closely as they may drop and insulin dosages needs to be down-titrated or stopped due to hypoglycaemia risk.

**IF ANY CONCERN PLEASE REFER TO THE DIABETES TEAM**

**PTO**

SOME KEY FACTS

- ✓ Dexamethasone reduces mortality in people with COVID-19 who require ventilation or oxygen therapy;
- ✓ Corticosteroid therapy impairs glucose metabolism and is the commonest cause of life threatening inpatient Hyperglycaemic Hyperosmolar Syndrome (HHS);
- ✓ COVID-19 increases insulin resistance and impairs insulin production from the pancreatic beta cells; this can precipitate hyperglycaemia and life threatening Diabetic Ketoacidosis (DKA) in people with diabetes and even in people not known to have diabetes;
- ✓ Glucose levels above 10.0 mmol/L have been linked to increased mortality in people with COVID-19;
- ✓ The recommended dexamethasone dose of 6mg/day (oral or IV) for 10 days, equivalent to 40mg of prednisolone/day, will undoubtedly affect glucose metabolism;
- ✓ Thus, the triple whammy of dexamethasone induced impaired glucose metabolism, COVID-19 induced insulin resistance and COVID-19 related impaired insulin production could result in significant hyperglycaemia, HHS and DKA in people with and without diabetes, increasing both morbidity and mortality;
- ✓ Sulphonylureas are NOT recommended in this context as beta cell function may be impaired and insulin resistance is likely to be severe. For this reason, these recommendations differ from those in the JBDS guideline on the Management of Hyperglycaemia and Steroid (Glucocorticoid) Therapy.

(Ref: [https://www.diabetes.org.uk/resources-s3/public/2020-08/NEW%20-%20COVID\\_Dex\\_v1.4.pdf](https://www.diabetes.org.uk/resources-s3/public/2020-08/NEW%20-%20COVID_Dex_v1.4.pdf))

**IF ANY CONCERN PLEASE REFER TO THE DIABETES TEAM**