

Glucagon for hypoglycaemia when oral intake is not possible

SESLHDPR/480

POLICY STATEMENT

The Registered Nurse (RN) / Registered Midwife (RM) is authorised to instigate nurse/midwife initiated medication without an authorised prescriber's order under the specific circumstances set out in the **INDICATIONS** section and provided there are no contraindications present.

It is important for nursing and midwifery staff to remain aware that:

- Minor ailments may be symptoms of other more serious diseases or may be adverse reactions to medication already prescribed
- Nurse-initiated medication may interact with the patient's prescribed medication
- The maximum daily recommended dose of the medication must not be exceeded.¹

The administering nurse/midwife must record the administration on an approved paper or electronic medication chart, clearly indicating that the medicine was nurse initiated.

If the patient requires the medication on a repeated basis then a medical officer (MO) must be consulted for review of the patient and a PRN order obtained.

All hypoglycaemic episodes must be escalated immediately via the clinical emergency response system and a medical officer must review the patient.

INDICATIONS:

- **Treatment of severe hypoglycaemic reactions which may occur in the management of patients with diabetes receiving insulin or oral hypoglycaemic agents 6**
- Administer when the blood glucose level (BGL) is less than 4 mmol/L, and patient has an altered or decreased level of consciousness or is unable to take treatment orally, (or in a child that does not have intravenous (IV) access)

CONTRAINDICATIONS²

- Pheochromocytoma
- Insulinoma
- Glucagonoma
- Hypersensitivity to glucagon or any of the excipients
- Chronic hypoglycaemia, adrenal insufficiency, starvation, alcohol-induced hypoglycaemia³

PRECAUTIONS

- The tip cap of the syringe included in the GlucaGen HypoKit contains natural rubber latex which may cause allergic reactions in latex sensitive individuals².
- Safe to use in pregnancy and breastfeeding³.

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HISTORY/ASSESSMENT

- Please refer to and follow the local hospital guidelines for the assessment and management of hypoglycaemia.
- Determine the blood glucose level (BGL) using a blood glucose meter
- Treat immediately if hypoglycaemia is confirmed
- Escalate immediately via clinical emergency response system

PROTOCOL/ADMINISTRATION GUIDELINES

| Caution: CHECK for allergies and/or contraindications | | | |
|---|------------------------------|---------------------------------|------------------|
| Drug | Dose | Route | Frequency |
| Glucagon | under 25 kg : 0.5 mg | IM (preferred) or subcut | Once |
| | 25 kg and over : 1 mg | | |
| <p>- Before reconstitution, the powder should be a white powder (which may appear like a powdery tablet upon settling), the diluent should be clear, colourless and without particles.</p> <p>- Dissolve the freeze-dried glucagon in the accompanying diluent. Inject the diluent (water for injection 1.1 mL) into the vial containing the freeze-dried glucagon. Gently shake the vial until completely dissolved and the solution is clear. Withdraw the solution back into the syringe. The reconstituted solution appears clear and colourless, and forms an injection of 1 mg (1 International Unit) per mL</p> <p>- GlucaGen HypoKit® should be used immediately after reconstitution</p> <p>- DO NOT administer intravenously.</p> | | | |

MONITORING - POTENTIAL ADVERSE EFFECTS/INTERACTIONS

Monitoring:

- Stay with patient until they regain consciousness
- Response to glucagon should occur within 6 -10 minutes²⁻⁴,
- Repeat BGL every 15 minutes until blood glucose level \geq 4 mmol/L, or earlier if clinically indicated
- Once BGL is \geq 4mmol/L and the patient is conscious and able to swallow follow up with oral carbohydrate or IV glucose according to local hospital protocol
- Recheck BGL hourly until stable⁶

Adverse effects:

- nausea, vomiting, hypokalaemia (large doses), allergic reactions³

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Drug interactions²:

- Beta-blockers: Patients taking beta-blockers might be expected to have a greater increase in both pulse and blood pressure.
- Insulin: Reacts antagonistically towards glucagon.
- Indomethacin: Be aware, glucagon may lose its ability to raise blood glucose or paradoxically may even produce hypoglycaemia.

PRACTICE POINTS

- Response to glucagon should occur within 6 -10 minutes²⁻⁴, if there is no response, the patient should be prescribed IV glucose as per local hospital policy guidelines
- The period of monitoring may need to be extended if the cause of hypoglycaemia is not immediately reversible⁴.
- The cause of the hypoglycaemia should be determined and acted upon to prevent reoccurrence⁴.

DOCUMENTATION

A record of the administration must be made on the approved paper or electronic medication chart noting that the medication was nurse initiated.

A further record of the medication administered including indication, dose and effect must be included in the patient's health care record.

REFERENCES/FURTHER READING

1. [PD2013_043 - Medication Handling in NSW Public Health Facilities](#)
2. Australian Product Information GlucaGen® Hypo Kit ® glucagon hydrochloride . Last updated 26/05/2020 Accessed 05/08/2021
3. [Australian Medicines Handbook](#). Australian Medicines Handbook Pty Ltd, Updated January 2021
4. [eTG complete](#). Melbourne: Therapeutic Guidelines Ltd. March 2018. Accessed 13/07/2021
5. NSW Adult Subcutaneous Insulin Prescribing Chart Is this superseded now by documetaion in eMR?
6. GlucaGen Hypokit . MIMSONline. Accessed 05/08/2021

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REVISION and APPROVAL HISTORY

| Date | Revision Number | Author and Approval |
|----------------|------------------------|---|
| July 2015 | DRAFT | Pharmacy Department, Prince of Wales Hospital |
| September 2015 | 1 | Stream consultation and revision Approved by SESLHD Drug &QUM Committee |
| May 2018 | DRAFT 2 | Reviewed by nursing and pharmacy staff. Minor wording updates made. References updated. |
| July 2018 | 2 | Approved by SESLHD Quality Use of Medicines Committee |
| August 2021 | DRAFT 3 | Reviewed by nursing and pharmacy staff. Minor wording updates made. References updated. |
| September 2021 | 3 | Approved by SESLHD Quality Use of Medicines Committee |