Insulin Dose Titration Decision Support Tool

This Insulin Dose Titration Decision Support Tool is not applicable to patients on continuous subcutaneous insulin pump treatment.

### Basal Bolus Insulin Regime

- **Standard CBG target**
  - is 6-10mmols (4-12mmols acceptable)
- **Conservative CBG target**
  - (for frail, elderly, end of life) is 6-15mmols.

#### Quick acting insulin with meal
- (Novorapid/Humalog/Apidra/Fiasp/Actrapid/Humulin S)
- Once or twice daily basal/background insulin
  - (Lantus/Levemir/Tresiba/Toujeo/Abasaglar/Humulin I/Insulatard/Insuman basal)

#### If patient on fixed subcutaneous doses follow flowchart below

- **Hypoglycaemia blood glucose below 4mmols**
  - Ensure hypoglycaemia appropriately treated. Look for obvious precipitants.

#### If patient has type 1 diabetes and is carbohydrate counting trained
- e.g. DAFNE trained, and capable and competent to self-manage their diabetes, they should be able to self-adjust their insulin doses.

#### Persistent levels above 14mmols for 24 hours or above 12mmols for 48 hours
- (ensure urine/blood ketones are checked in type 1 diabetes)

#### Hypo pre meal
- Review CBG pre-meal and at bed-time daily and titrate insulin every 48hr if required.
- If persistent problems seek advice from diabetes team via ICE

- **Hypo pre meal**
  - Reduce PRECEEDING meal time insulin dose by 10% if CBG 3-4mmols by 20% if CBG below 3mmols
  - Once daily basal insulin: reduce basal insulin by 10% if CBG 3-4mmols by 20% if CBG below 3mmols
  - Twice daily basal insulin: reduce evening/teatime basal insulin by 10% if CBG 3-4mmols by 20% if CBG below 3mmols

#### Hypoglycaemia blood glucose below 4mmols
- Ensure access to bedtime snack

#### Overnight hypoglycaemia
- • Once daily basal insulin: reduce basal insulin by 10% if CBG 3-4mmols by 20% if CBG below 3mmols
- • Twice daily basal insulin: reduce evening/teatime basal insulin by 10% if CBG 3-4mmols by 20% if CBG below 3mmols

#### High pre meal blood glucose levels
- Increase PRECEEDING quick acting insulin dose by 1-2 units or 10%

#### High pre breakfast blood glucose levels
- Exclude overnight hypoglycaemia

#### Standard CBG target
- is 6-10mmols (4-12mmols acceptable)

#### Conservative CBG target
- (for frail, elderly, end of life) is 6-15mmols.

#### Insulin Dose Titration Decision Support Tool Version 1. Feb 2018 (Higgins)
**Insulin Dose Titration Decision Support Tool**

**Twice Daily Insulin Regime**

Novomix 30/Humalog mix 25/
Humalog mix 50/Humulin M3/
Insuman comb 15/25/50 mixed insulin
Insuman Basal/Humulin I/Insulatard

- **CGB > 18mmols**
  - and standard CBG target *
  
  (see Management of Hyperglycaemia in Patients with Diabetes Decision Support Tool)

  - **Persistent levels above 14mmols for 24 hours or above 12mmols for 48 hours**
    - (ensure urine/blood ketones are checked in type 1 diabetes)

  - **Before bed or before breakfast blood glucose**
    - Increase evening meal by 10%

  - **Pre lunch and evening meal blood glucose**
    - Increase breakfast dose by 10%

- **Hypoglycaemia**
  - Any blood glucose below 4mmols

  - Ensure hypoglycaemia appropriately treated.
  - Look for obvious precipitants.

  - **Before bed or overnight**
    - Decrease evening dose by 10% if CBG between 3-4mmols.
    - If CBG below 3mmols decrease by 20%

  - **During the day**
    - Decrease breakfast dose by 10% if CBG between 3-4mmols.
    - If CBG below 3mmols decrease by 20%

  - **Ensure access to bedtime snack**

- Review CBG pre-meal and at bed-time daily and titrate insulin every 48hr if required.
- If persistent problems refer to DSN via ICE

- **Standard CBG target** is 6-10mmols (4-12mmols acceptable)
- **Conservative CBG target** (for frail, elderly, end of life) is 6-15mmols.
Monitor blood glucose level pre meal and 10pm
Titrates insulin every 48 hours if required.
If this does not work refer to diabetes team via ICE

• Standard CBG target is 6-10mmols (4-12mmols acceptable)
• Conservative CBG target (for frail, elderly, end of life) is 6-15mmols.
Sepsis, reduced mobility, stress, steroids and supplementary feeding can all have an effect and may increase blood glucose levels. Once the patient is well, doses may need reducing back to their pre-admission doses to prevent hypoglycaemia at home.

- Ensure medication has been given as prescribed and patient compliant with regimen
- Ensure correct insulin is being administered at correct time - Insulin is a time-critical medication

Right person
Right insulin
Right time
Right place
Right dose
Right device

- Exclude any mechanical problems with insulin delivery device (pen device working correctly?)
- Insulin pen devices should be prescribed on a named patient basis and should always be used with an insulin safety needle.
- Use insulin safety syringe for administration if using a vial of insulin.

Never draw insulin from a pen device with a syringe

- Insulin should be shaken prior to administration
- Offer a bedtime snack to all patients on insulin. If the patient usually has a bedtime snack at home this should continue in hospital.
- Check any episodes of hypoglycaemia are not a direct result of receiving PRN insulin doses (see prn insulin decision support tool)
- Review glucose control on a daily basis
- Patients on insulin must have an insulin time-critical aide in their bedside notes and a magnet on the white board to prompt timely insulin administration.

Know what you are doing

- Ensure you have had sufficient training to enable you to prescribe, administer and titrate insulin doses safely.