High Strength Insulin Risk Minimisation Strategy

High strength insulin products have been developed for those patients with a large daily insulin requirement (usually exceeding 200 units in 24 hours) due to marked insulin resistance. The benefit to the patient is a reduction in the number and volume of injections needed to achieve desirable glycaemic control.

High strength insulins are therapy options when an analogue insulin is used in accordance with NICE guidance.

The pharmaceutical presentation of high strength insulin is higher than the standard 100 units of insulin per ml preparations and brings a significant risk of dosing / administration errors which could result in an insulin overdose.

At the present time (January 2017), the following high strength insulins have been approved by the Wirral D&T Panel:

Insulin Glargine (Toujeo) 300 units per ml

Insulin Degludec (Tresiba) 200 units per ml

Insulin Lispro (Humalog) 200 units per ml

For more information about the approved indications and any specific requirements for these insulins then please see the Wirral RAG list.

For specific detail about individual products then please go to the Summary of Product Characteristics:

Insulin Glargine (Toujeo) 300 units per ml

Insulin Degludec (Tresiba) 200 units per ml

Insulin Lispro (Humalog) 200 units per ml

Potential medication errors identified:

- Prescribing the incorrect strength product
- Dispensing the incorrect strength product
- Mix-up between long acting (basal) and short acting (bolus) insulin
- Mix-up between different product strengths
- Switching patients between standard 100 units per ml and higher units per ml strength insulin products
- Misuse related to extraction of insulin from the pre-filled pen using a syringe
- Non-compliance with instructions to use a new needle for each injection. This can lead to blockage of needle and subsequent injection of wrong dose

Medicines Management Team Wirral adapted from:
Pan Mersey statement on High Strength Insulin Products and WUTH Risk Minimisation Strategy
April 2016 Updated June 2016 and January 2017
Written by Victoria Vincent Checked by Ian Gratrix

Prescribing

- Insulin must be prescribed by brand name.
- There should be no abbreviation for the words “unit” or “units” when prescribing insulin or documenting insulin dose or strength in the Insulin Passport. To minimise the risks of the above not happening, these messages will be reinforced by ScriptSwitch.
- ScriptSwitch messages highlight high strength insulins to prescribers.

Key safety considerations for patients, prescribers and other healthcare professionals

- Always prescribe by brand to minimise the risk of medication errors.
- Always check that the formulation, strength and device prescribed are appropriate.
- Advise patients to check that the correct product has been supplied.
- If switching to a high strength insulin, then close metabolic monitoring by the initiating specialist is essential during the switch and must be maintained until the patient is stabilised on the high strength insulin product. During this transition period prescribing and clinical responsibility will need to be maintained by the specialist. For further information regarding the RAG status of the higher strength insulins please click here.
- Doses, if stated must be expressed in number of “units” to be administered and never abbreviated to “iu” or “u”.
- Ensure patients know that there is more than one strength of their insulin available.
- Ensure patients read and understand the product’s patient information leaflet, receive appropriate training on the correct use and are either issued with a new insulin passport, or their existing insulin passport is updated.
- A risk assessment must be undertaken if using a high strength insulin for a patient with visual impairment.
- Encourage and support patients switching to a high strength insulin to monitor their blood glucose more closely to ensure good control is achieved. Blood glucose monitoring guidelines can be found here.
- A visual check of the dose to be administered should always be made using the dose window/counter.
- NEVER draw up any high strength insulin solution from the prefilled pen device using an insulin syringe. Markings on the insulin syringe will not provide an accurate dose and there is a risk of serious overdosage and life threatening hypoglycaemia.
- Warn patients only to use insulin as they have been trained. Using it any other way may result in dangerous overdosing or underdosing.

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