Human versus Analogue Insulin in Type 2 Diabetes

The preferred basal insulin recommended by NICE is human NPH (Neutral Protamine Hagedorn) insulin. Long-acting insulin analogues are recommended by NICE only in specific patient circumstances (see below). However, for most people with type 2 diabetes, long-acting insulin analogues offer no significant clinical advantage over human NPH insulin and are much more expensive.

The following guidance has been produced as part of the national NHS QIPP programme to address the appropriate use of insulin in type 2 diabetic patients.

1. **Choose Human NPH insulin for type 2 diabetics requiring insulin**
   
   Initiation of insulin in these patients occurs after failure of appropriate oral or non-insulin injectable therapy.
   
   - The majority of patients will be obese with high blood glucose levels on waking which are similar throughout the day. If this is the case, patients should be started on night time (basal) human NPH insulin (Insuman® Basal, Humulin I® or Insulatard®)
   - If blood glucose levels rise throughout the day despite maximum oral therapy, or use of a basal insulin, then consider either:
     
     - Twice daily biphasic non-analogue insulin (e.g. Insuman® Comb 25, Humulin M3®), OR
     - A basal bolus scheme (e.g. Insuman® Basal, Humulin I® or Insulatard® PLUS Insuman® Rapid or Humulin S® with meals) depending on patient’s preference.

2. **Consider switching type 2 diabetics with poor control on analogue insulin to Human NPH insulin**
   
   For those patients already on analogue insulins whose control is poor (HbA1c persistently ≥ 69mmol/mol), switch to human insulins especially if on disposable regimes; see above for examples.

3. **Use analogue insulin in type 2 diabetic patients appropriately**
   
   Insulin analogues should only be considered in the following circumstances:
   
   - The patient is reliant on a professional to inject insulin, and use of a long-acting insulin analogue (insulin detemir, insulin glargine) would reduce the frequency of injections from twice to once daily
   - The person’s lifestyle is restricted by recurrent symptomatic hypoglycaemic episodes
   - Patients who cannot use the device needed to inject human NPH insulin

   **When an insulin analogue is indicated, insulin glargine should be considered as the first choice, with detemir an option for any patients not well controlled on glargine.**

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