Wolverhampton
Diabetes Care

Insulin therapy

Indication:

- The most common indication for insulin is suboptimal glycaemic control on near maximal or maximal dose of oral agents
- Other indications are intolerance/contraindication to drug therapy, progressive micro or macrovascular disease, acute syndromes such as painful neuropathy and inter-current illnesses.

Preparing for insulin:

- Patients should be prepared for the possibility of insulin therapy well in advance; conversion to insulin should not be used as a threat to enforce compliance since this undermines their confidence in this mode of therapy.
- Insulin treatment should not be considered as a failure. In general, the majority of patients cope with insulin therapy without problems and feel much better for it.
- The following factors should be considered:

- Age
- Other health problems, e.g. complications such as visual loss
- Social circumstances, e.g. patients holding HGV licence
- Patient's attitude
- Compliance with diet and weight

Insulin Start-up:

Trained professionals should undertake insulin start-up. The Diabetes Specialist Nurses can provide education and initial follow up. To refer to the diabetes specialist team for insulin start-up, please complete the referral form.

Wolverhampton PCT offers a Local Enhanced Service payment for insulin initiation in people with Type 2 Diabetes. Practices wishing to start-up insulin are required to undergo a three-day MERIT course or similar qualification and/or be able to demonstrate equivalent skills. The diabetes specialist team will support practices.

Structured Education:

A comprehensive understanding of lifestyle, and of any lifestyle changes required, is crucial to the successful and safe use of insulin therapy.

Without the understanding of the tripartite balance between activity, diet and insulin, such therapy is unlikely to achieve good glycaemic outcome

- Self-monitoring dose titration to target
- Dietary understanding
- Management of hypoglycaemia
- Management of acute changes in plasma glucose control
- Driving: DVLA Guidance http://www.dft.gov.uk/dvla/medical/ataglance.aspx

Insulin regime:

Insulin initiation in type 2 DM should only be undertaken in primary care by teams with the necessary expertise. Detailed guidance on choice of insulin regimen is not covered in this document. Insulin regimen should be individualised and in line with the NICE guidance. Specifically, the use of insulin analogues as the first line is not recommended in type-2 DM.

Pre-mixed (Biphasic) Insulin:

This is the preferred insulin at start-up regime

• Begin with twice-daily pre-mixed (biphasic) human insulin. A once-daily regimen may be an option. The choice of specific insulin type within that is more governed by the selection of injection devices as determined by assessment of dexterity and visual ability, as well as patient preference.

• Consider pre-mixed preparations that include short-acting insulin analogues, rather than short-acting human insulin preparation if:

- a person prefers injecting insulin immediately before a meal, or
- hypoglycaemia is a problem, or
- blood glucose levels rise markedly after meals.

Basal (Intermediate & Long acting) insulin:

- Basal insulin (once or twice daily) alone will not provide effective glycaemic control. It is an option where the purpose of insulin treatment is to ensure safe control whilst avoiding hypoglycaemia and symptomatic hyperglycaemia. Such patients will usually be non-self caring, dependent and with limited life expectancy.
- Combination of insulin with sulphonylurea, glitazone and DPP4 inhibitor is not routinely recommended.
- Basal insulin can be used in combination with GLP-1 agonist (currently unlicensed and under specialist care).

• Begin with Human NPH insulin at bedtime or twice daily according to need

• Consider, as an alternative, using a long-acting insulin analogue (insulin detemir, insulin glargine) if the person:

- needs assistance from a carer or healthcare professional to inject insulin, and use of a long-acting insulin analogue would reduce the frequency of injections from twice to once daily, or
- cannot use the device to inject NPH insulin but could administer a long-acting insulin analogue, or
- has significant hypoglycaemia on NPH insulin irrespective of the level of HbA1c reached

Insulin Start up protocol

Indication & Preparation for Insulin therapy confirmed

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Insulin start up education programme

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Start with twice daily pre-mixed insulin regime
(Biphasic HUMAN insulin)
Stop all oral agents except metformin

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Assessment for appropriate injection device drives choice of insulin
Start dose is 0.5 u/kg split 2/3 and 1/3 morning / evening

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Metabolic targets (including pre-meal BG range) are discussed and agreed

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Dose adjustment by step titration programme at 4 -7 day intervals to achieve desired glycaemic targets. Patients should be trained to be self adjust and the objective is an independent / self managing patient

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3 - 6 monthly routine reviews of diet, lifestyle, diabetes knowledge, self management, metabolic outcomes including hypoglycaemia

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Consider more intensified / complex insulin regimes. Regime conversion will not resolve poor control due to concordance or compliance issues

Insulin and oral agent combination therapy:

The only acceptable combination is insulin and metformin. Generally stop all other oral hypoglycaemic agents at insulin start up.

In patients already established on insulin, consider re-starting metformin if significant weight gain (>3%) and/or poor control with high insulin doses.

Intensification of insulin therapy and complex insulin regimes:

The complexity of an insulin regime is not a measure of its intensity. The latter is dependent upon the depth of understanding about diet, lifestyle, self monitoring and dose adjustment and the intensity with which they proactively self manage their diabetes.
Where a patient is not reasonably participating in their own self care, moving to a complex insulin regime alone will not improve control

Multi-dose injections: This can be considered where twice daily biphasic insulin may not deliver effective glycaemic control with freedom from significant hypoglycaemia.

3 injections per day:

- biphasic insulin at breakfast, lunch and evening meal
- biphasic insulin at breakfast and evening meal + Quick/short acting insulin at lunch time
- biphasic insulin at breakfast, Quick/short acting insulin with evening meal and NPH insulin at bed time

4-5 injections per day:

- combination of once/twice daily basal insulin with quick acting insulin at meal times
- intensive and requires frequent monitoring
- patient should be motivated and fully engaged in self care

Insulin Preparations:

Please refer to Wolverhampton Formulary:
http://medicines.wolvespct.nhs.uk/formulary/bnf6.asp