EDUCATION FOR PUMP THERAPY

INTRODUCTION

The Diabetes Education Network held a one day workshop on Education for Pump Therapy on June 26th 2008. Participants from all over the UK, including representatives of some of the large centres for insulin pump therapy, met to discuss the educational needs of patients before, during and after the start of pump therapy. Transcripts from group work recorded on flip charts showed that strong consensus was reached on the education requirements of pump patients. The transcripts have been summarised below.

It is suggested that this framework be used to develop a core curriculum for centres to use to guide the development of their service for patients on insulin pump therapy.

A. Education before pump therapy

1. Except in special circumstances, all patients and/or their parents or carers should be fully conversant with and competent in flexible insulin dosing before pump therapy is considered

2. This requires
    a. Regular blood glucose monitoring (ideally pre and post prandial)
    b. understanding how to recognise and count carbohydrate content in food
    c. ability to use and adjust insulin:CHO ratios for bolus doses
    d. ability to use correction doses
    e. ability to adjust basal doses appropriately

3. Competences in these skills are best acquired and assessed through participation in a structured education programme.

4. Patients in whom psychological factors may be hindering effective self-management on MDI should be carefully assessed prior to starting pump therapy, as unless such factors have been addressed, they are likely to impair self-management using the pump. The exception is where use of pump therapy will in itself address such factors (eg fear of hypoglycaemia).

5. Before a decision is made on pump therapy, patients who fulfil the above criteria should be made fully aware of the benefits and challenges of pump therapy including the practicalities of wearing a pump. This should include a practical demonstration and an explanation of

    a. The principles of basal insulin control
    b. The different bolus options
    c. The different infusion sets available and opportunity to try one
    d. The availability of sensor function
    e. The likely benefits to the individual

B. Education at the start of pump therapy

A structured education programme should be provided to support all patients as they start pump therapy. This will typically last two to three days and should cover the technical aspects of setting up and using the pump, as well as the setting of basal rates and insulin:CHO ratios, taking into consideration the patient's previous requirements and with the aim of a safe and smooth transition to insulin pump therapy.

The programme should be flexible to address the individual goals of pump therapy for each patient. It can be delivered to patients individually or in groups. The key components of the programme should include:

1. How to set the pump up:
    a. Batteries
    b. Utilities – time & date
    c. Filling the cartridge, priming, inserting cannulas and changing infusion set
    d. Basic and advanced bolus doses
    e. Set and check the basal rate and use of temporary basal rates
    f. Errors and alerts

2. Practical experience with the pump (possibly using saline initially)
    a. How to wear it during day and night
    b. How and when to remove the pump
    c. Care of infusion set

3. Adjusting the dose
    a. Fasting or delaying meals to determine and review basal rates
    b. Adjusting the basal rate appropriately in response to sub optimal glucose levels
    c. Using pre and post prandial glucose tests to determine and review bolus ratios
    d. Use of correction doses

4. Lifestyle issues
    a. Managing exercise and illness
    b. Alcohol and eating out
    c. Driving and travel

5. Trouble shooting
    a. How to manage hypo- and hyperglycaemia and ketosis
    b. What to do if the pump fails
    c. When to revert to MDI and how to calculate the dose
    d. Where to get help

6. How to obtain supplies

7. How to download pump and analyse data

C. Education after the start of pump therapy

Structured follow up should be included as part of routine management in all patients. It is suggested that patients are reviewed at a minimum frequency of one and three months following initiation of pump therapy. These should be with the same educators and peers (if held in groups) as the start up programme, and are likely to last 2-3 hours, depending on the group size. Telephone support should be available to help trouble shoot between sessions.

At both sessions the emphasis is on ensuring pump features are used appropriately and doses are correct. Each sessions will:

1. Review original goals and whether they have been/are being achieved or whether there are ongoing problems which need addressing

2. Review glucose tests to determine whether basal rates and bolus ratios need to be adjusted or different types of bolus are needed. Agree action plan.

3. Recap pump set up (partly led by patient needs):
    a. Batteries/Utilities
    b. Filling the cartridge, inserting cannulas and changing infusion set
    c. Basic and advanced bolus doses
    d. Setting basal rate and use of temporary basal rates
    e. Errors and alerts

4. Recap
    a. How to manage hypo- and hyperglycaemia and ketosis
    b. Managing exercise and illness
    c. Alcohol and eating out
    d. What to do if the pump fails
    e. When to revert to MDI and how to calculate the dose
    f. Where to get help

D. Education as part of ongoing follow up

It is suggested that follow up of pump patients take place every 3 to 6 months in a clinic with the multi-disciplinary team available and sufficient time to cover 1-3 above for each patient (at least 30 mins per visit), preferably with facility to download pump data or analyse downloaded data.

Ongoing follow up must also cover other aspects of routine diabetes care such as pre-pregnancy advice, complication screening and vascular risk reduction.

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