



Initiating Pump Therapy: Looking for Efficiencies

April 16, 2010

IWK Pediatric Diabetes Team

Objectives

- To discuss criteria for pump eligibility
- To describe the current IWK protocol for eligibility and preparation for pump starts
- To discuss challenges we have encountered or we foresee with a provincial pump program
- To end with a discussion of the following questions

Discussion Questions

- What would your centre need to have in place to participate in a provincial pump program?
- What should our eligibility criteria be?
- Do you see other challenges?

Medical Indications

- Individualized decision making
 - Recurrent hypoglycemia
 - Recurrent DKA
 - Quality of life, unpredictable schedules
- Younger age (preschoolers)/low insulin dose requirement
- Dawn phenomenon, not controlled by MDI
- ? Desire for intensive management but unable to self inject
- Inability to achieve target A1c with MDI

Personal Choice

- Is improved quality of life a medical indication or a personal choice?
 - Treatment satisfaction is improved based on data from self reports and randomized trial
- Variable schedules, athletes
- What would you choose?
- Should we be gatekeepers or holders of the purse strings?

Personal Choice

- Important to explore with patient and family
 - Reasons for wanting pump
 - Expectations
 - Pros and cons
 - Requirements of them before, during and after pump start

Case 1

- 8 yr old, family support, insulin T1D, A1c 8.0%
- MDI difficult because of lunchtime insulin
- Parents have done lots of research on insulin pumps and want better control of sugars
- Competent in CHO counting and using ICR (insulin:carb ratios)
- Have attended Intro Pump Class
- Completed pre pump home work
- Came to pump start well prepared

Case 2

- 15yr old attended camp and now asking for pump
- Presently on MDI and does admit to missing some lunchtime insulin
- Carb counting and using ICR
- A1C 9.0%
- Main reason for wanting pump is to decrease # of injections and so “I can Sleep In”

Case 2

- Attended Intro Pump class with parent
- Completed pre pump homework, including some extra work CHO Counting
- Not always doing insulin adjustments
- Pump start day able to operate pump well
- Followed up with phone calls as requested.

Our Program

- Assessment by all team members
- Diabetes for at least 1 year (in most cases)
- BGM at least 4 times a day with recording
- Competent in insulin dose adjustment
- Carbohydrate counting and able to use ratios
- No history of repeated DKA
- Attendance at Intro pump class
- Support with Diabetes management

Pump Class:

- Explore what is expected from pump
- Principles of Pump Therapy
- Advantages/ disadvantages
- Requirements for Pump Therapy
- Review carbohydrate counting
- Meet with industry representatives for different pumps and infusion sets
- Pre-pump homework & pump start day

Other Provincial Pump Programs

- British Columbia (2008)
 - Saskatchewan (2007)
 - Ontario (2006)
 - Newfoundland (2008)
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- Similarities: All require physician approval
 - Differences: Eligibility criteria

BC - Criteria (initial pump)

All of the following:

- Children/youth \leq 18 years; T1DM (or T2DM on insulin)
- SMBG at least 4 times daily and recording results
- Agrees to ongoing diabetes education
- Family has read & signed 'Insulin Pump Agreement'

Plus 1 of the following:

- Frequent hypoglycemic episodes
- Frequent DKA episodes
- Unpredictable swings in blood glucose

BC – Criteria (subsequent pump)

All of the following:

- Children/youth ≤ 18 years; T1DM (or T2DM on insulin)
- Agrees to ongoing diabetes education
- Family has read & signed 'Insulin Pump Agreement'

- $A_1C \leq 9.0\%$ on two occasions within 6 months prior to request
- Patient has had no more than one episode of DKA in the past year

Saskatchewan - Criteria

- Children/youth ≤ 17 years old; T1DM

One or more of the following must be met:

- A_1C above target for age despite:
 - Consistent use of ICRs
 - Frequent SMBG & recording
 - MDI regimen
- Frequent severe hypoglycemic events
- Marked insulin sensitivity or resistance
- Unpredictable large swings in BG

Ontario - Criteria

Children:

- Completion of a Pump Education Program
- SMBG at least 4 times daily with regular recording
- Appropriate insertion site rotation (part of 90 day trial?)
- Appropriate sick day management
- Regular attendance at diabetes clinic (at least 3 times/year)

Ontario – Criteria

Adults:

- MDI for ≥ 1 year
- “Pre-assessment according to ADP requirements”
- “Ability to self-assess and take action based on BG results by:
 - Carbohydrate counting
 - Correction bolus
 - Sick day management”
- Regular follow-up/assessment (suggest 3 clinic visits per year or as deemed appropriate)

Newfoundland - Criteria

- Children/youth \leq 17 years old
- Budget 2010: \uparrow funding to cover adults 18-25

Same as Ontario program for children, plus...

- No more than one episode of DKA in the previous six months
- Receives appropriate on-going family support

Challenges

- Staffing/Training
 - Obtaining and maintaining certification and competency on pump therapy and different pumps/models
 - Are certain number of pump starts per year needed to keep skills of DC staff/physicians?
 - Maintaining patients choice

Challenges

- Staffing/Training
 - Referred-in patients are harder to assess given lack of established relationship
 - Where should follow-up be?
 - Time commitment by staff
 - Preparation, actual start day, follow-up calls in days to weeks after, demands to educate school or day care personnel

Challenges

- Managing the demand for pumps
 - Numbers
 - Sense of entitlement
 - Lack of knowledge/misconceptions about pump therapy
 - Waiting list
 - multiple calls/emails
 - Triaging – Medical indications vs choice

Challenges

- Issues around the pump start
- Families inadequately prepared
 - (i.e.) have not watched video or practiced
 - Industry could help here
- Families have not prepared or gained agreement from school or caregivers
- Families not maintaining contact with clinic for adjustment after pump start

Challenges

- Issues with ongoing pump management
- Parental involvement can decrease
 - Parent less comfortable with operating pump, can't access
 - Teens resist parental involvement
- Behaviour change that occurred prior to pump start to meet criteria is not maintained
 - Testing, recording, adjusting insulin, forgetting boluses
- If control deteriorates, should pump be stopped?

Case 1

- Difficulty with adjusting to insulin pump and work involved
- Unrealistic expectations of the work involved
- Unprepared for the work involved especially in the first 3 months
- Did adjust and happy with decision to go to pump but required lot of support from team
- A1C pre 8.0 Post 8.7 7.8

Case 2

- Adjusted well to the demands of pump therapy
- Is actively adjusting insulin both basals, and ratios
- Still missing some lunchtime boluses
- A1C improved - 7.8% (9.0% before pump)
- Continues to do most of care on own, but did allow parents help at the beginning

Experience has told us....

- Sometimes your expectations of success or struggle are not what we predict will happen
- Homework before starting helps
 - Carbohydrate counting
 - Active insulin dose adjustment
 - *Maybe a “quiz” like BC does would be useful*
- Family support is important
- Realistic expectations by the family can predict success

Summary

- Criteria in different programs are varied
- There should be flexibility to allow choice and for the unexpected
- Preparation for pump starts, the start and follow-up in the first 6 months are time consuming for staff and families
- A common approach is needed

Discussion

- What would your centre need to have in place to participate in a provincial pump program?
- What should our eligibility criteria be?
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