Diabetes management in palliative care

ANZSPM Melbourne June 2013
Dr Korana Kindl
Palliative Medicine advanced trainee
at St Vincent’s Hospital Brisbane
Case 1 – Mrs AH

- 66 year old lady admitted with clinical deterioration/SOB/fevers
- B/G metastatic NSCLC on supportive therapy – extensive disease
- T2 DM many years
  - On basal insulin for many years (detemir 18 u mane, 10 u nocte)
Case 1 – Mrs AH

• Treatment
  ▪ Empirical antibiotics, iv fluids
  ▪ Basal insulin bd continued
  ▪ SC insulin sliding scale with novorapid
  ▪ BGL 18 mmol/l on admission

• Clinical progress
  ▪ Continued to deteriorate
  ▪ insulin stopped day 4 of admission – hypo
  ▪ Fatigued, drowsy, dry mouth on day 5
  ▪ Died on day 6 of admission – BGL 24 mmol/l
Case 1 – Mrs AH - glucose readings and insulin doses during admission
Case 2 – Mrs JH

- 51 y old lady with recurrent posterior circulation strokes complicated by type 2 resp failure, increasing in frequency
- B/G T1 DM aged 25 with micro- and macrovascular complications including renal disease, retinopathy, neuropathy, IHD, cerebrovascular disease
  - Detemir basal insulin 10 units mane, 8 units nocte, apidra short acting insulin 4-6 units with meals
  - BGLs 6-30 mmol/l. PRN apidra used, SC sliding scale
Case 2 – Mrs JH

• Ongoing symptoms
  ▪ Headaches, neuropathic pains hands and feet, dizziness
  ▪ “no quality in life”

• Ongoing episodes of decreased consciousness – opted to not have more insulin

• Unconscious – BGL checks ceased

• SD started, died 2 days later
Why is diabetes important in palliative care?

- DM increasingly common
  - 18% 65-74 years, 23% over 75 year olds
  - One of the most common comorbidities in cancer patients
  - Associated with increased risk of death from several forms of cancer

*Australian diabetes educators association, 2003*
*Piccirillo et al., 2004*
*Campbell et al., 2012*
Why is this important?
Diabetes mellitus in palliative care

1. How does management in palliative care differ?
2. Management challenges
3. Suggested management approach
4. Summary
1. How does management in palliative care differ?

- Aim
  - Best QOL with glucose readings in a range that does not cause symptoms
  - Minimum of monitoring
  - Safe treatment without side effects
2. Challenges of managing DM in palliative care

- organ dysfunction
- prognostication
- gastrointestinal factors
- communication
2. Challenges of managing DM in palliative care (cont’d.)

• Prognostication
  ▪ Prognostication can be difficult
  ▪ Fear of under-treatment
    ▪ Clinical deterioration caused by poor glycaemic control
    ▪ More difficult for us to be passive
  ▪ Overlap of symptoms

*Ford-Dunn et al., 2006; McCoubrie et al., 2004*
2. Challenges of managing DM in palliative care cont.

Prognostication

- Nausea
- Weakness, Fatigue
- Drowsiness
- Irritable

This looks like what you've got... but what does "terminal" mean?
2. Challenges of managing DM in palliative care (cont’d.)

- Renal impairment
  - Dose reduce sulfonylureas, DPP-4 inhibitors, incretin mimetics
  - Discontinue metformin
  - Dose-reduce insulins - ? use glargine

- Hepatic dysfunction
  - Cease metformin and thiazolidinediones
  - Sulfonylureas at lower dose
2. Challenges of managing DM in palliative care cont.

- Erratic oral intake
- Anorexia and cachexia
  - Chronic inflammatory process, elevated levels of cytokines
  - Increased insulin resistance in liver and skeletal muscle
- Nausea and vomiting
- Gastrointestinal motility and absorption problems
  - Radio- or chemotherapy
  - Surgery
  - Primary gastrointestinal tract tumours

Argiles et al., 2009; King et al., 2011
2. Challenges of managing DM in palliative care cont.

- Communication with the patient, patient education
  - Often poorly done
- Communication within the team and with endocrinology teams
  - Equally poor

McCollumie et al., 2004; Quinn et al., 2006
How to do it
3. Suggested management approach

- Frequency of monitoring
  - No consensus
  - Tailored to individual patient’s disease stage
    - For early stage
      - 2-3x/week for pts on insulin
      - 1-2x/week for pts on oral agents
    - Terminal phase
      - ? Cease monitoring and treatment
        - not clear-cut
        - T1 DM may be different
        - Presence of symptoms

*King et al., 2011; Ford-Dunn et al., 2006*
3. Suggested management approach (cont’d.)

- Glycaemic threshold
  - varies from 10-15 mmol/l (diabetes physicians) to 15-20 mmol/l (palliative care physicians)
  - Median hyperglycaemic threshold for symptoms in study with healthy diabetics was 15 mmol/l
- Aim 5-15 mmol/l

Ford-Dunn et al., 2006; Warren et al., 2003
3. Suggested management approach (cont’d.)

“Your blood sugar is high, but your salt, pepper, ketchup, mustard and grated cheese levels are fine.”

Glasbergen
3. Suggested management approach (cont’d.)

- Treatment considerations tailored to disease phase
  - Patients with weeks or months to live
    - Heterogenous group
      - Active patients as well as patients with a poor performance status
      - Established diabetics as well as hyperglycaemia due to steroids
  - Patients with days to live
3. Suggested management approach (cont’d.)

• Patients with weeks or months to live
  ▪ Seek advice from diabetes physicians or diabetic nurse educators as needed
  ▪ Review need for oral medications
    ❑ Reduce, cease, simplify
    ❑ Short acting sulfonylurea may be useful
  ▪ Reduce insulin doses, simplify regimen
    ❑ Basal insulin (ie glargine may be useful)
  ▪ Communicate with patients and families
Steroid induced diabetes

- Common - ? Up to 30% in patients on steroids
- Often tricky
- Pattern of increased insulin resistance
  - Decrease liver’s sensitivity to insulin
  - Inhibit glucose uptake in muscle and fat
- Postprandial elevation of BGLs
- Increase in BGLs in course of the day, normalisation at night

Pilkey et al., 2012; Lansang & Hustak, 2011
3. Suggested management approach (cont’d.)

- **Management of steroid induced diabetes**
  - No standardised treatment approach
  - Suitable classes for palliative care setting may be sulfonylureas or DPP 4 inhibitor
  - Insulin regarded as safe and effective treatment
    - Prandial insulins
    - Intermediate or long-acting insulins
3. Suggested management approach (cont’d.)

*Figure 1: Suggested algorithm for patients with T2 DM with weeks or months to live*

- Check BGL 1-2x/week *
- Aim for BGL <15 mmol/l
- Avoid hypoglycaemia
  - Dose reduce OHA as needed
  - Use short-acting SU

- Monitor postprandial BGLs daily until stable
- Aim for BGL <15 mmol/l
- Use prandial/QID insulin initially
- Use intermediate or combination insulin when stable

- Check BGL 2-3x/week *
- Aim for BGL <15 mmol/l
- Avoid hypoglycaemia
  - Reduce insulin doses as required
  - Simplify insulin regimen – e.g. glargine once daily

* Increase frequency of monitoring if symptoms of hyper- or hypoglycaemia, erratic oral intake or nausea and vomiting present.
3. Suggested management approach (cont’d.)

Time-action profiles for NPH and insulin glargine

Serum insulin, pmol/L

NPH human insulin

Insulin glargine

UpToDate
3. Suggested management approach (cont’d.)

Take 2 of these pills last thing at night.

And 2 if you wake up in the morning.
3. Suggested management approach (cont’d.)

• Patients with days to live
  ▪ Monitor and treat only if patient conscious and symptomatic
  ▪ In a conscious patient symptomatic from hyperglycaemia with glucose levels > 15 mmol/l long acting insulin can be used (e.g. glargine) at a starting dose of 0.1 units/kg
3. Suggested management approach (cont’d.)

Communication with patient and family
Patient education
Remove all diet restrictions

Conscious → Symptomatic
Check BGL if BGL >15 mmol/l use long-acting insulin daily if symptoms responded

Asymptomatic → Stop monitoring and cease all diabetic treatment

Unconscious

BGL = blood glucose level
4. Summary

• DM in palliative care is challenging
• Aim is to keep blood glucose at the levels required to prevent symptoms of hyper/hypoglycaemia with a minimum of monitoring
• Treatment is tailored to disease phase
• Communication with patients and their families and with staff is essential