Managing Special Circumstances

Key Points

• Hypoglycaemia Dr Arla Ogilvie
  – Diabetes Consultant (Watford)

• Sick Day Rules Janet Guest
  – Community DSN (Hertford)

• Preparing for Colonoscopy Carolyn Jones
  – In-Patient DSN (Lister Hospital)
Special Circumstances
Hypoglycaemia

• 3 cases
• Importance
• Awareness and loss of awareness
• Management
• Driving
Recognising Symptoms of Hypoglycaemia

Hypo Awareness Week
29th Sept to 5th October 2014
www.hypoawarenessweek.co.uk
Treating a hypo

15-20g quick acting CHO and repeat every 15 mins until Glucose > 4mmol/l

- 5 jelly babies or sweets
- 100-120ml Lucozade or 200ml fruit juice
- 5 glucose tabs
- 1 sachet if conscious
- Glucagon IMI if unconscious/drowsy

Followed by a CHO containing snack when blood glucose >4mmol/l
Is the person UNCONSCIOUS?

NO

15-20g CHO by mouth
e.g. 120ml Lucozade or 150ml Cola (not Diet) or 200ml fruit juice.

YES

NOTHING by mouth, Recovery Position

Glucagon available? Confident to use it? (Pack in date?)

NO - dial 999

Stay with person until help arrives

YES, GIVE GLUCAGON

Stay with person (may take 10 mins)
Are they now CONSCIOUS?

YES

Give 120ml Lucozade plus 2 slices of thick toast

NO - dial 999

Stay with person until help arrives
• Hypoglycaemia can cause marked catecholamine surges which can increase cardiovascular events and death
• Caution in elderly patients who will be at increased risk
• Especially those with tight control and renal disease
• Can mask as a pseudo dementia in the elderly
Managing hypoglycaemia

Always look for a cause
• Reduced food intake
• Increased activity
• Alcohol
• Intercurrent illness
• Change in medication
• Lumpy injection sites
• Renal impairment
• Shift work

Must advise on blood glucose monitoring
• Look for a pattern
• Test before driving
• Adjust insulin
• Reduce Sulfonylureas or switch to alternative medication
Awareness and loss of awareness

- Normal awareness at 3.5-4mmol/l
- Impaired awareness most likely in:
  - Type 1 diabetes (but not exclusively so)
  - Long duration
  - Frequent hypos
- Markedly increases risk of a severe hypo requiring 3\textsuperscript{rd} part assistance
- Always ask about hypo awareness
DVLA Guidance & Medical
Fitness to Drive with Diabetes
Hypoglycaemia-related road traffic accidents in the UK

- Hypoglycaemia is the main hazard when driving and can occur with diabetes treated with insulin or tablets or both
- Many of the road accidents caused by hypoglycaemia are because drivers ignore or are unaware of the warning signs of hypoglycaemia
- Approximately 5 fatal hypoglycaemic road traffic accidents per year
- 25–30 serious hypoglycaemia related road traffic events per month

*(information from police notifications to DVLA, 2009)*

What is a reportable severe hypoglycaemic episode?

- Hypoglycaemia requiring the assistance from another person at any time of day or night.
- The requirement of assistance includes:
  - Admission to A&E.
  - Treatment from paramedics.
  - Assistance from 3rd party who has to administer glucagon/glucose because the person cannot do so themselves.
- It does NOT include another person giving assistance in circumstances where the person was aware of his/her hypoglycaemia and able to take appropriate action independently.

Diabetes UK 2011 Driving and the new medical standards for people with diabetes
Hypoglycaemic Unawareness

Impaired awareness of hypoglycaemia has been defined by the Secretary of State's Honorary Medical Advisory Panel on Driving and Diabetes as,

'an inability to detect the onset of hypoglycaemia because of a total absence of warning symptoms'.

DVLA Swansea, Dec 2011. At a glance: Guide to the current Medical Standards of Fitness to Drive p.29
## Fitness to drive Class 1 vehicles
### Insulin treated diabetes

<table>
<thead>
<tr>
<th>Must have adequate awareness</th>
<th>“5 TO DRIVE”</th>
</tr>
</thead>
<tbody>
<tr>
<td>No more than 1 severe hypo in 12 months</td>
<td>Hypo treatment and glucose monitor in car</td>
</tr>
<tr>
<td>Do appropriate glucose monitoring – evidence!</td>
<td>Correct date and time</td>
</tr>
<tr>
<td>Test within 2 hours of each car journey</td>
<td>Stop the car /keys out/move to passenger seat</td>
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<tr>
<td>Every 2 hours during journey</td>
<td>Treat hypos correctly</td>
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<td>Confirm on glucose meter</td>
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<td>Wait at least <strong>45 mins</strong> to drive again</td>
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Summary

• New regulations issued in 2011 bring UK in line with EU
• Key changes:
  – Group 1 drivers with two or more episodes of severe hypoglycaemia (requires the assistance of another person) in a 12 month period MUST inform DVLA and be advised not to drive
  – Group 2 drivers with one or more episodes of severe hypoglycaemia in a 12 month period MUST inform DVLA and be advised not to drive
  – DVLA have now removed the ban for people on insulin driving Group 2 vehicles and people can now undergo individual medical assessment to assess their fitness to drive these vehicles.
  – Insulin treated patients still cannot drive an emergency response vehicle
Thank you!
Blood glucose (BG) levels are likely to rise when unwell even if not eating

• AIM:
  Prevent HHS (Hyperosmolar Hyperglycaemic State)

• Objectives:
  Good hydration (2½ -3½ litres sugar-free fluids/24hrs)
  BG target of <15mmol/l (increase testing 4 x daily)
## Sick Day Rules – Key Points T2DM

### Tablet Controlled
- Continue all medication
  - Unless:
    - Vomiting/diarrhoea
      - stop metformin
    - Vomiting/diarrhoea
      - stop SGLT2I e.g. Canagliflozin
    - Stop SGLT2I e.g. Canagliflozin
    - Stop GLP1I e.g. Liraglutide
    - High/low BG
      - adjust sulphonylurea
      - consider insulin
        - e.g. Insulan Basal 6-12 units mane initially

### Insulin Controlled
- BG < 11mmol/l
  - usual insulin dose(s)
- BG 11-17
  - add 2 extra units insulin
- BG 17-22
  - add 4 extra units insulin
- BG > 22
  - add 6 extra units insulin
- Contact DSN/consider admission if BG not settling, vomiting or becoming increasingly unwell/drowsy
Sick Day Rules – Type 1 DM

Key Points

**AIM:**
- Prevent DKA (Diabetic Ketoacidosis)

**OBJECTIVES:**
- BG target of <13mmol/l
  - Increase testing 2-4 hourly
- Good hydration
  - Min. 100ml sugar-free fluids/hourly
- Prevent/manage ketosis
  - Check for ketones 2-4 hourly
  - **Admit** if unable to reduce ketosis; control vomiting; S&S ketoacidosis

**Insulin Requirements**
- NEVER stop basal insulin
- Correct BG >10mmol/l with extra Quick Acting Insulin
  - If no ketones:
    - 1 unit insulin to reduce BG by 2-3mmol/l
  - >Trace >1.5mmol/l ketones:
    - 10-20% Total Daily Dose insulin every 2-4 hours

**S&S DKA**
- Vomiting, abdominal cramps, Kussmaul breathing (panting)
COLONOSCOPY

- AM or PM?
- LOW RESIDUE DIET
- BOWEL PREP
ADVICE

• ORAL MEDICATION

• GLP-1 ANALOGUE

• INSULIN
KEY POINTS

• MONITORING

• LOW RESIDUE = HALVE

• NBM = STOP

• INDIVIDUAL
Thank you for listening

Any Questions?
Sick Day Rules - Scenario 1

• 23 year old girl with T1DM
• Wakes with headache
• Has insulin, eats breakfast – then immediately vomiting
• Recent history of increased hypos
• Rings surgery as unsure what to do

• Monitor BG closely
• Try to replace lost carbs by sipping sugary drinks if able
• Vomited - check for ketones & treat accordingly
• ?? early pregnancy (increased hypos) – urgent referral
• Contact usual DSN for education
• Encourage DAFNE/IDAC
Sick Day Rules - Scenario 2

- 84 year old man T2DM
- Metformin 500mg bd
- Gliclazide 80mg bd

Started on antibiotics and steroids for chest infection 3 days ago

Now complaining of:
1. Vomiting & diarrhoea
2. BG levels
   - Breakfast 6-10 mmol/l
   - Lunch 11-16 mmol/l
   - Dinner 18-27 mmol/l

- Risk of dehydration
  - Stop metformin
  - Antibiotics
  - Anti-emetic?

- Sip at least 100ml sugar-free fluid hourly
- BG climbing >15mmol/l
  - Try increasing gliclazide
  - Move p.m. dose to lunchtime
- Monitor BG 4 times a day
- May need insulin
Colonoscopy SCENARIO

- TYPE 2 DM, 50 YRS.
- PM LIST.
- METFORMIN 1G BD.
- INSUMAN COMB 25 BD.