



PHYSICIANS' INTERACTIVE PARTICIPANT GUIDE

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CASE 1 – Mr. C

Insulin initiation with patient on oral antidiabetes agents (OADs)

History:

- 60-year-old man with type 2 diabetes
- Mr. C works the evening shift at a bank and comes home exhausted without time for exercise
- He is “not into sports”
- Patient has had type 2 diabetes for six years
- History of hypertension, hypercholesterolemia, and obesity
- Impaired kidney function
- Patient has attended the local hospital diabetes education centre

Current medications

- Metformin 1,000 mg twice a day
- Glyburide 10 mg twice a day
- Simvastatin 20 mg daily
- ASA 81 mg daily
- Ramipril 10 mg daily

Physical exam:

- Weight = 90 kg
- A1C = 8.3%
- BMI = 29 kg/m²
- eGFR = 50 mL/min

Questions:

- 1) When do you have to consider adding insulin? At what level of A1C is it crucial to consider?
- 2) What is the easiest protocol for convenience and ease of administration for the family physician to recommend to the patient?
- 3) What insulin would you choose?

CASE 2 – Mr. L

Insulin initiation with patient not taking oral antidiabetes agents (OADS)

History:

- 42-year-old man recently immigrated to Canada
- Mr. L has type 2 diabetes
- Presents with fatigue
- BP: 130/60 mm Hg (lying) and 130/80 mm Hg (standing)
- Moist mucous membranes
- No abdominal pain or nausea or vomiting
- 5-kg (11-lb) weight loss over four weeks, current weight 60 kg
- Also presents with increased thirst, blurry vision, and increased urination
- Patient works on a farm and speaks very little English. His nephew helps translate
- He has no extended health plan and is asking for an injection as he believes this will provide him with the “best chance for treatment or a cure”

Current medications:

- None, including over-the-counter and herbal medications

Physical exam:

- Weight = 60 kg
- BMI = 22 kg/m²
- FBG = 18.6 mmol/L
- A1C = 14.8%
- Remaining lab tests = normal

Questions:

- 1) Are there situations when you should consider initiating combination therapy (insulin and OADs) right away?
- 2) What are the immediate and long-term goals of therapy?
- 3) What regimens could be used?

CASE 3 – Mrs. R

Hypoglycemia in an insulin user

History:

- 50-year-old female; golf instructor with type 1 diabetes
- For decades, Mrs. R has used the following regimen:
 - Regular insulin: 10 units at breakfast and 15 units at suppertime
 - Insulin NPH: 20 units at breakfast and 20 units at suppertime
- Has become alarmed by recurrent overnight hypoglycemia. This tends to occur around 0300 hours. Has required ambulance care and an emergency room visit on two occasions when her husband could not wake her
- She says that she can no longer tell that her blood sugars are low. She has no symptoms
- Had diet-controlled hypercholesterolemia
- Is on hydrochlorothiazide for well-controlled hypertension

Current medications:

- Hydrochlorothiazide 25 mg daily

Physical exam:

- A1C = 7.9%

Questions:

- 1) Why is this woman developing serious hypoglycemia?
- 2) What steps can be taken to protect her and to prevent recurrence?
- 3) Is there a role for long-acting insulin analogues?

CASE 4 – Mr. B

Complex insulin regimens

History:

- 34-year-old male
- Type 1 diabetes diagnosed at age 19
- Mr. B is a busy computer systems analyst; work is hectic and includes frequent travel to different time zones
- Enjoys physical activity and “fits it in” whenever schedule permits
- Married, recently had first child
- Very concerned about “labile” blood sugars with many highs and lows
- Quite motivated to improve long-term health
- Has been using human insulin twice daily for many years with no change in doses:
 - Regular insulin: 6 units at breakfast and 10 units at suppertime
 - Insulin NPH: 12 units at breakfast and 10 units at suppertime
- Has an extended medical plan
- He is very proud of the computer program he developed to monitor his blood pressure and glucometer readings, which he brings in each week in a printed graphical format
- Is very keen on controlling his sugars to prevent an amputation and blindness, which his older brother had secondarily to poorly controlled sugars
- According to the graph the patient presents to you, his sugars are variable, but generally he has high morning sugars averaging 9.8 mmol/L
- His blood sugar is frequently too low four hours after eating despite having high two-hour, post-prandial sugars

Current medications:

- Acetaminophen, as needed
- Multivitamin
- Salmon oil 3 gms daily

Physical exam:

- No abnormalities; average weight
- A1C = 8.4%
- Lipids, blood pressure, renal tests are on target

Questions:

- 1) When would an “intensive” insulin regimen be appropriate?
- 2) Which insulin could be used? How do you adjust and titrate?
- 3) Which factors could be considered in choosing the types of insulin?