

Intensified Insulin To Improve Glucose Control

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CME Test Questions

Case #1: A 35-year-old woman presents to your office with type 2 diabetes that was diagnosed 3 years ago. At age 30 with her last pregnancy, she was treated with insulin for gestational diabetes which disappeared for 2 years after delivery. BMI 3 years ago was 35 kg/m² and now it is 36 kg/m² (current weight is 70 kg). She is currently being treated with 500 mg metformin 3 times a day and 10 mg glyburide twice a day and her HbA1c is 9.0%.

1. What would you do now?
 - a) Increase metformin dose
 - b) Add a DPP-4 inhibitor
 - c) Add a glitazone
 - d) Add insulin

2. If you decide to add insulin, what would be your strategy?
 - a) 10-15 units of long-acting insulin at bedtime
 - b) 30-40 units of long-acting insulin twice daily
 - c) 30-40 units of long-acting insulin at bedtime and 5 units of short-acting insulin before meals
 - d) 10-15 units of long-acting insulin at bedtime and 10 units of short-acting insulin before each meal

Case #2: A 45-year-old man was diagnosed to have type 2 diabetes 1 year ago. At that time he weighed 100 kg with a BMI of 35 kg/m². His fasting plasma glucose was 165 mg/dL, creatinine 0.8 mg/dL, and his HbA1c was 9.1%. Another physician prescribed pioglitazone 30 mg daily. He presents to you with 2+ pitting edema in the legs. He now has a BMI of 37 kg/m² and HbA1c of 8.6%.

3. What would you recommend?
 - a) Stop the pioglitazone and add a DPP-4 inhibitor plus hydrochlorothiazide
 - b) Stop the pioglitazone, and add metformin plus glipizide
 - c) Continue the pioglitazone, and add a GLP-1 agonist
 - d) Continue the pioglitazone and add metformin

4. If you decide to start insulin therapy, what would you recommend?
 - a) Continue the pioglitazone, and add 20-30 units of long-acting insulin at bedtime
 - b) Continue the pioglitazone, and add 20-30 units of long-acting insulin twice a day
 - c) Stop the pioglitazone, and add 35 units of 70/30 insulin before breakfast and dinner
 - d) Stop the pioglitazone, and add 20-30 units of long-acting insulin at bedtime

Case #3: A diabetic patient of yours is being treated with 30 units NPH at bedtime and 5 units of short-acting insulin before each meal. His average blood glucose numbers are as follows: 110 mg/dL before breakfast, 190 mg/dL before lunch, 210 m/dL before supper and 250 mg/dL at bedtime.

5. What would you recommend?
 - a) Increase the NPH to 40 units
 - b) Decrease the NPH to 20 units and increase the short-acting insulin to 8 units before meals
 - c) Keep the NPH constant and increase the short-acting insulin to 12 units before meals
 - d) Stop the NPH and increase the short-acting insulin to 15 units before meals

Case #3 continued: You made some changes, and he returns in one month with the following pattern: 220 mg/dL before breakfast, 110 mg/dL before lunch, 120 mg/dL before supper, and 135 mg/dL at bedtime.

6. What would you recommend now?
 - a) Add more short-acting insulin before breakfast
 - b) Add more NPH at bedtime
 - c) Add more NPH at bedtime and decrease short-acting insulin doses before meals
 - d) Add some NPH insulin in the morning and keep the short-acting doses the same as before

Case #4: A 43-year-old man (BMI of 41 kg/m²) who has been a patient of yours for several years presents to your office for an annual exam. He has had type 2 diabetes since the age of 35. His blood glucose was initially controlled with oral medications but he has been started on a regimen of basal plus rapid-acting insulin 1 year ago. His current HbA1c is 8.8%. He measures his blood glucose 3-4 times daily. His fasting plasma glucose is in the range of 160-200 mg/dL despite an insulin regimen of 275 units per day consisting of 155 units of glargine insulin at bedtime, and 40 units of lispro insulin before each meal. He also reports that he is growing increasingly frustrated with his injections due to skin irritation at injection sites.

7. What characteristic of this patient, if any, would make him a suitable candidate for therapy with U-500 insulin?

- a) His BMI is greater than 39 kg/m²
- b) His HbA1c is greater than 8.5%
- c) He uses large volumes of glargine insulin
- d) All of the above
- e) None of the above

8. Which of the following strategies would you consider if you decided to initiate U-500 insulin in this patient?

- a) Stop the lispro, continue the glargine, and add 2 injections of U-500 per day
- b) Stop the glargine, add one injection of U-500 at bedtime
- c) Continue all insulins, add one injection of U-500 at bedtime
- d) Stop the glargine, continue lispro, and add 2 injections of U-500 per day

CME Evaluation

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1. Approximately how many patients do you see each week with type 2 diabetes?

_____ /per week

2. Approximately what percentage of these patients receive insulin? _____ %

3. What year did you graduate from medical school? _____

4. Did you attend medical school in the United States?

Yes No

5. Are you:

Male Female

6. Degree:

MD/DO

PA

NP

Other _____

7. Physician Specialty:

Internal Medicine

Family Medicine

Other _____

8. Practice Location:

Urban

Suburban

Rural

9. Present Employment:

Solo Practice

Group Practice

Medical School

- HMO
- Non-Government Hospital
- Government
- Other _____

10. Major Professional Activity:

- Direct Patient Care Activities
- Administrative Activities
- Medical Education
- Medical Research
- Other _____

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