

Scenario: Type 2 DM

S.S., a 58-year-old Asian woman, comes to the clinic with chronic fatigue, thirst, constant hunger, and frequent urination. She denies any pain, burning, or low-back pain on urination. She tells you she has had frequent vaginal yeast infections that she has treated with over-the-counter medication. She works full time at a bank and states she has difficulty reading numbers and reports, resulting in her making some mistakes. She says, “By the time I get home and make supper, I am too tired to do anything else.” She says her feet often “burn or feel like there are pins in them.” She has a history of gestational diabetes. In reviewing S.S.’s chart, you note she last saw the provider 6 years ago. Her current weight is 173 lbs (78.5 kg). She is 5’3” (135 cm) tall. Today her BP is 152/97 mm Hg. A random plasma glucose level is 291 mg/dL (16.2 mmol/L). The provider suspects she has developed type 2 diabetes (DM) and orders the laboratory studies shown in the chart.

Laboratory Test Results

Fasting glucose	184 mg/dL (10.2 mmol/L)
Hemoglobin A _{1c} (A _{1c})	8.8%
Total cholesterol	256 mg/dL (6.6 mmol/L)
Triglycerides	346 mg/dL (3.91 mmol/L)
Low-density lipoprotein (LDL)	155 mg/dL (4.01 mmol/L)
High-density lipoprotein (HDL)	32 mg/dL (0.83 mmol/L)
Urinalysis (UA)	+ glucose, - ketones

1. Interpret S.S.’s laboratory results.

Her fasting glucose is high suggesting type 2 diabetes normal is less than 100 mg/dL, her A1C is elevated normal is less than 5.7 indicating that shes had poor glycemic control, her cholesterol is high, her triglycerides are high normal is less than 150 mg/dL, her LDL is high normal being less than 100, her HDL is low normal being above 50. All of this indicates that her glucose is out of control.

2. Identify 3 methods we use to diagnose DM.

Getting her fasting plasma glucose, hemoglobin A1C, and random plasma glucose.

3. Name 6 risk factors for type 2 DM. Highlight those that S.S. has.

4. Which of her assessment findings are consistent with type 2 DM?

Hyperglycemia symptoms like the frequent urination, excessive thirst, hunger, fatigue, blurred vision, recurrent infections, neuropathy, her fasting glucose, random plasma glucose and hemoglobin A1C, hypertension, high cholesterol, her weight.

CASE STUDY PROGRESS

S.S. is diagnosed with type 2 DM. The provider starts her on metformin 500 mg orally each day at breakfast and atorvastatin 20 mg orally at bedtime. She is referred to the dietitian for instructions on starting a 1200-calorie diet using an exchange system to promote weight loss and lower glucose, cholesterol, and triglyceride levels. You are to provide teaching about pharmacotherapy and exercise.

5. How can you incorporate S.S.'s cultural preferences as you develop her teaching plan?

I could do this by trying to ask her the foods she likes and or cooks and trying to find alternatives that still fit into her culture and incorporate activities within her culture that she can find to do and or start.

6. What is the reason for starting S.S. on metformin?

Shes starting on metformin because this is a first line treatment for type 2 diabetes and because of her blood glucose and A1C levels, this will also help with her weight because she is overweight currently.

7. Outline the general teaching you would provide S.S. about oral hypoglycemic therapy.

What exactly it does, how to take it (with food), know the side effects like gi upset, and the importance of blood glucose monitoring.

8. What would you teach S.S. to do if she becomes ill with the flu or viral illness?

Monitor her blood glucose more frequently, stay hydrated, continue eating small frequent meals, when to call the dr.

9. What benefits would S.S. receive from exercising?

Exercising would allow for reducing insulin resistance, and lowering her blood glucose and A1C, it would help with maintaining a healthy weight to lower her HDL, helps with her blood pressure, can help with complications of Diabetes.

10. What would you teach S.S. about exercise?

Do not take it too hard, do about 30 min a day and things like brisk walking, cycling, yoga, check blood sugar before and after exercise , stay hydrated, carry fast acting glucose

11. Besides the dietitian, what interprofessional and community referrals may be appropriate for S.S.?

Diabetes educator, endocrinologist, ophthalmologist, podiatrist, pharmacist, PT, diabetes support groups

CASE STUDY PROGRESS

S.S. comments, "I've heard many people with diabetes lose their toes or even their feet." You take this opportunity to teach her about neuropathy and foot care.

12. Which symptoms lead you to believe S.S. has some form of neuropathy?

Her report of her feet burning and feeling like pins and Needels.

13. What other findings in S.S.'s history increase her risk for developing neuropathy?

Her uncontrolled diabetic levels, hypertension, abnormal cholesterol levels, hx of gestational diabetes, lifestyle and work stress.

14. What would you teach S.S. about neuropathy?

Signs and symptoms, importance of keeping glucose under control, wearing proper footwear and footcare, pain management for it.

15. Because S.S. has symptoms of neuropathy, placing her at risk for foot complications, you realize you need to instruct her on foot care. Outline 5 points you would include when teaching her about foot care for persons with DM.

Check feet daily, foot hygiene, wear proper footwear, keep nails short, encourage foot exams.

16. What ongoing monitoring will S.S. need for nephropathy and retinopathy?

BP monitoring, creatinine and GFR levels, regular eye exams, monitor for vision changes.

17. At the conclusion of the visit, which statements indicate S.S. has an accurate understanding of the teaching you provided about DM? Select 4 correct options.

- a. "When I am ill, I do not need to take the metformin."
- b. "The only place it is safe to go barefoot is in my house."
- c. "It is best to take the metformin at breakfast and dinner."
- d. "Looking at the condition of my feet every day is important."
- e. "I will make an appointment with the eye doctor next week."
- f. "Taking a walk for at least 20 minutes a day will help my DM."
- g. "If I take my medicine, I can eat what I want, and my glucose will be fine."
- h. "I will be able to stop the metformin when my pancreas starts working better."

i. CASE STUDY PROGRESS

- j. 18. S.S. returns to the clinic 6 weeks later for a follow-up appointment. She met with the diabetic educator and is making changes to her eating habits and has started walking. **For each assessment finding, use an X to indicate whether the interventions were Effective (helped to meet expected outcomes), Ineffective (did not help to meet expected outcomes), or Unrelated (not related to the expected outcomes).**

Assessment Finding	Effective	Ineffective	Unrelated
a. Reports stress incontinence when she coughs, sneezes			X
b. BP 130/78 mm Hg	X		
c. Fasting blood glucose level results: 153 mg/dL	X		
d. Weight loss of 6 pounds (2.7 kg)	X		
e. Reports decreased tingling in her toes.	X		
f. Reports continued blurred vision.		X	
g. Eating dinner with her husband every night.			X
h. Hemoglobin A1C level results: 8.2%		X	
i. Reports of frequent urination	X		