

QUESTION

A 65-year-old male patient with a long history of hypertension and a recent diagnosis of type 2 diabetes mellitus is being treated with lisinopril and metformin. He has been experiencing increasing fatigue and weakness over the past few weeks. His physical examination is unremarkable, and his laboratory tests show a hemoglobin level of 10 g/dL, a hematocrit of 30%, and a mean corpuscular volume (MCV) of 85 fL. His serum ferritin is 100 ng/mL, and his serum transferrin saturation is 20%. His renal function is stable, with a serum creatinine level of 1.2 mg/dL. What is the most likely cause of his anemia?

- A. Iron deficiency anemia
- B. Vitamin B12 deficiency
- C. Folate deficiency
- D. Anemia of chronic disease
- E. Hemolytic anemia

ANSWER: D

EXPLANATION: The patient's anemia is most likely due to anemia of chronic disease (ACD). The key features supporting this diagnosis are the presence of a microcytic anemia (MCV 85 fL), a normal or slightly elevated serum ferritin (100 ng/mL), and a low transferrin saturation (20%). ACD is a common cause of anemia in patients with chronic medical conditions, such as hypertension and diabetes mellitus. The anemia is typically normochromic and normocytic, but can become microcytic in severe cases. The pathogenesis of ACD involves the production of hepcidin by the liver, which binds to and internalizes transferrin receptors on the surface of macrophages, leading to decreased iron availability and subsequent anemia.

QUESTION

A 45-year-old male patient with a long history of hypertension and a recent diagnosis of type 2 diabetes mellitus is being treated with lisinopril and metformin. He has been experiencing increasing fatigue and weakness over the past few weeks. His physical examination is unremarkable, and his laboratory tests show a hemoglobin level of 10 g/dL, a hematocrit of 30%, and a mean corpuscular volume (MCV) of 85 fL. His serum ferritin is 100 ng/mL, and his serum transferrin saturation is 20%. His renal function is stable, with a serum creatinine level of 1.2 mg/dL. What is the most likely cause of his anemia?

- A. Iron deficiency anemia
- B. Vitamin B12 deficiency
- C. Folate deficiency
- D. Anemia of chronic disease
- E. Hemolytic anemia

ANSWER: D

EXPLANATION: The patient's anemia is most likely due to anemia of chronic disease (ACD). The key features supporting this diagnosis are the presence of a microcytic anemia (MCV 85 fL), a normal or slightly elevated serum ferritin (100 ng/mL), and a low transferrin saturation (20%). ACD is a common cause of anemia in patients with chronic medical conditions, such as hypertension and diabetes mellitus. The anemia is typically normochromic and normocytic, but can become microcytic in severe cases. The pathogenesis of ACD involves the production of hepcidin by the liver, which binds to and internalizes transferrin receptors on the surface of macrophages, leading to decreased iron availability and subsequent anemia.