

## FOR SHORT ANSWERS

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## FOR LONG ANSWERS

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### STATISTICAL QUESTION

#### Variables and parameters

Researchers investigated the influence of body mass index and alcohol consumption on the incidence of liver cirrhosis in middle aged women. They used data from the Million Women Study, a prospective cohort study based in the United Kingdom. At recruitment and follow-up, the measurements for each woman included body mass index, age, smoking, and self reported alcohol consumption.

Which one of the following best describes the attributes measured for each woman at recruitment and follow-up?

- Point estimates
- Variables
- Sample estimates
- Population parameters

Submitted by Philip Sedgwick  
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### PICTURE QUIZ

#### A woman with fatigue, dyspnoea, and orthopnoea

A 55 year old woman presented to the emergency department with a history of generalised fatigue of about four months and breathlessness of one month. She had also experienced shortness of breath when lying flat during the past week. She had no history of chest pain or cough, no relevant medical history, and she was not taking drugs.

On arrival, her blood pressure was 92/66 mm Hg, her pulse was 67 beats/min, her respiratory rate was 20 breaths/min, and oxygen saturation on air was 94%. On examination, her neck veins were distended and cardiac sounds were muffled. She had coarsening of the facies and the deep tendon reflexes showed delayed relaxation. Her chest radiograph showed an increased cardiothoracic ratio, with the appearance of a globular heart. The pulmonary parenchyma seemed to be normal. Electrocardiography revealed low voltage complexes.

Submitted by Vishal Sharma and Mukul P Agarwal  
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- What is the diagnosis on the basis of the clinical findings, chest radiography, and electrocardiography?
- What investigation would you perform next?
- On the basis of the history and physical examination, what is the underlying cause of the problem?
- What other cardiac manifestations are associated with this disease?
- How should this patient be managed?

### CASE REPORT

#### Life threatening lactic acidosis

An 83 year old woman with diabetes presented to the emergency department with progressive shortness of breath and a two week history of diarrhoea. Her drugs included aspirin, 75 mg four times a day; a combination of irbesartan with hydrochlorothiazide, 300/25 mg four times a day; and metformin, 1000 mg three times a day. She had no previously known renal insufficiency, but on arrival she was oliguric, disoriented, and confused.

Her respiratory rate was 32 breaths/min, blood pressure was 76/46 mm Hg, heart rate was 125 beats/min, and rectal temperature reached 36.8°C. She had cool and clammy extremities and a persistent skinfold—additional evidence of severe dehydration. Arterial blood gases showed a profound lactic acidosis, with pH 6.72, partial pressure of carbon dioxide (PCO<sub>2</sub>) 14 mm Hg (1.87kPa), partial pressure of oxygen (PO<sub>2</sub>) 106 mm Hg (14.13 kPa), bicarbonate 12 mmol/L, and a high lactate

concentration of 17.4 mmol/L. Laboratory results showed a normal blood glucose concentration of 9 mmol/L, a serum urea of 22 mmol/L, a serum creatinine of 779 μmol/L, an increased serum potassium concentration of 6.8 mmol/L, and a decreased prothrombin activity of 43% (prothrombin time of 21 seconds). Chest and abdominal examination, chest radiography, urine dipstick, plasma C reactive protein (<5 mg/L), and procalcitonin (<0.5 μg/L) concentrations showed no evidence of an infection.

- What are the differential diagnoses in severe lactic acidosis?
- What is the most likely diagnosis?
- What is the prognosis of this acute critical illness?
- How should this patient be managed?

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### ON EXAMINATION QUIZ Haematological disorders

The answers to this question, and more questions on this topic, are available from [www.onexamination.com/endgames](http://www.onexamination.com/endgames) until midnight on Wednesday.

This week's quiz is on haematological disorders and is taken from the OnExamination revision questions for the MRCP part 1 and part 2 exams.

Which one of the following haematological disorders is inherited as an autosomal recessive condition?

- Antithrombin III deficiency
- Protein C deficiency
- Glucose-6-phosphate dehydrogenase deficiency
- Pyruvate kinase deficiency
- Acute intermittent porphyria