

## FOR SHORT ANSWERS

See p 504

## FOR LONG ANSWERS

Go to the Education channel on [bmj.com](http://bmj.com)

### STATISTICAL QUESTION Prevalence and incidence

A randomised controlled trial investigated whether screening and treating women for chlamydial infection reduced the subsequent occurrence of pelvic inflammatory disease. Between 2004 and 2006, vaginal swabs were provided by 2529 sexually active female students. The samples were randomly allocated to immediate testing (screening group), or storage and deferred screening after a year (control group). After screening, treatment for chlamydial infection was offered to women where necessary. All women were able to undertake independent testing for chlamydia during the follow-up period of one year.

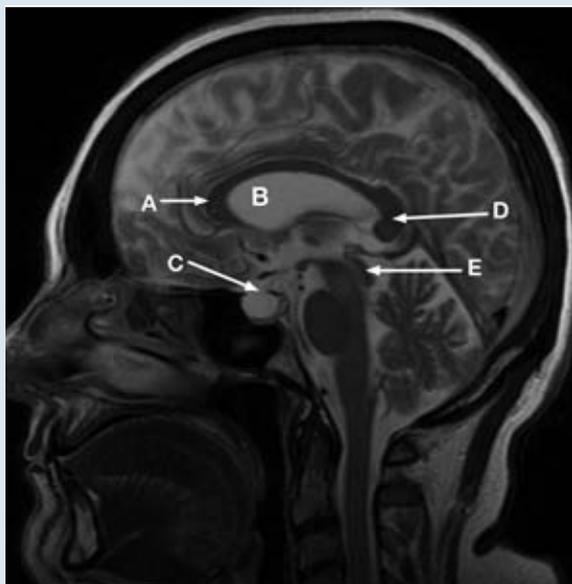
At baseline, 5.4% of the women in the screened group tested positive for chlamydia compared to 5.9% of the controls. Over the following 12 months, 1.3% of the screened women developed pelvic inflammatory disease compared with 1.9% of the controls.

Which of the following statements, if any, are true?

- The percentage of women with chlamydia at baseline estimated the population prevalence
- Women who developed pelvic inflammatory disease during follow-up are known as incident cases
- The proportion of the control group that developed pelvic inflammatory disease in the follow-up period estimated the population incidence
- The incidence rate of pelvic inflammatory disease for the control group was 19 cases of pelvic inflammatory disease per 1000 woman years

Submitted by Philip Sedgwick

Cite this as: *BMJ* 2010;341:c4709



### ANATOMY QUIZ

#### Sagittal T2 weighted magnetic resonance image of the brain

Identify the structures labelled A, B, C, D, and E in this sagittal T2 weighted magnetic resonance image of the brain.

Submitted by A Nair

Cite this as: *BMJ* 2010;341:c4678

### CASE REPORT

#### Persistent cough and weight loss

A 22 year old female Lithuanian student studying in the United Kingdom presented to her university's health centre on several occasions over a three month period starting in May 2008. She had moved to the UK in 2004 and had received the BCG vaccination some years previously. She described cough productive of sputum and night sweats, and she was given three courses of antibiotics that had little effect.

By August 2008, the patient had lost 4 kg in weight and was referred to her local hospital. On examination the only findings were a temperature of 37.6°C and a mild expiratory wheeze. Chest radiography showed a small patch of left upper lobe consolidation. Sputum was collected for examination, and she was treated empirically with doxycycline and co-amoxiclav. She was HIV negative.

The patient was seen in the chest clinic the following week and informed that sputum microscopy had shown acid fast bacilli. She was started on rifampicin, isoniazid, pyrazinamide, ethambutol, and pyridoxine. Sputum culture confirmed *Mycobacterium tuberculosis* shortly afterwards.

Review two weeks later suggested that the patient was improving. One month after starting therapy for tuberculosis, the clinic was contacted by the National Mycobacterium Reference Laboratory and informed that the patient's isolate was resistant to all tested first line drugs. All four anti-tuberculous agents were stopped pending further sensitivity data. Three weeks later, the National Mycobacterium Reference Laboratory issued a further report confirming resistance to all fluoroquinolones and kanamycin sulphate.

- How is drug resistant tuberculosis defined and how would you classify this case?
- How would you manage this patient?
- What measures should be taken in the interests of public health?
- What is the prognosis for patients with drug resistant tuberculosis?
- What are the risk factors for multidrug resistant tuberculosis in the UK?
- How might the diagnosis have been made more quickly?

Submitted by E Moran, A McGown, and C Conlon

Cite this as: *BMJ* 2010;341:c3756

### ON EXAMINATION QUIZ

#### Penicillins

This week's question is on penicillins and is taken from the onExamination revision questions for the MRCS part 1 exam.

Which of the following statements, if any, are true?

- Penicillins are bactericidal
- Penicillins exert their actions by combining with a transpeptidase
- Penicillins can be inactivated by plasmid encoded enzymes
- Penicillins have significant toxic effects on humans
- Penicillins have a spectrum of action that is independent of the  $\beta$  lactam side chain