

FOR SHORT ANSWERS

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FOR LONG ANSWERS

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PICTURE QUIZ Black legs

A 62 year old man with a 20 year history of chronic alcoholism presented to our hospital with severe diarrhoea. Since his company went bankrupt in 2008, he had been living on the streets without receiving welfare benefits. On examination, he was emaciated and gave off a pungent smell. He seemed to be alert but could not give a personal history. Neurological examination was unremarkable, although his deep tendon reflexes were reduced in all extremities. He had black discoloured skin lesions on both lower legs, below the hem of his knee length trousers (fig 1). Serum biochemistry showed decreased concentrations of niacin (2.1 µg/ml; normal 4.7-7.9) and thiamine (17 ng/ml; normal 28-56). A week after admission, when asked how he had spent the past few days, he answered without hesitation, "I returned from business yesterday. I'm going to play golf with a customer today." When asked 10 minutes later, he replied, "I was at home." Brain magnetic resonance imaging was performed (fig 2).



Fig 1

- 1 What is the most likely cause of the skin lesions on the patient's lower legs?
- 2 What symptom can be deduced from his response to episodic memory questions a week after admission?
- 3 What do the brain magnetic resonance imaging scans show and what is the likely diagnosis?
- 4 How would you plan the management of this patient?

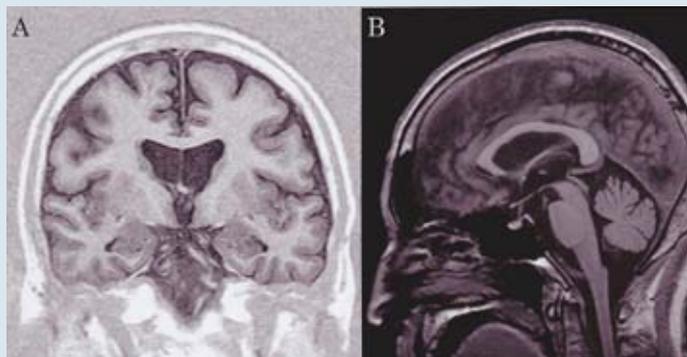


Fig 2

Submitted by Futoshi Shintani and Masaki Izumi
Cite this as: *BMJ* 2010;341:c3511

ON EXAMINATION QUIZ Asthma

This week's question is on asthma and is taken from the OnExamination revision questions for the MRCP Part 1 exam.

Which of the following signs and symptoms, if any, indicate a severe asthmatic attack in a teenager?

- A peak expiratory flow rate of less than 50% of predicted rate
- A respiratory rate of more than 25 breaths a minute
- A PaCO₂ of more than 37.5 mm Hg (5.0 kPa)
- A PaO₂ of 67.5 mm Hg (9 kPa)
- Loud expiratory and inspiratory wheezes

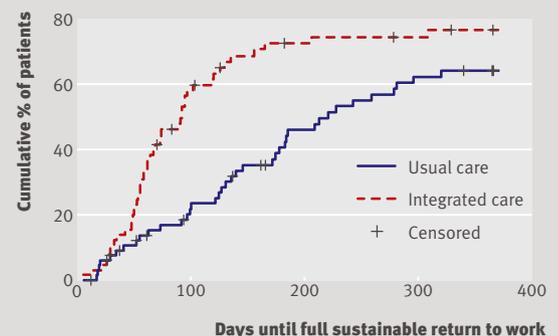
STATISTICAL QUESTION

The log rank test

The previous two statistical questions described survival (time to event) data. The example used was a randomised controlled trial that evaluated the effectiveness of an integrated care programme compared with usual care in facilitating the return to work of patients with chronic low back pain. The integrated care programme was a combined patient and workplace directed intervention.

Trial participants were adults aged between 18 and 65 years who had experienced low back pain for more than 12 weeks, were in paid work, and were absent or partially absent from work. The primary outcome was duration of time off work—that is, from randomisation until a fully sustained return to work.

Participants were followed for 12 months. The survival (time to event) data for the two treatment groups were compared statistically using the log rank test (P=0.003). Days until a fully sustainable return to work for the group on the integrated care programme and the usual care group were plotted as Kaplan-Meier survival curves.



Kaplan-Meier survival curves showing the time until a fully sustained return to work for patients in the integrated care programme and those receiving usual care. Censored observations are displayed by crosses on the curves

Which of the following, if any, are true?

- The log rank test facilitates testing of the null hypothesis—in this case, that there are no differences in survival times in the population between the integrated care programme and usual care
- Censored observations were excluded before the interventions were compared statistically
- A statistically significant difference in survival times existed between interventions at the 5% level of significance
- The log rank test provides an estimate of the magnitude of the difference in survival times between interventions

Submitted by Philip Sedgwick
Cite this as: *BMJ* 2010;341:c3773