

ENDGAMES

We welcome contributions that would help doctors with postgraduate examinations. We also welcome submissions relevant to primary care. See thebmj.com/endgames for details

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FOR SHORT ANSWERS See p 34

FOR LONG ANSWERS

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CASE REVIEW

A 56 year old woman with syncope, weakness, and refractory hypotension

A 56 year old woman with hypothyroidism after total thyroidectomy presented to the emergency department after an episode of near syncope. When she arrived she had hypotension and atrial fibrillation, with a rapid ventricular response. She reported a history of progressive weakness, weight loss, polyuria, polydipsia, anorexia, and fatigue. Urine analysis was positive for leucocyte esterase and pyuria. She was admitted to the intensive care unit with a diagnosis of severe sepsis of urinary source and atrial fibrillation with a rapid ventricular response. After aggressive fluid resuscitation and the administration of intravenous antibiotics, her heart spontaneously converted to a normal rhythm and she appeared well perfused but remained hypotensive. Review of her medical record showed that her therapeutic thyroxine replacement had recently been decreased because of low thyrotrophin. On perusal of her records from another facility it was noted that she had undergone pituitary mass resection and irradiation 20 years earlier.

After empirical treatment with thyroid hormone and glucocorticoids her hypotension resolved. On day four she demonstrated haemodynamic stability and was transferred to the ward. On day five she manifested dilute polyuria (urine osmolality of 71 mOsm/kg (reference range 400-1100) and hypernatraemia (serum sodium of 159 mEq/L; 135-146)), consistent with diabetes insipidus, and treatment with desmopressin was started.

- 1 What is the unifying endocrine diagnosis in this patient?
- 2 What laboratory test should be used to monitor her thyroid function?
- 3 What precipitated the diabetes insipidus?

Submitted by Amaya George, Michael Phillips, Lori Sweeney, and Christopher Colombo

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STATISTICAL QUESTION

Placebos and sham treatments

The effectiveness of topical chloramphenicol in preventing wound infection after minor dermatological surgery was evaluated. A randomised placebo controlled superiority trial was performed. Participants were patients with high risk sutured wounds who had undergone minor surgery. The intervention was a single application of topical chloramphenicol ointment to the sutured wound immediately after suturing. Chloramphenicol ointment is an antibiotic indicated for the treatment of bacterial conjunctivitis, but it is often used as prophylaxis for, or treatment of, wound infection, although little evidence exists for its effectiveness.

The control treatment was placebo ointment, which consisted of a mixture of soft white and liquid paraffin with no known anti-infective properties. In total, 972 patients were recruited and randomised to topical chloramphenicol ointment (n=488) or placebo (n=484). All participants were instructed to follow standard management, keeping their wound dry and covered for 24 hours after surgery.

The primary outcome was infection on the agreed day of removal of sutures or sooner if the patient re-presented with a perceived infection. The percentage of participants with an

infection in the topical chloramphenicol group was significantly lower than in the placebo group (6.6% v 11.0%; difference -4.4%, 95% confidence interval -7.9% to -0.8%; P=0.010). Although the application of a single dose of topical chloramphenicol to high risk sutured wounds after minor surgery produced a statistically significant reduction in the infection rate, the researchers concluded that the reduction was not clinically significant because it was only a moderate reduction.

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

- a) The control treatment is referred to as a sham treatment
- b) The control treatment is described as a positive control
- c) The percentage of patients with an infection in the control group estimated the placebo response
- d) The current version of the Declaration of Helsinki permits the use of placebos in randomised controlled trials

Submitted by Philip Sedgwick and Carwyn Hooper

Cite this as: BMJ 2015;351:h3755

SPOT DIAGNOSIS A painful hand after a fall

A 33 year old man presented to his local emergency department after having fallen on to clenched knuckles from standing height. On examination he had a swollen painful right hand. A plain lateral radiograph was taken of the hand. What is the diagnosis?

Submitted by Adam Monsell and Vipin Asopa

Patient consent obtained.

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ANSWERS TO ENDGAMES, p 35

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CASE REVIEW

A 56 year old woman with syncope, weakness, and refractory hypotension

- 1 Panhypopituitarism secondary to radiotherapy.
- 2 Thyrotrophin is unreliable (although typically low relative to thyroid function) in central hypothyroidism, and triiodothyronine or thyroxine should be monitored instead.
- 3 Glucocorticoids may uncover partial or compensated diabetes insipidus.

STATISTICAL QUESTION

Placebos and sham treatments

Statements *c* and *d* are true, whereas *a* and *b* are false.

SPOT DIAGNOSIS

A painful hand after a fall

Carpometacarpal dislocation.

See [thebmj.com](https://www.bmj.com) for extended answer and discussion.

