

ENDGAMES

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STATISTICAL QUESTION

Understanding why “absence of evidence is not evidence of absence”

Researchers investigated the effects of a low glycaemic index diet in pregnancy on maternal and neonatal morbidity in a group of women at risk of fetal macrosomia (large for gestational age infants). A randomised controlled superiority trial was performed. The intervention consisted of a low glycaemic index diet from early pregnancy. The control treatment was no dietary intervention. Participants were women without diabetes, all in their second pregnancy, who had previously delivered an infant weighing greater than 4000 g. In total, 800 women were recruited and randomised to the intervention (n=394) and control treatment (n=406).

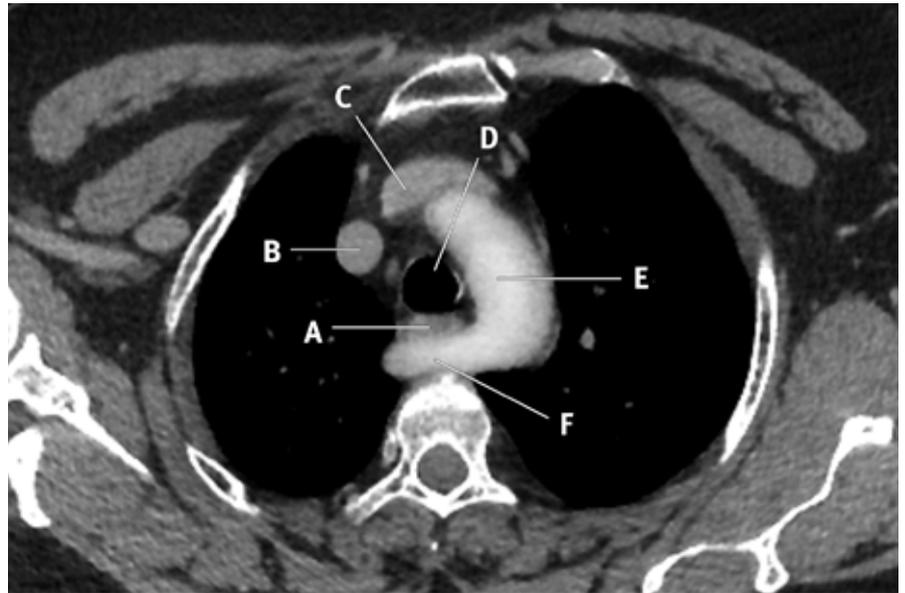
The primary outcome was birth weight and the secondary outcome gestational weight gain. The mean birth weight for the intervention group was greater than for the control group, although the difference was not significant (4034 (SD 510) v 4006 g (497); mean difference 28.6 g, 95% confidence interval -45.6 to 102.8; P=0.449). Mean gestational weight gain was significantly less for the intervention arm (12.2 v 13.7 kg; mean difference -1.3 kg, -2.4 to -0.2; P=0.01). The researchers concluded that a low glycaemic index diet in pregnancy did not significantly reduce birth weight for large for gestational age infants, but it did have a significant effect on reducing gestational weight gain for women at risk of fetal macrosomia.

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

- In the population, it can be inferred that no difference exists between the low glycaemic index diet and the control treatment in mean birth weight
- The lack of significance between treatment groups in birth weight could have been the result of a type II error
- The alternative hypothesis of the statistical hypothesis test for gestational weight gain is true

Submitted by Philip Sedgwick

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ANATOMY QUIZ

Axial post-contrast computed tomogram at the level of the aortic arch

Identify the structures labelled A, B, C, D, E, and F in this axial post-contrast computed tomogram at the level of the aortic arch. What is the clinical significance of the structure labelled F?

Submitted by Emily Skelton and David C Howlett

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PICTURE QUIZ

More than just a simple fracture

A 10 year old white girl presented to our emergency department after falling on to her left arm while cart wheeling in her garden. After the fall, she had pain and was reluctant to move her arm. She had no symptoms before the fall and no other injuries at the time. She was otherwise fit and well with no medical history of note.

On examination, she had mild swelling of her left upper arm, which was tender. The skin was intact with no bruising or other external signs of injury. No deformity of the upper limb was noted, and her distal neurological and vascular status was normal on examination. This was an isolated injury. Basic observations including heart rate, blood pressure, and temperature were all normal. She was otherwise well.

Plain anteroposterior (figure) and lateral radiographs of the left shoulder were requested.



1. What does the radiograph show?
2. What in this case suggests that this is an atypical injury?
3. What is the differential diagnosis?
4. How would you confirm the diagnosis?
5. How would you manage patients with this condition?

Submitted by Mohammed Monem and Alex Trompeter

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