QUESTION 22
A 43-year-old woman presents with intermittent exertional dyspnoea and nocturnal cough suggestive of asthma.

She is a lifelong non-smoker. Which one of the following results is most specific for the diagnosis of asthma?

A. Methacholine PC20 (provoking concentration producing a 20% fall in forced expiratory volume in 1 second (FEV₁)) <16mg/mL.
B. Fall in FEV₁ of 15% with hypertonic saline challenge.
C. FEV₁/forced vital capacity (FVC) <80%.
D. Increase in FEV₁ of 10% after bronchodilator administration.
E. Peripheral blood eosinophilia.

British Guideline on the management of asthma
http://erj.ersjournals.com/journals.library.austin.org.au/content/vol26/issue5/

Key to diagnosis using a specific test is the change in FEV₁ ≥ 15% - so increase following short acting β2 agonist or trial of steroids pred 30mg 14 days or decrease to airway responsiveness challenge: 6 mins exercise; histamine; methacholine; hypertonic saline

Both A and B meet the criteria ie change by 15%

From lecture series week 8 lecture 2 Dr Garun Hamilton

Hypertonic Saline challenge

- Excellent specificity but poor sensitivity for diagnosis of asthma
- High sensitivity and specificity for diagnosis of exercise induced bronchospasm
- Useful for assessment of scuba diving risk

Methacholine challenge test

- Good sensitivity but poor specificity for diagnosis for asthma
- Causes of false positive
  - COPD/bronchiectasis/CF
  - Atopy
  - Post URTI
- If low-moderate clinical suspicion and negative test – high negative predictive value (used this way in chronic cough assessment)

Answer: B