EBM case presentation

Intern 林定筠
Director Dr. 賴俊良
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Clinical scenario

- This is a 17-year-old boy admitted with chief complaint of insidious onset of intermittent backache over right scapula for 5 days without dyspnea or diaphoresis.
- He has no known pulmonary disease before.
- Chest film showed 60% pneumothorax in the right hemithorax.
- Oxygen therapy with 15 liters/minute via non-rebreathing mask was prescribed.
Question

- **P:** young adult with primary spontaneous pneumothorax, the first episode
- **I:** oxygen therapy
- **C:** observation
- **O:** spontaneous resolution rate
Search strategy

- PubMed
- #1 spontaneous pneumothorax Limits: Humans, English, All Adult: 19+ years, Adolescent: 13-18 years
- #2 oxygen therapy

→ 7 papers were found.
1: Optimal timing for surgical treatment to prevent recurrence of spontaneous pneumothorax.
2: Pneumomediastinum and pneumothorax associated with labour.
3: Bilateral spontaneous pneumothoraces, pneumopericardium, pneumomediastinum, and subcutaneous emphysema: a rare presentation of paraquat intoxication.
4: The management of spontaneous pneumothorax and bullous emphysema.
5: Unilateral pulmonary oedema after drainage of spontaneous pneumothorax.
6: Oxygen therapy for spontaneous pneumothorax.
7: Acute pulmonary edema following the treatment of spontaneous pneumothorax with excessive negative intrapleural pressure.
Oxygen therapy for spontaneous pneumothorax.

Northfield TC.
Evidence appraisal

- **Study design**
  Prospective non-randomized clinical trial

- **Patient & method**
  - Group 1: It contained 12 patients who had been treated in hospital by bed rest and observation alone. All were male, aged 17 to 51 (mean 25) years.
  - Group 2: It contained 10 patients who were treated intermittently with high concentration oxygen for periods of 9 to 38 hours at a time. This procedure was thought to be in the interests of the patients concerned. During the intervening periods the patients breathed air, thus acting as their own controls. Nine of them were male and one female, aged 15 to 67 (mean 34) years.
While breathing air the mean rate in group 2 (4.8 cm²/24 hours) was the same as that in group 1. While breathing oxygen, however, the rate of absorption in group 2 increased by a factor of 3.7 to a mean value of 17.9 cm²/24 hours (P<0.01).
Evidence appraisal

- **Result-2**
- The rate in those with an initial pneumothorax size of more than 30% of the pleural cavity (taken as more than 75 cm²) increased by a factor of 5-2 to a mean value of 25.2 cm²/24 hours, whereas in those with an initial pneumothorax size of less than 30% it increased by a factor of 2.2 to a mean value of 10.4 cm²/24 hours (P<0.01). While breathing air the mean rate of absorption in both groups taken together was 5-1 cm²/24 hours in those having an initial pneumothorax size of more than 30%, and this was not significantly different from. The mean rate (4.6 cm²/24 hours) in those having a small pneumothorax.
Evidence appraisal

**Conclusion**

- oxygen therapy resulted in a fourfold increase in the mean rate of absorption.
Comments

- The importance of the key wards
- Different age might have different name for the same thing
- The rational of the alternative strategy