Case-2 : Shortness of breath: Student Handout

Part 1

Muhammed is a 49 years old engineer who was recently diagnosed to have a high blood pressure. Just recently the doctor started Muhammed on beta blockers for his high blood pressure and low- dose aspirin for its cardio-protective role.

A few days later Muhammed started to have repeated cough and difficulty in breathing. He ignored it in the beginning but his condition worsened and he started to experience chest tightness and extreme difficulty in breathing. Muhammed felt scared that he was having a heart attack and immediately went to the hospital emergency..

Past medical history

No history of angina, past surgery or any hospital admissions.

Allergy and Medication

Started taking beta blockers and low dose aspirin for his raised blood pressure 3 weeks back.

Family history

His parents are alive and healthy. He has two younger brother and his youngest brother was also diagnosed with a high blood pressure and is taking medication.

Alcohol and smoking

Muhammed smokes 20 cigarretes a day for the last 25 years. No history of alcohol consumption.

Social history

Muhammed has been married for the last 20 years and has two grown up children in universities. He is an engineer at a local paint factory and has been working there for the last 20 years.

Part 2, Clinical examination

Muhammed is in sitting uncomfortably in a chair. He is making an effort to breath. He is 170 cm tall and his body weight is 80 Kg.

His vitals are as follows:

Pulse: 100 beats/min

Blood pressure: 130/90

Respiratory rate: 30 breaths/min

Temperature: 37.2 °C

Chest and Heart Examination:

Bilateral Polyphonic expiratory wheezing. Normal heart sounds.

Part 3, Investigations

Muhammed was immediately investigated for a heart attack. However his ECG was normal and the cardiac enzymes are also normal.

Chest X ray: normal

Lung Function Tests:

Peak expiratory flow rate (PEFR) is low (300 L/min) , but after Muhammed is given a nebulization of beta agonist (Salbutalmol) his PEFR is measured and becomes near normal (420 L/min).

Complete blood count: normal

Learning objectives of the case

By the end of the case the student should be able to

1. Enlist the differential diagnosis of dyspnea according to the symptoms experienced by the patient.
2. Determine the most likely diagnosis of this patient and explain why.
3. Justify the abnormal findings in the history and clinical examination.
4. Enumerate any further investigations required.
5. Devise the management plan in treating a patient with asthma.
6. Describe the prophylactic and long term treatment of asthma.
7. Discuss the step wise management of asthma.

8. Highlight the mechanism of action for the drugs in a step wise management.
9. Discuss the non-drug advices the doctor has to give to the patient.
10. Discuss the risk factors of smoking
11. Demonstrate an understanding of status asthmatics, in terms of:
    - Risk factors in developing severe
    - Criteria in diagnosing severe asthma
    - Pathophysiology of developing severe asthma
    - Treatment aims and treatment options in such a condition.

Instruction to the students:

Please read the case carefully, individually or in the group before you come to the "Case based learning" session. Look at the objectives and try to fulfill them. Prepare for the case well by referring to some suggested reading list. The tutor in CBL session will ask you to go through the case and answer some of his stimulating questions to ensure that you have achieved the objectives

Suggested Reading:

- Clinical Medicine: Kumar P and Clark M. Clinical Medicine. 7th ed. Edinburgh: WB Saunders, 2009.

- Clinical examination: Nicholas J. Talley and Simon O'Connor. Clinical examination: A Systematic Guide to Physical Diagnosis. 6th Revised edition, 2009

Important Information to students:

- The students are expected to read the case and related question carefully, before they come case-based discussion session.

- Every student must bring the following book to the session:

  Clinical methods by McLeod