

# Free case study on pathophysiology of disease case studies

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a) Among the major signs of pneumonia are persistent coughs with sputum, fever and chest pains during inhalation, shortness of breath and headaches (Schiffman, 2012). In the case provided, Evelyn had the exact signs and symptoms as the ones that cause pneumonia and is therefore, suffering from pneumonia.

b) The history of the patient in the case study and the tests done indicate that the pneumonia Evelyn is suffering from is viral pneumonia. The history of the disease, over a month of experiencing symptoms of fever, headache and persistent cough indicate the patient is suffering from the mild form of viral pneumonia. Examination of Sputum samples also indicates the patients have influenza. Influenza is one of the viruses that cause viral pneumonia (Schiffman, 2012).

c) The two ways that Evelyn could have used to prevent pneumonia are  
1) Vaccination with the pneumococcal polysaccharides vaccine. This vaccine is administered mainly to adults at high risk developing pneumonia especially the elderly (Schiffman, 2012). Evelyn age of 65 qualifies her to take this vaccine.

2). the other method that Evelyn could have used to prevent pneumonia infection is maintaining high levels of hygiene and a healthy lifestyle. Maintaining a healthy diet and exercise program to keep the immune system strong reduces the susceptibility to pneumonia infection (Schiffman, 2012).

- d) The ideal treatment plan that the doctor prescribed for Evelyn is the combination of antiviral drugs and an antibiotic. Beta lactamase stable antibiotics like combination of amoxicillin and clavulanic acid and antiviral drugs are the best combination of treatment for pneumonia (Schiffman, 2012).
- e) The doctor prescribed a combination of antiviral treatment and antibiotics to Evelyn because in many cases, a viral pneumonia infection is usually followed by a bacterial pneumonia infection. The doctor prescribed the antibiotics to prevent a secondary bacterial pneumonia infection from infecting Evelyn.
- f) After a month of treatment with antiviral drugs and antibiotics and there is no response from the patient; Evelyn, the doctor should start checking for symptoms of tuberculosis. This is important because the symptoms of tuberculosis resemble those of other disease like pneumonia like fever headache and persistent coughing (Schiffman, 2012).

The symptoms of tuberculosis may manifest for a short time and they then they go away only to return after a long time. A bloody cough is a sign of tuberculosis and this should also make the doctor suspect tuberculosis infection in the patient.

A). Exercise induced asthma is a condition that occurs when the airways in the body narrow as a result of engaging in exercise. The main symptoms of exercise induced asthma are shortness of breath and coughing. There is also an elevation of the respiration rate and a wheezing sound during breathing. Other signs of exercise induced asthma include chest tightness, chest pains

and extreme fatigue (Kenneth, 2002).

B). Exercise induced asthma is a very common disease. The prevalence rate in athletes is 10 to 50 percent but the prevalence increases with participation in cold weather sports. Apart from athletes, school going children are also a major group that suffers from exercise induced asthma because exercises form part of schools activities. There are no clear statistics about prevalence of the disease due to the difficulty in clinical diagnosis because in eighty percent of the cases of asthma attacks, exercise is the main trigger (Kenneth, 2002).

D) The three goals of treatment in exercise induced asthma are prevention of asthma attacks, to have fewer side effects from medication and maintaining a normal or near normal functioning of lungs to allow the patient to carry on with normal activities (Kenneth, 2002).

E) Inhaled short acting beta agonist bronchodilators are the form of medication mostly used in treatment of exercise induced asthma. They are normally taken half an hour before exercise. Examples are salbutamol (ventolin) and pirbuterol (Maxiar). An ideal dosage of a short acting beta agonist bronchodilator would constitute two to five inhalations before exercise (Kenneth, 2002).

The effects of a short term acting beta 2 bronchodilator last for four to six hours in the body but the effects of longer acting beta 2 agonist bronchodilators like salmeterol and formoterol last for up to twelve hours in the body (Kenneth, 2002).

F) Jeremy does not have to discontinue from playing soccer although he has

exercise induced asthma. This is because the prognosis of exercise induced asthma is good with the proper use of medication.

## **References**

Kenneth R. (2002) Exercise induced asthma: pathophysiology and treatment.

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Schiffman G. (2012). Pneumonia. Retrieved from

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