Epidemology case study essay

R. S. has smoked for many years and has developed chronic bronchitis, a chronic obstructive pulmonary disease (COPD). He also has a history of coronary artery disease and peripheral arterial vascular disease. His arterial blood gas (ABG) values are pH = 7. 32, PaCO2 = 60 mm Hg, PaO2 = 50 mm Hg, HCO3- = 30 mEq/L. His hematocrit is 52% with normal red cell indices. He is using an inhaled ß2 agonist and theophylline to manage his respiratory disease. At this clinic visit, it is noted on a chest x-ray that R. S. has an area of consolidation in his right lower lobe that is thought to be consistent with pneumonia.

Discussion Questions1. What clinical findings are likely in R. S. as a consequence of his COPD? How would these differ from those of emphysematous COPD? – Bronchitis Polycythemia is a prominent clinical finding from the result of COPD. – This clinical finding differs from regular COPD because emphysematous COPD sometimes starts as bronchitis and develops into emphysematous COPD.

2. Interpret R. S.’s laboratory results. How would his acid-base disorder be classified? What is the most likely cause of his polycythemia? -R. S. laboratory results would classify his condition as compensated respiratory acidosis. Which means his decreased ventilation causes an increase in blood carbon dioxide and a decreased pH. – Since R. S. has a decreased ventilation rate his body will try and produce more RBCs to make up for the lack of oxygen traveling through the body. Since the body is not used to this increased response of the RBC production that will most likely be the cause of his polycythemia.