

Study the Relationship of Erythropoietin and Chronic Obstructive Pulmonary Disease

Abstract:

Rational: It has long been known that COPD causes polycythemia secondary to erythrocytosis caused by hypoxia present in advanced cases of COPD. However, it was shown in several studies that some COPD patients had anemia rather than erythrocytosis. Revealing the changes which occur in erythropoiesis in response to COPD was the aim of the current study. **Methods :** 41 COPD patients of different groups according to the inclusion and exclusion criteria and ten healthy control subjects age and sex matched were enrolled in the study. For all, history taking and full Clinical exam were performed, also ABGs, PFT (spirometry), routine labs (CBC, liver and renal function) and determination of EPO should be performed on human serum by ELISA. **Results :** Showed that the erythropoietin level was 15.24 ± 2.6 in stage 1, 22.61 ± 5.68 in stage 2, 33.59 ± 4 , in stage 3, then 17.9 ± 3.3 in stage 4. Also, the total percentage of anemia in COPD patients was 46.3% (19/41), in comparison to 51.3% (21/41) non anemic and 2.4% (1/41) polycythemic. And that the percentage of anemia was 27.3% in stage 1, followed by 38.0% in stage 2, 100% in stage 3 then dropped to 58.33% in stage 4 with emergence of polycythemia in 8.33% of cases. **Conclusion:** Although COPD was thought to cause polycythemia, the current study showed that almost half of patients have anemia, and polycythemia occurred only in the advanced stages. It also appeared that response to erythropoietin in COPD is probably blunted especially with increased severity of the condition. This might be considered as a contributing factor in the development of anemia in COPD which is considered as anemia of chronic disease.

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