



A STUDY TO COMPARE SERUM ELECTROLYTES, CRP AND VITAMIN D3 LEVELS AND ASSESS IT'S PROGNOSIS IN PATIENTS WITH STABLE VERSUS ACUTE EXACERBATION OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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ABSTRACT

COPD is a leading cause of death and therefore is a disease of increasing public health importance around the world. COPD affects 6-10% of the adult population and is a leading cause of morbidity and mortality responsible for 5.1% of all deaths worldwide. Not only a leading cause of death, following an episode of exacerbation of COPD, most patients experience a temporary or permanent decrease in the quality of life. Our study showed there were significant electrolyte abnormalities (Sodium, potassium, calcium, magnesium), derangement of CRP and Vitamin D3 levels in patients with acute exacerbation of COPD as compared to stable COPD patients. We also concluded that electrolyte disturbances, CRP and Vitamin D3 levels were associated with prognostic implications in terms of duration of Hospital stay and number of RCU admissions in patients with acute exacerbation of COPD as compared to patients of stable COPD.

KEY WORDS : COPD, Electrolyte disturbances, CRP, Vitamin D3**INTRODUCTION—**

COPD is a leading cause of death and therefore is a disease of increasing public health importance around the World. COPD affects 6-10% of the adult population and is a leading cause of morbidity and mortality responsible for 5.1% of all deaths worldwide. 1 Not only a leading cause of death, following an episode of exacerbation of COPD most patients experience a temporary or permanent decrease in the quality of life. The economic burden created by an exacerbation of COPD is also very high. In spite of such alarming outcomes, very less is known regarding the precipitating factors of AECOPD especially in a developing country like India.

Though AECOPD patients mostly present with features of acute respiratory infections i.e. cough with expectoration, shortness of breath, there may be a number of metabolic derangements also present as a consequence of the therapy instituted like hypernatremia, hypokalemia, hypocalcaemia and hypomagnesaemia. CRP is an acute phase protein and is synthesized in response to tissue damage and inflammation. It shows the total systemic inflammation in cardiovascular disorders and in COPD. 8 9 Due to an infective etiology mostly, the CRP levels in AECOPD patients may also be raised. Derangements in vitamin D3 levels are also associated with an acute episode of COPD.

Thus overlooking these simple blood parameters may lead to a greater deal of mortality and morbidity in COPD patients. With this background, in the present study I wish to measure the concentration of Serum electrolytes (Sodium, potassium, calcium, and magnesium), C-reactive protein, Vitamin D3 in COPD patients with acute exacerbation and compare those findings with patients with stable COPD and assess their prognostic implications in terms of the duration of Hospital stay.

CONCLUSION—

- In our study, out of 130 patients, most of the patients were 51-60 years of age. Age was not statistically significant with Group.
- We found that, female population was higher than the male population and female: male ratio was 1.09:1 but this was not statistically significant.

- It was found that, most of the patients had Very Severe in Acute Exacerbation of Copd compared to Stable Copd but this was not statistically significant and we also found that, less of the patients had Group-2 Na (135 to 145) in Acute Exacerbation of Copd compared to Stable Copd it was statistically significant. Association of K Group with Group was statistically significant.
- Our study showed that, less number of patients had Group-2 CA (8.5 To 10.2) in Acute Exacerbation of Copd compared to Stable Copd it was not statistically significant. More number of patients had Group-2 Mg (1.7 To 2.2) in Stable Copd compared to Acute Exacerbation of Copd which was statistically significant. Association of CRP Group with Group was statistically significant. Distribution of mean Na with Group was not statistically significant.
- We showed that, majority number of patients had Group-3 VIT (>30) in Stable Copd compared to Acute Exacerbation of Copd it was statistically significant. Only 17 patients had Non Invasive and 10 patients had Mechanical Ventilation, 26 patients had RCU Admission. And the mean Age was more in Stable Copd compared to Acute Exacerbation of Copd but this was not statistically significant. Distribution of mean FEV1 with Group was not statistically significant.
- We observed that, the mean K was less in Stable Copd compared to Acute Exacerbation of Copd but this was not statistically significant and we also found that, the mean CA was more in Stable Copd compared to Acute Exacerbation of Copd but this was not statistically significant. Distribution of mean MG with Group was not statistically significant; the mean CRP was lower in Stable Copd compared to Acute Exacerbation of Copd which was statistically significant. Distribution of mean VIT D with Group was statistically significant.

We concluded that electrolyte disturbances, CRP and Vitamin D3 levels were associated with prognostic implications in Patients with acute exacerbation of COPD as compared to patients of stable COPD.

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