Comparison of End Tidal Carbon dioxide (ETCO2) and Arterial Blood Bicarbonate levels in patients with COPD exacerbation referred to Emergency department

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Abstract:

Introduction:

Measurements of ABG are used as the gold standard for monitoring oxygenation and also assess the amount of Co2 retention in patients with acute exacerbation of COPD that ABG is an invasive procedure and in addition to being costly, can do only be discontinuous monitoring of oxygenation and retention of Co2.

Capnography is the method that uses infrared light can be used to measure the amount of carbon dioxide in exhaled breath air and it can be used to monitor the retention of Co2 without use ABG repeated.

The aim of this study was to compare ETco2 with bicarbonate levels in blood in patients with chronic obstructive pulmonary disease exacerbations.

Methods:

In a cross-sectional and descriptive-analytical study that performed in Emergency Department of Tabriz University of Medical Sciences on COPD patients referred to Imam Reza hospital, ETco2 level with bicarbonate levels in blood in patients with chronic obstructive pulmonary exacerbation was evaluated.

Results:

35(62.5%) of patients were male and 22(37.5%) of them were female. Mean age of male patients was 67.45 ± 11.77 year and in female patients was 69.90 ± 10.60 year.

Mean Co2 level with Capnography in patients with COPD was 41.82 ± 13.84 and mean Co2 level with ABG in patients with COPD was 66.85 ± 20.12.

Mean Co2 level with ABG was significantly higher than mean Co2 level with Capnography in patients with COPD.

Conclusion:

Significant indirect liner correlation was found between Co2 levels with Capnography with blood PH at studied patients.

Significant direct liner correlation was found between Co2 level with Capnography with PCo2 and HCo3 of patients in ABG. In patients with COPD, Cut-off-Point ET-Co2 with Ph<7.3 Was calculated 36.5.

Key Words:

COPD, Capnography, ED-Co2