Association of end-tidal carbon dioxide values with severity of metabolic acidosis and the need for emergency dialysis in patients with renal failure

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Introduction:

One of the most common disorders in patients with renal failure is metabolic acidosis, and if that is refractory to medical therapy, is indicated for initiation of dialysis treatment.

There are challenges on how to measure acidosis-y-alkalosis levels. Capnography is non-invasive device to measure end-tidal carbon dioxide partial pressure.

The aim of this study was to investigate the relationship between the levels of end-tidal carbon dioxide acidosis with acidosis level and requiring to emergency dialysis in patients with renal failure.

Methods:

In a cross-sectional and descriptive - analytical study that performed in emergency ward of Tabriz University of Medical Sciences on patients with renal failure, correlation of end-tidal carbon dioxide levels with acidosis level and requiring to emergency dialysis in patients with renal failure evaluated.

Results:

51(56.7%) of patients were male and 39(43.3%) of them were female. Mean age of male patients was 55.48 ± 21.47 year and in female patients was 58.36 ± 18.35 year.

Mean Co2 level with Capnography in patients was 17.13 ± 7.05 and mean Co2 level with ABG in patients was 29.06 ± 10.65. Significant direct liner correlation was found between Co2 level with Capnography with PH, PCo2, HCo3 and BE level in

ABG. Mean Co2 level with Capnography in patients with chronic acute renal failure was 17.60 ± 7.25 and in patients with acute renal failure was 16.03 ± 6.57.

Conclusion:

In patients with acute renal failure, Cut-off-Point ET-Co2 with Ph=7.3 and Hco3=15 Was calculated 24.

In patients with chronic renal failure, Cut-off-Point ET-Co2 with Ph=7.3 was 22 but with HCo3 = 15 determine Cut-off-Point of ET-Co2 Not calculable.

Key Words:

Renal Failure, Metabolic Acidosis, Capnography