DEPARTMENT OF BIOCHEMISTRY
UNIVERSITY COLLEGE OF MEDICAL SCIENCES

BIO Pract BI 6.8: Interpretation of ABG Analysis
For classes to be held on 16/03/2020(AB Batch) & 17/03/2020 (CD Batch)

Instructions

1. The students are required to solve the cases given below and submit them as Assignments once Classes resume.
2. Difficulties faced (if any) will be addressed once classes resume

Case 1

A 45 year old man presented to the ER with acute abdominal pain. A diagnosis of Small Bowel Obstruction was made. Nasogastric tube passed and pain killer was administered on advice of the surgeon on call and the patient was kept under observation. A nurse later found him in a somnolent state. Routine investigations came back normal.

ABG analysis was as follows

pH- 7.46
pO_2- 83mm Hg
pCO_2- 70 mm Hg
Bicarbonate -30mEq/L

Q) Interpret the ABG findings and comment on the pathogenesis of the condition.

Case 2

A 65 yr old man was brought to the ER with complaints of severe nausea and weakness. He is a known case of Peptic Ulcer Disease and was experiencing abdominal pain for the last 2 weeks for which he self prescribed Antacid (calcium carbonate) and Milk of Magnesia.

Blood investigations and ABG were done which showed the following:
Se Calcium- 11.5 mg/dl
Se Sodium/Potassium/Chloride- 139/4.0/99 mg/dl
pH- 7.45
pO_2- 69 mm Hg
pCO_2- 49 mm Hg
Bicarbonate -34 mEq/L

Q) Interpret the ABG findings
Q) What is the most Probable Diagnosis?
Q) Explain the Hypercalcemia with relation to the Acid base Disorder
Q) Calculate the Anion gap

Rafat S.
17/3/2020

Case 3

A 24 yr old male was found lying on the footpath outside a bar. Paramedics arrived and rushed him to a nearby Hospital. Physical examination and Radiological Investigation ruled out trauma. An ABG was done and showed the following

pH- 7.2
pO_2- 65 mm Hg
pCO_2- 60 mm Hg
Bicarbonate -26 mEq/L

Q) Interpret the ABG findings
Q) Explain the pathogenesis of the condition
Q) Why is it an Emergency Condition?

Case 4

A 68 yr old Chronic Smoker ABG showed the following

pH- 7.39
pO_2- 80 mm Hg
pCO_2- 55 mm Hg
Bicarbonate -30 mEq/L

Q) Interpret the ABG findings
Q) What is the Probable Diagnosis?
Q) What is the underlying cause?

Case 5

A 29 year old male patient was brought to the ER after a terrible Motor Vehicular Accident. He suffered fracture Right femur which was managed by orthopedic surgeon on call. 24 hours later, he became delirious with shortness of breath. On examination tachycardia and tachypnea with pin point hemorrhages over the chest and upper extremities.

pH- 7.7
pO_2- 75 mmHg
pCO_2- 20 mm Hg
Bicarbonate -40 mEq/ L

Q) Interpret the ABG findings
Q) What is the underlying cause of shortness of breath?
Q) Explain the ABG findings

Rafats
17/3/2020.