THE ABC’S OF ABG’S

1. WHAT IS THE PH? ACIDEMLIA/ALKALEMIA?

PH<7.40 IS ACIDEMLIA, PH>7.40 IS ALKALEMIA

2. DOES DIRECTION OF PCO2 CHANGE EXPLAIN DIRECTION OF PH CHANGE?

IF YES, IT’S A PRIMARY RESPIRATORY ___OSIS
IF NO, IT’S A PRIMARY METABOLIC ___OSIS

(PCO2 HIGHER THAN 40 SHOULD DROP YOUR PH
PCO2 LOWER THAN 40 SHOULD RAISE YOUR PH)

3. DOES AMOUNT OF PCO2 CHANGE EXPLAIN PH CHANGE?

IF NO, THERE IS ALSO A PRIMARY METABOLIC DISTURBANCE

PH DROPS ABOUT 0.1 FOR EVERY INCREASE IN PCO2 OF 10
(IT'S ACTUALLY A PH DROP OF EXACTLY 0.08.)

4. IS THERE A GAP ACIDOSIS? (>12) (GAP=NA-CL-HCO3)

A RAISED ANION GAP IMPLIES A GAP METABOLIC ACIDOSIS REGARDLESS
OF THE PH OR HCO3.

A RAISED ANION GAP HAS A LIMITED DIFFERENTIAL DIAGNOSIS
(M U D P I L E S  PNEUMONIC)

5. FOR METABOLIC ACIDOSES- CALCULATE PREDICTED PCO2 : USE WINTERS FORMULA:

PCO2 PREDICTED (+/-2) = (1.5 X HCO3)+8
IF PCO2 IS DIFFERENT THAN PREDICED THEN THERE IS AN ADDITIONAL
RESPIRATORY PROBLEM BEYOND MERE COMPENSATION

6. IF THERE IS A RAISED ANION GAP, CALCULATE THE CORRECTED HCO3 TO SEE IF
THERE IS YET ANOTHER METABOLIC DISTURBANCE

DELTA DELTA (DD): DD=GAP-12
DD + PT'S HCO3=X
IF X<24, THEN A PRIMARY NON GAP METABOLIC ACIDOSIS ALSO EXISTS
IF X>24, THEN A PRIMARY METABOLIC ALKALOSIS ALSO EXISTS