

ABG practice examples:

1. Patient in pain post-op, very anxious - *RESPIRATORY ALKALOSIS*

pH	7.49	Alkalosis
PaO ₂	12.5kPa	OK
PaCO ₂	3.7kPa	Alkalosis
HCO ₃ ⁻	26 mmol/l	OK
BE	-2	OK
SaO ₂	96%	OK

2. Patient waiting to be transferred to ITU, remains intubated and ventilated: RR 12, FiO₂ 60% - *RESPIRATORY ACIDOSIS WITH FULL METABOLIC COMPENSATION*

pH	7.36	Normal
PaO ₂	19.5kPa	High
PaCO ₂	8.5kPa	Acidosis
HCO ₃ ⁻	36mmol/l	Alkalosis
BE	+ 8	Excess
SaO ₂	97%	OK

3. Post-operative cholecystectomy, with previous history of recent pneumonia - *RESPIRATORY ALKALOSIS + HYPOXIA*

pH	7.48	Alkalosis
PaO ₂	7.6 kPa	Low
PaCO ₂	3.8kPa	Alkalosis
HCO ₃ ⁻	22mmol/l	OK
BE	-1	OK
SaO ₂	89%	Low

4. Post-op open laparotomy - - *RESPIRATORY ACIDOSIS WITH PARTIAL METABOLIC COMPENSATION*

pH	7.31	Acidosis
PaO ₂	11.8kPa	OK
PaCO ₂	7.1kPa	Acidosis
HCO ₃ ⁻	35mmol/l	Alkalosis
BE	-5	Deficit
SaO ₂	96%	OK

5. Anxious patient in pain following inguinal hernia - *RESPIRATORY ALKALOSIS*

pH	7.49	Alkalosis
PaO ₂	13.0kPa	OK
PaCO ₂	3.5kPa	Alkalosis
HCO ₃ ⁻	26mmol/l	OK
BE	+1	OK
SaO ₂	95%	OK

6. Post I&D groin abscess: Observations BP78/46, HR125, SpO₂ 91%RA, RR 20 - *METABOLIC ACIDOSIS WITH PARTIAL RESPIRATORY COMPENSATION*

pH	7.32	Acidosis
PaO ₂	9.5kPa	Low
PaCO ₂	3.7kPa	Alkalosis
HCO ₃ ⁻	17mmol/l	Acidosis
BE	-8	Deficit
SaO ₂	94%	OK

7. Post-op liver resection with previous history of renal impairment -
METABOLIC ALKALOSIS

pH	7.48	Alkalosis
PaO ₂	12.8kPa	OK
PaCO ₂	5.1kPa	OK
HCO ₃ ⁻	33mmol/l	Alkalosis
BE	+5	Excess
SaO ₂	97%	OK

8. Post-op gynae surgery, pain 8/10 - *RESPIRATORY ACIDOSIS WITH PARTIAL METABOLIC COMPENSATION*

pH	7.32	Acidosis
PaO ₂	9.8kPa	Low
PaCO ₂	7.2kPa	Acidosis
HCO ₃ ⁻	31mmol/l	Alkalosis
BE	+4	Excess
SaO ₂	95%	OK

9. Post-op fractures neck of femur repair following fall at home, history of type 1 diabetes - *METABOLIC ACIDOSIS WITH PARTIAL RESPIRATORY COMPENSATION*

pH	7.33	Acidosis
PaO ₂	11.8kPa	OK
PaCO ₂	3.6kPa	Alkalosis
HCO ₃ ⁻	19mol/l	Acidosis
BE	-5	Deficit
SaO ₂	95%	OK

10. 57 year old man post TURP. Observations BP 101/57, HR 115, Claret coloured urine noted on irrigation – *MIXED RESPIRATORY & METABOLIC ACIDOSIS*

pH	7.27	Acidosis
PaO ₂	12.2kPa	OK
PaCO ₂	8.4kPa	Acidosis
HCO ₃ ⁻	19mmol/l	Acidosis
BE	-7	Deficit
SaO ₂	95%	OK