

Online supplement

Methods

Recruitment

Recruitment for this study was based on a convenience approach during routine working hours. Two research nurses were on the wards for a year and approached any patient who met the criteria. The first patient was included on 03/02/2013 and the last patient on 10/01/2014. Patients were flagged by junior doctors and ward nurses if they were eligible. At busy times not all patients were approached and during holiday periods and weekends the numbers approached dropped. Only 12 of the approached patients declined to take part. There were no dropouts as the study only involved one set of paired samples.

Results

Agreement between arterial and venous pCO₂, pH and HCO₃⁻ with samples limited to ones taken within 15 minutes of each other

	ABG (Mean) (SD)	VBG (Mean) (SD)	Mean Difference (ABG- VBG) (95% CI)	95% Limits of agreement	N
pH	7.41 (0.08)	7.38 (0.08)	0.033 (0.027 to 0.038)	-0.04 to 0.11	168
HCO ₃ ⁻ (mEq/L)	29.38 (6.17)	29.49 (6.23)	-0.13 (-0.287 to 0.021)	-2.15 to 1.88	167
pCO ₂ (kPa)	6.66 (2.35)	7.49 (2.40)	1.86 (1.45 to 2.26)	-3.26 to 6.96	168

Agreement between SaO₂ and SpO₂ with samples limited to ones taken within 15 minutes of each other

	SaO ₂	SpO ₂	Mean Difference (SaO ₂ - SpO ₂) (95% CI)	95% Limits of agreement	N
Oxygen percentage saturation*	90.98 (5.88)	91.0 (3.97)	0.04 (-0.85 to 0.93)	-11.43 to 11.5	163

* in patients with SpO₂ >80%

Agreement between arterial and venous pCO₂, pH and HCO₃⁻ with samples from patients with an initial systolic blood pressure <100mmhg.

	ABG (Mean) (SD)	VBG (Mean) (SD)	Mean Difference (ABG- VBG) (95% CI)	95% Limits of agreement	N
pH	7.40 (0.08)	7.37 (0.07)	0.02 (-0.004 to 0.05)	-0.54 to 0.11	20
HCO ₃ ⁻ (mEq/L)	28.1 (4.9)	28.1 (4.9)	-0.24 (-0.82 to 0.35)	-2.90 to 2.82	20
pCO ₂ (kPa)	6.64 (2.07)	7.24 (1.76)	1.74 (0.39 to 3.1)	-3.88 to 7.36	20

Agreement between SaO₂ and SpO₂ with samples from patients with an initial systolic blood pressure <100mmhg.

	SaO ₂	SpO ₂	Mean Difference (SaO ₂ - SpO ₂) (95% CI)	95% Limits of agreement	N
Oxygen percentage saturation*	90.6 (6.0)	91.3 (7.3)	0.62 (CI -2.4to 3.6)	-11.8 to 13.0	19

* in patients with SpO₂ >80%