Drawing Blood for ABG analysis

Key Terms

Gas analysis	Oxygenation capacity	Respiratory adequacy
Prothombin Time	Allen test	ABG syringe

Introduction

Arterial blood gas analysis is an essential part of diagnosing and managing a patient's oxygenation status and acid-base balance. The usefulness of this diagnostic tool is dependent on being able to correctly interpret the results.

Purpose:

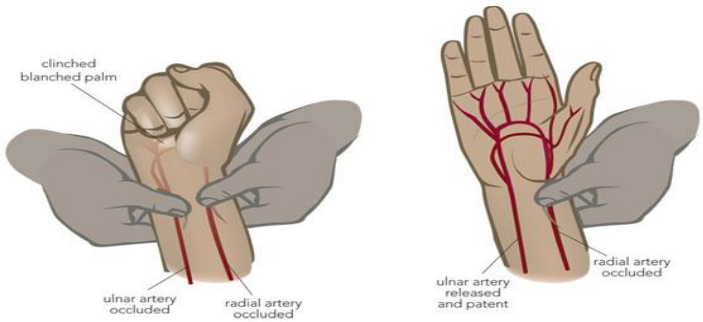
- Assessment of oxygenation capacity
- Assessment of oxygen pressure to guide therapy
- Assessment of respiratory adequacy – oxygen and carbon dioxide measurement to assist with assessment of ventilation rate, depth and pressure
- Assessment of acid-base balance – disease identification and determination of metabolic status

Equipments Needed:

A clean tray containing
- ABG kit- ABG Syringe, Needle (22 G),
- Alcohol swab
- Mackintosh
- Needle cutter
- Kidney tray
- Pair of gloves
- Gauze pieces

Procedure:

S.NO	STEPS	RATIONALE
1	**PREPARATION OF THE PATIENT** Identify the patient .Verify the proper identity of the patient via two patient identifiers	To ensure correct identification and prevent possible problems/ errors
2	Explain the procedure to the patient.	Ensures the patient can make an informed

		decision about going ahead and knows what to expect
13	The syringe must then be labeled	To avoid errors.
3	Check the patient's lab values – notify if the patient's Prothombin Time is greater than 13 seconds	Minimizes the risk of hemorrhage.
4	Prior to drawing a sample, the **Allen test must be performed.** **Allen Test:** a.Obliterate the radial and ulnar pulses simultaneously by pressing on both blood vessels at the wrist. b. Ask patient to clench and unclench his fist until blanching of the skin occurs. c. Release pressure on ulnar artery while compressing radial artery. Watch for return of skin color within 15 seconds.	If the Allen test fails to demonstrate adequate collateral flow, do not use that radial artery.
		
5	Don Gloves	All drawing of blood will be done with protective gloves. All material possibly in

		contact with blood will be regarded as contaminated.
6	Prepare the area with alcohol swabs	To remove the surface microorganism
7	Feel along the course of the radial artery and palpate for maximum pulsation with the middle and index finger.	
8	Remove the cap from the needle. Hold the needle at a 45 - 60 degree angle to the skin surface and advance in to the artery. Once the artery is punctured, arterial pressure will push up the hub of the syringe and a pulsating flow of blood will fill the syringe.	This angle will help us to puncture the artery correctly.
9	Once a minimum of 1.0cc of blood is obtained, withdraw the needle firmly and apply pressure over the site with dry gauze.	To avoid oozing from the puncture site
10	Cut the needle and discard into a sharps container	To avoid needle stick injury
11	Push the plunger up to expel any air bubbles	Air inside the syringe can change the value of the readings
12	Close syringe with rubber cap after cutting needle in a needle cutter.	To avoid mixing of atmospheric air which will change the value of the readings
13	Monitor the puncture site frequently for swelling, including the assessment of distal pulses. Note the color and temperature and sensation of the extremity distal to the puncture site.	Any of these identifications exhibits circulatory or nerve damage

ABG SAMPLING VIA ARTERIAL LINE

EQUIPMENTS NEEDED:

A clean tray containing

- ABG kit- ABG Syringe, Needle (22 G)
- Syringe-10ml
- Alcohol swab
- Mackintosh
- Kidney tray
- Sterile hand care
- Gauze pieces

PROCEDURE:

S.NO	STEPS	RATIONALE
1	Identify the patient .Verify the proper identity of the patient via two patient identifiers	To ensure correct identification and prevent possible problems/

		errors
2	Explain the procedure to the patient.	Ensures the patient can make an informed decision about going ahead and knows what to expect
3	Lay out necessary equipment on cardiac table next to patient bed and within easy reach.	For easy accessibility
4	Place labels on specimens. Verify that the label name and patient are correct.	To avoid errors.
5	Press the alarm silence button and hold for 4 seconds if samples are to be drawn from an arterial line.	This will prevent nuisance alarms during blood sampling from the arterial line.
6	Perform hand hygiene	To prevent cross infection
7	Don gloves	All drawing of blood will be done with protective gloves. All material possibly in contact with blood will be regarded as contaminated.
8	• Remove the protective cap from hub of the arterial line • Clean the hub with alcohol swab for 20 seconds • Attach a 10ml syringe to the hub of the arterial line • Turn stop cock 45 degrees back towards sample port and remove blood filled syringe and discard appropriately • Attach the hub of the ABG syringe to the hub of the arterial line • Draw 1ml to 1.5mls into syringe (arterial	

	pressure should fill syringe). When blood is drawn remove and flush line.	
9	Push the plunger up to expel any air bubbles	Air inside the syringe can change the value of the readings
10	Close syringe with rubber cap	To avoid mixing of atmospheric air which will change the value of the readings
11	Replace all the articles and discard appropriately	

Watch out

Do not pull the plunger back after blood collection as it allows atmospheric air to enter which alters the values.

DOCUMENTATION

- Monitor the puncture site frequently for swelling, including the assessment of distal pulses.
- Note the color and temperature and sensation of the extremity distal to the puncture site.
- Monitor if there is any bleeding from the puncture site.

PATIENT FAMILY EDUCATION:

- Explain the patient to intimate severe pain or any discomfort in the puncture site .
- Advice the patient not to pull the line.