

Positioning of Arterial Line Transducer at the Phlebostatic Axis

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Positioning of Arterial Line Transducer at the Phlebostatic axis

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BACKGROUND

- Arterial lines are used in critical care patients to invasively monitor hemodynamic status
- Vasoactive drugs are usually titrated based on arterial line readings
- Currently, arterial lines are zeroed to atmospheric pressure with the transducer placed on the forearm
- Phlebostatic axis is regarded as the anatomical point that corresponds to the right atrium and most accurately reflects a patient's hemodynamic status

PURPOSE

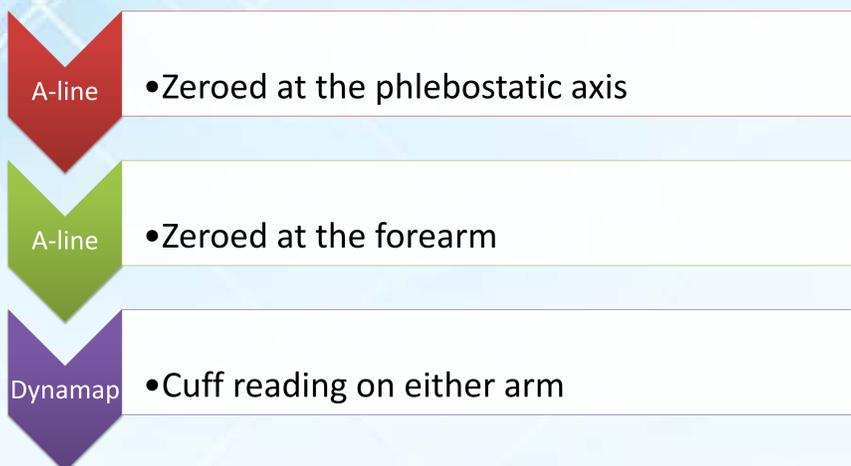
- To determine the placement of the arterial line transducer that most accurately reflects a patient's hemodynamic status
- For critical care patients who require invasive hemodynamic monitoring
- Comparison between two arterial line transducer positions:
 - Zeroed at the phlebostatic axis
 - Zeroed at the forearm (current practice)

EVIDENCE

- Phlebostatic axis is located at the fourth intercostal space at the mid-anterior-posterior diameter of the chest wall. This is the location of the right atrium.
- Physiologic indifferent point as changes in patient position and volume shifts will not affect the reading.
- If the stopcock is positioned below the phlebostatic axis, the readings will be inaccurately high
- If above the phlebostatic axis, the readings will be inaccurately low.

DATA COLLECTION

Data collection in the NSICU included patient age, gender, cardiac history and three blood pressure readings:



OUTCOMES

- Disparities among three different readings
- Mixed results with some patients requiring vasopressor support or vasodilator support, depending on ordered blood pressure parameters.

NEXT STEPS

- Position arterial line transducers at the phlebostatic axis, as evidence suggests
- Monitor any increase/decrease in usage of vasoactive drug with new positioning

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