

NURSING SERVICE

LABOR AND DELIVERY

**6190-57**

**PROCEDURE:**

**UMBILICAL CORD BLOOD SAMPLING FOR CORD GAS**

**PURPOSE:**

Umbilical cord blood sampling is a mechanism to determine the extent of acidosis at birth. The procedure allows easy measurement of fetal respiratory status at birth aiding in identification if intrapartum asphyxia. The primary nursing responsibilities associated with umbilical cord blood sampling are recognition of abnormal results and collection of the specimen.

**EQUIPMENT:**

HEPARINIZED BLOOD GAS SYRINGE  
LARGE BORE NEEDLE  
PLASTIC BAG OR CUP FILLED WITH ICE  
LABEL

**QUALIFIED PERSONNEL:**

REGISTERED NURSE  
LICENSED PRACTICAL NURSE

**PROCEDURE:**

**KEY POINTS:**

- |   |   |
|---|---|
| 1. Collect supplies.  | Syringe must be heparinized.  |
| 2. Double clamp cord within 5-10 seconds of birth.  | Values can change rapidly in the unclamped cord after 5-10 seconds of newborn breathing.  |
| 3. Select vessel from which to draw specimen.   | The vein is a large prominent single vessel. Arteries are less well oxygenated and bluer. |
| 4. Keep the bevel of the needle up and hold the needle tangential to the vessel.  | Perpendicular insertion may perforate the back wall of the vessel.                        |
| 5. Collect 0.3-1.0 ml of blood from vessel.   | 0.3 ml is the least amount required for reading.  |
| 6. Label specimen with patient name, medical record number, account number, and M.D. name, date, time and initials of person collecting and whether arterial or venous. | Venous and arterial normal values differ.   |

**PROCEDURE:**

7. Store specimens on ice and transport to lab ASAP.
8. Record result in lab values and on delivery summary in patient record.

**KEY POINTS:**

Substantial changes will not occur for 3-4 hours if specimens are kept on ice.

Normal values:

Umbilical artery:

PH 7.12-7.33

PCO<sub>2</sub> 44.2-71.2

PO<sub>2</sub> 6.5-26.1

HCO<sub>3</sub> 20.3-28.0

BE -10.1 to -0.2

Umbilical vein:

PH 7.25-7.41

PCO<sub>2</sub> 35.0-50.9

PO<sub>2</sub> 16.3-41.1

HCO<sub>3</sub> 18.7-25.6

BE -7.1 to -0.2

Reference: Intra partum Management Module; Martin, Jean

EFFECTIVE DATE: December 15, 1993

REVIEW DATE: 1/17/96 5/7/99 4/7/05 5/16/08 11/11/11

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