Lamellar Body Count

Overview
- Fetal lung maturity is used to determine the risk for developing respiratory distress syndrome (RDS) in infants born prematurely (32-39 weeks)
- The risk for developing RDS is inversely related to gestational age and is the most common cause of respiratory failure in neonates
- RDS is associated with preterm birth due to insufficient production of pulmonary surfactant

Diagnostic Value
Lamellar bodies are spherical aggregates in the amniotic fluid that contain pulmonary surfactant and are secreted during fetal development by type II pneumocytes. Pulmonary surfactant is in the lamellar bodies and is excreted into the alveolar spaces where it forms a monolayer on alveolar surfaces. The lamellar bodies can pass into the amniotic cavity and are in the amniotic fluid.

If the surfactant is deficient, the small alveoli collapse and the large alveoli become overinflated and stiff, leading to an increased risk of developing respiratory distress. The status of fetal lung maturity is reflected in the concentration of surfactant in the form of phospholipids and lamellar bodies present in amniotic fluid.

Lamellar bodies are similar in size to platelets and can be quantified on a hematology analyzer utilizing the platelet channel.

The main value of fetal lung maturity testing is predicting the absence of RDS.

Test Utility
For predicting fetal lung maturity and assessing the risk of developing neonatal respiratory distress syndrome (RDS) when performed during 32 to 39 weeks gestation
- Values <21 K/uL indicate pulmonary immaturity and a high risk of RDS
- Values 21-39 K/uL indicate an intermediate risk of RDS. Traditional phospholipid analysis (L/S ratio) should be considered
- Values >39 K/uL indicate pulmonary maturity and a low risk of RDS

Specimen Requirements
Minimum sample volume is 2 mLs of amniotic fluid obtained by transabdominal amniocentesis

Sample Limitations:
- Vaginal pooled samples should be avoided
- Specimens containing meconium or mucus can not be analyzed
- Specimens with hematocrit >1% can not be analyzed

Stability:
Room Temperature - 8 hours
Refrigerated – 5 days
Samples should NOT be frozen or centrifuged.

Sanford Laboratories Test Code: NBLD0421
CPT Code: 89050

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