



[Clinical]- Policy

830 BAYOU PINES WEST • LAKE CHARLES, LA. 70601

[AFB AND FUNGUS CULTURE COLLECTION AND PROCESSING]

Adopted Date: September 26, 2014

Purpose: This policy explains the proper way to collect AFB and Fungus Culture specimens and where testing should be performed so that stability of the specimen is maintained for accurate resulting.

AFB Protocol

Specimens are sent to reference labs for testing. Depending when the specimen is received dictates which reference lab the specimen is sent to.

When the specimen is received, please look at the collection date. If the specimen must be set up ASAP it should be sent to St. Pats Laboratory. The following protocol below should be followed for each specimen type.

Stability for all specimens except gastric aspirate for AFB culture setup is 48 hours, refrigerated.

Sputum

Material brought up after a productive cough is required for sputum culture. The specimen should be collected when patient first awakens in the morning prior to drinking, eating or smoking. The patient should be coached to breathe in deeply and exhale a minimum of three times. Specimen volume should be between 5 and 10 milliliters. A series of at least three single specimens (but not more than six) should be collected on each successive morning from sputum-producing patients. Specimens can be collected in the sputum collection device. A sterile, wide-mouth specimen container with a tightly fitting screw top lid is adequate. Sputum is among the least clinically relevant specimens submitted for mycobacterial culture. (NOTE: pooled specimens are not accepted. Each specimen should be collected and sent separately.)

Induced Sputum

Inhalation of an aerosol of sterile hypertonic saline can be used to stimulate the production of sputum. Even though aerosol-specimens may appear thin and watery, they should be processed. Aerosol-induced specimens are collected by allowing the patient to breathe aerosolized droplets of a solution containing 15% sodium chloride and 10% glycerin for approximately 10 minutes or until a strong cough reflex is initiated.

Gastric Aspiration

Gastric aspiration may be necessary for children who cannot produce sputum even with aerosol inhalation. About 50 mL of gastric contents should be aspirated early in the morning, after the patient has fasted for at least 8 to 10 hours and preferably while the patient is still in bed. Gastric aspirates should be neutralized immediately on collection. A disposable plastic tube is used. It is moistened with sterile water and inserted into the tip of a nostril or into the mouth. As the tube is advanced, the patient is instructed to swallow small sips of sterile water to assist him in swallowing the tube. After the tube is in the stomach, the gastric contents may be aspirated and placed in a sterile container. The patient should then be given 20-30 mL of sterile water. The gastric washings are again aspirated and added to the first collection. The specimen is delivered immediately to the laboratory, where prompt processing (within 4 hours) is carried out to neutralize the adverse effects of gastric acids on the tubercle bacilli. A delay of more than a few hours in processing requires that the specimen be neutralized with 100 mg of sodium carbonate or another alkaline buffer salt.

Endotracheal or tracheostomy suction specimens

Patients with tracheostomies are unable to produce sputum in the normal fashion, but lower respiratory tract secretions can be collected in a Lukens trap. Tracheostomy aspirates or tracheostomy suction specimens should be treated as sputum.

Bronchial washings, bronchoalveolar lavage, transbronchial biopsy, protected brush

During bronchoscopy, physicians can obtain either bronchial washings or aspirates, bronchoalveolar lavage (BAL) samples, protected bronchial brush samples or specimens for transbronchial biopsy. Bronchial washings or aspirates are obtained by instilling a small amount of sterile physiologic saline into the bronchial tree and withdrawing the fluid when purulent secretions are not visualized. Such specimens will be contaminated with upper respiratory tract flora. BAL can obtain a deeper sampling of desquamated host cells and secretions. During this procedure, a high volume of saline (100 to 300 mL) is infused into a lung segment to obtain cells and protein of the pulmonary interstitium and alveolar spaces. Protected catheter bronchial brush specimens are best suited for bacterial cultures. The contents of the bronchial brush should be suspended in 1 mL of saline.

Transtracheal Aspirate

Percutaneous transtracheal aspirates are obtained by inserting a small plastic catheter into the trachea via a needle previously inserted through the skin and cricothyroid membrane. This invasive procedure reduces the likelihood that a specimen will be contaminated by upper respiratory tract flora or diluted by added fluids. The procedure is rarely used anymore.

Urine

The first morning voided midstream specimen is preferred. Multiple specimens are advised to demonstrate the presence of mycobacteria. Three first morning specimens collected over the course of three days are recommended. Patients should not be receiving broad-spectrum antibiotics at the time of collection.

Blood or Bone Marrow

Blood for mycobacterial culture should be anticoagulated with heparin (green top tube). Blood collected in ethylenediaminetetraacetic acid (EDTA) is not suited for culture.

CSF

A minimum of 5 mL of CSF is requested for mycobacterial culture but is seldom obtained. The specimen should be submitted in a sterile, leakproof container and delivered immediately to the laboratory upon collection.

Body Fluids

A minimum of 10 mL of body fluid is requested for mycobacterial culture. The specimen should be submitted in a sterile, leakproof container and delivered immediately to the laboratory upon collection.

Tissue

Tissue removed surgically should be submitted in a sterile, leakproof container and delivered immediately to the laboratory upon collection. Tissues should have a small amount of saline added to keep it from drying out.

When specimen stability is not an issue, specimens will be sent to Quest Diagnostics. The protocol below should be followed.

Respiratory Specimens

Collect three sputum specimens from a deep cough. At least one should be early morning. Stability Refrigerated 7 day, Room temp 24 hours.

Tissue and Needle biopsy

In sterile Saline. Stability Refrigerated 7 day, Room temp 24 hours.

Body Fluids, Stool, Gastric Aspirate, Urine, CSF, culturette swab

Sterile container, Stability Refrigerated 7 days, Room temp 24 hours

Whole Blood ACD, blood culture bottles, whole blood heparin, bone marrow ACD or bone marrow heparinized,

Room temp 24 hours

Fungus Culture Protocol

All fungal specimens are sent out to another reference lab.

Whole Blood or Bone Marrow

Whole blood Heparin, Stability is Room temp 48 hours

Bone Marrow ACD, Stability 24 hours room temp

Blood Culture Bottle, Stability 24 hours room temp

