

WBC Tagging- Inflammation and Infection Scintigraphy

Indications: (Include but are not limited to)

- Musculoskeletal infections
- Fever of unknown origin
- Localization of unknown source of sepsis/occult infection
- Detection of add. site/s of infection in pts with persistent or recurrent fever and a known site of infection
- Postoperative infections
- Cardiovascular infections
- Differentiation of infection from tumor
- Opportunistic infections
- Pulmonary inflammation due to therapeutic or environmental agents
- Sarcoidosis
- Tuberculosis
- Interstitial nephritis
- Inflammatory bowel disease
- Evaluation for prosthesis rejection
- Differentiation of pulmonary infiltrates
- Detection of mitotic (fungal) aneurysms, shunt and graft infections

Prep/Contraindications:

- **Gallium study:** Not optimal for abdominal disease as bowel activity may obscure abdomen. Exception- Chron's disease shows well
- **White Blood Cell:**
 - Radiopharmacist would like WBC count if possible
 - Indium study: Hydrate. **Antibiotics decrease leukocyte** chemotaxis have negative effect on leukocytes
 - Indium or Ceretec WBC study: Hydrate. **Leukopenia and dehydration are contraindicated**

Radiopharmaceuticals:

- 6 mCi **67Ga citrate**, administered intravenously
- 500 uCi **111Indium oxine**-labeled leukocytes, administered intravenously
- 10-20 mCi **99mTc Exametazime** labeled leukocytes (Ceretec), administered intravenously

67Gallium citrate Whole Body Acquisition Protocol:

- Position patient supine, image whole body with scan speed of 5cm/min
 - Abscess/Infection/Inflammation image @ 6hr (if needed for early spine) and @ 24-hour post injection. Occasional further delay images per radiologist request. Add 48 hr image for Lung indications (such as Sarcoidosis)
 - Tumor localization image @ 48 hrs post injection, and again @72 hr per radiologist request
- If spot images are needed, 100,000-500,000 counts/image
- Medium collimator
- SPECT or SPECT/CT if ordered, centered over area of interest. Used for attenuation correction, fused with SPECT imaging as ordered

NUCLEAR MEDICINE PROTOCOLS



67Gallium citrate Lung Acquisition Protocol:

- Anterior/Posterior images of lungs @ 24 and 48 hours, 100,000-500,000 counts/image
- Medium collimator

111Indium oxine-labeled leukocytes Acquisition Protocol:

- Position patient supine, image whole body @ 18-30 hour post injection with a scan speed of 5cm/min.
- 48 and 72 hour delay images if negative
- The performance of early (1-3) hour imaging may be needed for the indication of inflammatory bowel disease.
- If spot images are needed, 50,000-100,000 counts/image
- Medium collimator
- SPECT or SPECT/CT if ordered, centered over area of interest. CT used for attenuation correction, fused with SPECT

99mTc Exametazime labeled leukocytes (Ceretek):

- Position patient supine, image whole body @ 1-3hrs post injection (expires @ 5 hours) with a scan speed of 5cm/min. Occasional further delay images per radiologist request
- If spot images are needed, 100,000-500,000 counts/image
- Low energy collimator
- SPECT or SPECT/CT if ordered, centered over area of interest. CT used for attenuation correction, fused with SPECT

Reviewed: 1/10/2025; 1-11-2024; 1-13-23; New: 6-17-2022