

Radiotracer Interstitial Injections

Descriptor

Frequency of interstitial radiotracer injections.

Background

Inadvertent radiotracer interstitial injections can diminish systemic radiotracer bioavailability leading to decreased sensitivity, as well as create focal hotspots obscuring regional structures and causing image scaling errors.

The Cycle

The standard

No standards exist.

Target

Less than 10% interstitial.

Assess local practice

Indicators:

% of wholebody nuclear medicine study with interstitial injection.

Data items to be collected:

1. Radiotracer and dose. 2. Injection site. 3. Study indication. 4. Patient age. 5. Inpatient vs outpatient. 6. Direct injection vs IV. 7. Individual performing the injection. 8. Presence/absence of interstitial injection. 9. Failed or limited study due to interstitial injection.

Suggested number:

100 consecutive patients.

Suggestions for change if target not met:

Discuss the results of the audit with the radiologists and nuclear medicine technologists. Ensure adequate injection techniques are being used (eg. blood flash and saline flush). Offer additional training for individuals with a higher interstitial rate. Pre-hydrate for patients who may have difficult IV access such elderly or obese patients. Identify unique modifiable factors which may lead to increased interstitial rates. Consider utilizing other healthcare providers (eg. nurses) to perform injections.

Resources

PACS system to access images and patient information. Radiologist: 6-8 hours for reviewing images and analyzing the data.

References

1. Radiographics 2003; Love C, et al. Radionuclide bone imaging: and illustrative review. 23: 341-358.
2. Technetium-MDP Chemistry and Pharmacology. Retrieved March 22, 2016, from <http://www.auntminnie.com>
3. STATdx. Nuclear Medicine. Retrieved March 22, 2016, from <https://my.statdx.com>

4. Weinstein S. Plumer's Principles and Practice of Intravenous Therapy, 7th edition. Philadelphia, Pa., Lippincott Williams and Wilkins, 2001.