SPECT MPI Imaging Acquisition Recommendations

SPECT MPI Acquisition Recommendations:

Stress myocardial perfusion studies will be performed in accordance with best practice standards as recommended in the imaging guidelines of the American Society of Nuclear Cardiology (ASNC).

All site protocols will be reviewed and approved by the ACRIN core lab prior to the enrollment period in order to ensure optimal imaging techniques are performed. This data is captured on the Image Transmittal Worksheet (ITW) and SPECT Technical Assessment (TS) forms that are submitted with each SPECT MPI submission. Once a site has been approved and begins participant enrollment, subjects will undergo radionuclide SPECT MPI following randomization to Group B for evaluation of suspected CAD. All image acquisitions for a particular participant during one visit will be performed on the same camera/computer software system.

SPECT MPI Acquisition Guidelines:

High quality SPECT MPI will be performed using the imaging parameters optimized within each laboratory for their particular camera and computer system reviewed during pre-enrollment by the ACRIN-Image Management Center. Each subject’s gated and non-gated cardiac tomograms (the raw projection images), reconstructed files (short axis, vertical long and horizontal long axis), heart rate histogram (if available) and screen capture of the quantitative analysis results page displaying % LV ischemia or % LV perfusion reversibility are sent to the ACRIN-Image Management Center for technical adequacy and completeness. If possible for the gated images include an image of the heart rate histogram for review of the beat length uniformity. If attenuation correction is used both non attenuated-corrected images and attenuated-corrected images are submitted. If a question or problem regarding the submitted data arises the ACRIN-Image Management Center will follow-up with the site’s designated contact person.

All subject study images are transmitted to the ACRIN-Image Management Center using a predefined transfer method (TRIAD) established with each site prior to enrollment. Each subject’s raw data is sent in an uncompressed format within 5 business days of the SPECT visit. All Protected Health Identifiers are removed from the digital images and replaced with the study subject identifiers (TRIAD will anonymize). An Image Transmittal Worksheet (ITW), with exam-specific data, is completed during imaging and faxed to the ACRIN-Image Management Center on the day the images are transferred.
SPECT MPI Criteria for Technical Site Qualification and Quality Assessment:

The following criteria are evaluated by the Core Lab to ensure optimal imaging has been performed:

1) Rest and Stress images with complete coverage of the Left Ventricle in the Field of View

2) High quality raw projection images with attention to minimal motion and acceptably low levels of hepatic and bowel uptake

3) High quality gated SPECT MPI with attention to beat-length histogram.

4) Processed/reconstructed data utilizing standard commercial analytic software (i.e., Emory Toolbox, 4DM SPECT Corridor, Cedars-Sinai QPS, etc)

Required SPECT MPI Data Sets to be Submitted to ACRIN:

The following datasets are to be electronically transmitted:

1) All attenuated-corrected AND non attenuated-corrected raw rest, stress, and gated projection files in DICOM format
2) Reconstructed files (short axis, vertical long and horizontal long axis)
3) Screen capture of quantitative analysis results page displaying “% of LV ischemia or “% LV reversibility” from a commercial quantitative software program (i.e. Emory Cardiac Toolbox, 4D-MSPECT, Cedars Sinai, etc.).
4) Beat Length Histogram (if available)

SPECT MPI Contact Information:

Please do not hesitate to contact our Core Lab(s) if you have any questions or concerns regarding your SPECT MPI submissions:

For SPECT MPI site questions regarding qualification or technical assistance during the study from the ACRIN core lab, contact Rebecca Scaven, CNMT, via email or phone.

Email: rscaven@acr-arrs.org
Phone: 215-574-3175

For SPECT MPI questions related to image acquisition or interpretation, sites may contact the SPECT MPI core lab at Tufts Medical Center via email, phone, or pager, to the attention of Deb Kinan, RTN.

Email: dkinan@tuftsmedicalcenter.org
Phone: 617-636-2357
SPECT Core Lab Hot Line: 617-604-4848 (pager)