

Reporting of Myocardial Perfusion Imaging Studies

OVERVIEW

The purpose of this document is to specifically identify the critical components involved in effective reporting. This information serves as a standard for all nuclear cardiology laboratories. The critical components which should always be included in the final report are **indications for the procedure, clinical history, procedure, findings, and impressions.**

INDICATIONS FOR THE PROCEDURE

The purpose for the test, or indication, must always be identified and will fall into one of five general fields:

- 1) Diagnosis of coronary artery disease
- 2) Delineation of extent and severity of disease
- 3) Risk stratification
- 4) Determination of myocardial viability
- 5) Assessment of acute chest pain syndromes.

CLINICAL HISTORY

A clinical history should include:

- Demographics (first and last name, age/date of birth, sex, race)
- Description of the symptoms for which the study is being performed
- Referring physician name
- Current medications which may affect performance of the stress test (optional)
- Cardiac history, including prior procedures and imaging studies

PROCEDURE

The following aspects of the stress and imaging procedures should be well documented within the report:

- Type of stress (pharmacologic or exercise)

- Duration of exercise
- Indications for termination of study
- Presence of symptoms during the test (description of chest pain or other exercise induced symptoms)
- Hemodynamic information (resting and peak heart rate and blood pressure, % of maximum predicted heart rate achieved)
- Significant electrocardiographic changes and description of ST segment changes and arrhythmia
- Imaging protocol (protocol used, dose of radiopharmaceuticals [rest and stress], timing of injection [optional], time between injection and imaging [optional])
- Use of gating or attenuation correction

FINDINGS

The following elements should be included:

- Image quality including degree of patient motion, prominent subdiaphragmatic/hepatic activity, prominent soft tissue, and insufficient myocardial activity
- Size of left ventricle (LV) and right ventricle (RV) at rest and stress
- Description of perfusion (required)
 - Size (small, medium, or large)
 - Severity (mild, moderate, or severe)
 - Type (reversible, persistent, or mixed)
 - Location of the defects
 - Presence of single-vessel or multi-vessel disease
 - Quantitative description including summed stress, rest, and difference scores, and percent of LV (optional)
- Evidence of extensive abnormalities, including abnormal lung activity (with thallium-201), transient cavity dilation (including transient ischemic dilation ratio), and abnormal RV size and activity
- Description of left ventricular function with stress and/or rest gated techniques, the severity of wall motion abnormalities, global and focal abnormalities, overall LV systolic function with ejection fraction, and ventricular volumes (optional)
- Presence of significant abnormal extra-cardiac activity



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Practice Points

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IMPRESSIONS

The impressions section should include 5 parts:

- 1) Final Impression for both perfusion and function—
“normal/abnormal”
 - Categories of “probably normal”, “equivocal”, and “probably abnormal” should be used as infrequently as possible and should be accompanied by the cause for uncertainty. The term “non-diagnostic” should be used only if the level of stress is inadequate or the images are poor.
- 2) Apparent perfusion abnormalities (with acknowledgment of artifacts) and function information
 - Include correlation with clinical and stress test data, as well as prior imaging studies.
- 3) Reference to initial clinical question
- 4) Signature of the interpreting MD
- 5) Date of the report

SUGGESTED READING

Tilkemeier PL, Cooke CD, Grossman GB, et al. ASNC Imaging Guidelines for Nuclear Cardiology Procedures: Standardized reporting of radionuclide myocardial

perfusion and function. *J Nucl Cardiol* 2009;16:
doi:10.1007/s12350-009-9095-8.

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