HACKETTSTOWN REGIONAL MEDICAL CENTER
CARDIO PULMONARY POLICY MANUAL
INTRAVENOUS ECHO CONTRAST WITH DEFINITY

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Effective Date: March 2010	**Policy No: 6.011**
Cross Referenced:	**Origin: Cardio Pulmonary**
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Revised Date: 04/12	**Page: 1 of 3**

Purpose: To provide a contrast (Perflutren Liquid Microshere) for patients with sub maximal echocardiograms to specify the left ventricular chamber and to improve the delineation of the left ventricular endocardial border

Procedure:

Indications:

Activated Definity (Perflutren Lipid Microshere) injected suspension is indicated for use in patients with suboptimal echocardiograms to opacify the left ventricular chamber and to improve the delineation of the left ventricular endocardial border.

Patients who are candidates for possible use of Echo Contrast may be identified by either a physician of CVT. When a CVT identifies a patient for whom IV echo contrast is indicated, the ordering or reading cardiologist will be contacted to obtain an order.

Any patient whose echocardiogram has two or more wall segments which cannot be visualized in one or more views. Any patient who id technically difficult to image who is being evaluated for

-LV function
-Known for peripheral vascular disease
-R/O apical thrombus and/or cardiac tumors
-Suspected myocardial rupture or pseudo aneurysm
-All patients receiving exercise or pharmacologic stress echocardiogram studies

Contraindications:

Definity should not be administered to patients:

-with known hypersensitivity to octafluoropropane
-with known cardiac shunts
-by direct intra-arterial injection

The safety of activated Definity in patients with right-to-left, bi-directional or transient right-to-left cardiac shunts has not been studies.

Activated Definity should be administered with caution to patients with chronic pulmonary vascular disorders (e.g. severe emphysema, pulmonary vasculitis or other causes of reduced pulmonary vascular cross sectional area).

Physical and Chemical Properties

Gas-Octafluoropropane – safe – used in other medical settings
Shell – Phospholipid blend

Mechanism of Action

Enhance backscatter from blood
Resonate at frequencies used in diagnostic ultrasound

Metabolism and Pharmacokinetics

Octafluoropropane exhaled unmetabolized

- 1.3 min in healthy subjects
- 1.9 min in COPD subjects

Phospholid components thought to be metabolized to free fatty acids

Patient Preparation by Sonographer and Nurse
- Explain rational for use of Echo Contrast to patient
- Screen patient for possible contraindication
- Evaluate patient's pre-contrast inject level of comfort
- Insure patency of existing IV access/insert saline lock using #20 catheter

Preparation of Definity
- Call Pharmacy regarding order for Definity
    - Supplied as a sterile liquid in a single-use 2 ml vial
    - Refrigerated at 2-8 degrees centigrade/48 degrees Fahrenheit
    - Activated with Vial mix
        - Ensure vial is at room temperature
        - Switch power on
        - Open the carrier
        - Load vial
        - Close the carrier
        - Start activation (45 seconds)
    - Remove the vial from Vial mix
    - Definity will appear as a milky white liquid
- Use within 12 hours of activation
    - If unused for more than 5 minutes post-activation, resuspend with 10 seconds of hand agitation
    - Vent vial immediately prior to use or use dispensing pin to draw up (intellupin)
    - DO NOT INJECT AIR

Diluted Bolus Technique
1.3 ml of activated Definity diluted with 3.7 mL of saline in a 10-cc syringe
Initial injection of up to 2 mL (3ml) administered slowly
Slowly flush with 1-2 mL plain saline
- If using stopcock apparatus to inject, insure that syringe with diluted Definity is on the horizontal plane and saline flush is on the vertical plane to lessen micro sphere destruction

Subsequent slow injection of 1-2 mL of diluted Definity as needed followed by slow saline flush of 2 ml
Rotate syringe between injections to resuspend

Artifacts
Potential causes of artifacts must be recognized and corrected when possible:
- Swirling
- Dosing (low concentration, increase dose)
- Administration (low infusion rate, increase infusion rate)
- Poor LV function

Attenuation
Dosing (high concentration, wait for attenuation to resolve and decrease amount of Definity on subsequent injections)
Administration (infusion rate too fast, inject at slower rate: 1-2 ml over 60 sec)

Patient Evaluation

- Evaluate patient for any incidence of treatment – related adverse events or reactions (headache, back 2
- or renal pain, flushing, nausea, chest pain, dizziness or prolonged QTc)
- Reassure patient that side effects/adverse events usually resolve within 15 minutes without treatment

Documentation

- Order is written in the chart (inpatient) or on prescription of outpatient. Consent is signed by the patient.
- Contrast use is documented on "Stat/One Time Order" section of MAR
    - IV Echo contrast (Definity) with 1.3ml Definity/8.7ml saline dilution
- Techs will document use of Contrast in unit log book and enter order under Echo Contrast and charge accordingly.
- Reports will be sent to Medical Records to be scanned into Cerner.