

MUSC

HEART & VASCULAR CENTER
INTERVENTIONAL RADIOLOGY
PRE-PROCEDURE GUIDELINES

The following standardized guidelines apply to pre-procedure preparation and care of Interventional Radiology patients at the Heart and Vascular Center. The Interventional Radiologist may write individualized physician orders that may or may not follow these guidelines.

CONTRAST ALLERGY PREMEDICATION GUIDELINE

If patient is allergic to contrast, scheduled to receive contrast, and has not received premedications, give the following premedications in Interventional Radiology:

- ▶ Methylprednisolone (Solu-medrol®) 125 mg IV time one dose
- ▶ Diphenhydramine (Benadryl®) 50 mg IV time one dose
- ▶ Famotidine (Pepcid®) 20 mg IV time one dose

If patient is allergic to contrast, scheduled to receive contrast, and **has taken** premedications in advance, notify Interventional Radiologist of premedications taken. Recommended “13 hours in advance of procedure pre-medication schedule” is as follows:

- ▶ Prednisone 50 mg p.o., 13 hours prior to procedure
- ▶ Prednisone 50 mg p.o., 7 hours prior to procedure
- ▶ Prednisone 50 mg p.o., 1 hour prior to procedure
- ▶ Diphenhydramine (Benadryl®) 50 mg p.o., 1 hour prior to procedure

LAB GUIDELINE

See pages 3-10 for a list of common procedures and corresponding prep guidelines. Draw additional labs (or no labs) according to the procedure’s specific prep guideline. The Interventional Radiologist may not follow the lab guideline prior to emergent procedures, e.g. trauma, G.I. bleeding.

In general, prior to the procedure, obtain the patient’s most recent lab results. If the following labs have not been drawn the day of the procedure, draw them as indicated:

LAB

INDICATIONS

Glucose
Point Of Care Testing (POCT)

- Insulin-dependent diabetes or S/S hypoglycemia or hyperglycemia

Potassium

- Renal disease with S/S hyperkalemia or potential for hyperkalemia, e.g. missed or ineffective dialysis treatment(s) within the past week.

If the following labs have not been drawn within 7 to 14 days of the procedure, draw them as indicated:

LAB

INDICATIONS

Creatinine

- Age 65 years or older and will receive contrast
- Diabetes mellitus
- Dehydration
- Solitary kidney
- Renal insufficiency – **DO NOT** draw on dialysis patients
- Cancer
- Liver disease

Platelet Count

- Renal disease
- Cancer
- Liver disease

Prothrombin / PTT

- Renal disease
- Cancer
- Liver disease
- If coumadin **NOT** stopped 72 hours prior to lab draw

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ANTIBIOTIC PROPHYLAXIS GUIDELINE

Give the following antibiotic not more than one (1) to two (2) hours prior to the procedure:

- ▶ Cefazolin, (Ancef®) 1 gm IV time one dose
- ▶ If allergic to cephalosporins or penicillins, give Ciprofloxacin (Cipro®) 400 mg IV time one dose
- ▶ If allergic to cephalosporins, penicillins, or quinolones, give Vancomycin 1 gm IV time one dose

Give antibiotic prophylaxis for the following procedures:

- Chemoembolization, e.g. with Mitomycin or Doxorubicin-labeled LC Beads
- SIRT (Selective Internal Radiation Therapy)
- Embolization, e.g. Uterine Artery Embolization (UAE), uterine fibroid embolization, and SIRT work-up
- Tunneled Central Venous Catheter (CVC), e.g. hemodialysis, hemapheresis or Hickman
- Tunneled / cuffed PICC (Peripherally Inserted Central Catheter)
- Percutaneous nephrostogram, nephrostogram, or drain placement / exchange
- Percutaneous Transhepatic Cholangiogram (PTC), cholangiogram, or drain placement / exchange
- CT guided RFA (Radio Frequency Ablation)
- CT guided gold marker placement

IV FLUID GUIDELINE

Start NaCl 0.9% at 100 mL / hr. Do not give if contraindicated, e.g. CHF, ESRD, CRF, pulmonary edema.

Follow the physician order for IV fluid and rate for CHF, ESRD, CRF, pulmonary edema.

Start the ordered IV fluid and rate for insulin-dependent diabetes. Ordered IV fluid may include:

- Dextrose 5%,
- Dextrose 5% / NaCl 0.45%,
- or NaCl 0.45%.

Start IV fluid bolus if ordered. Bolus may be ordered for a patient who will receive contrast and has an elevated creatinine level.

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PREP GUIDELINE

ARTERIOGRAM (ARTERIAL) PROCEDURES

**Arch and Carotid Arteriogram
Carotid Stenting**

- ✓ Remove all clothing, underpants, and bra. Remove all jewelry, eyeglasses and dental partial plates. Change into patient gown.
- ✓ Follow contrast allergy premedication guideline.
- ✓ Obtain IV access. If no VAD, place 20 gauge PIV (Peripheral IV).
- ✓ **Draw baseline ACT (I-STAT®)** in addition to labs per guideline.
- ✓ Start IV fluid per guideline.
- ✓ Document baseline neuro checks on MUSC Adult Neurological Flow Sheet.
- ✓ Document bilateral dorsalis pedis and posterior tibial pulses.
- ✓ Clip prep bilateral groins.
- ✓ Arch and Carotid Arteriogram. Have patient void prior to the procedure Carotid Stenting. Place urinary catheter to gravity drainage.

Iliac Stenting

- ✓ Remove all clothing, underpants, and bra. Remove all jewelry. Change into patient gown.
- ✓ Follow contrast allergy premedication guideline.
- ✓ Obtain IV access. If no VAD, place 20 gauge PIV in upper extremity. If an upper extremity artery will be accessed due to femoral, iliac, or aortic occlusion, place PIV in the opposite upper extremity.
- ✓ Draw labs per guideline.
- ✓ Start IV fluid per guideline.
- ✓ Document bilateral radial pulses if upper extremity will be accessed.
- ✓ Document bilateral dorsalis pedis and posterior tibial pulses.
- ✓ Clip prep bilateral groins.
- ✓ Place urinary catheter to gravity drainage.

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ARTERIOGRAM (ARTERIAL) PROCEDURES

Upper Extremity Arteriogram

- ✓ Remove all clothing, underpants, and bra. Remove all jewelry. Change into patient gown.
- ✓ Follow contrast allergy premedication guideline.
- ✓ Obtain IV access. If no VAD, place 20 gauge PIV in non-affected upper extremity.
- ✓ Draw labs per guideline.
- ✓ Start IV fluid per guideline.
- ✓ Document bilateral dorsalis pedis and posterior tibial pulses.
- ✓ Document radial / ulnar pulses of affected upper extremity.
- ✓ Clip prep bilateral groins.
- ✓ Have patient void prior to the procedure.

Lower Extremity Arteriogram

- ✓ Remove all clothing, underpants, and bra. Remove all jewelry. Change into patient gown.
- ✓ Follow contrast allergy premedication guideline.
- ✓ Obtain IV access. If no VAD, place 20 gauge PIV in upper extremity. If an upper extremity artery will be accessed due to femoral, iliac, or aortic occlusion, place PIV in the opposite upper extremity.
- ✓ Draw labs per guideline.
- ✓ Start IV fluid per guideline.
- ✓ Document bilateral dorsalis pedis and posterior tibial pulses.
- ✓ Document bilateral radial pulses if upper extremity will be accessed.
- ✓ Clip prep bilateral groins.
- ✓ Have patient void prior to the procedure.

Embolization

SIRT Work-up (Possible Embolization / MAA Nuclear Medicine SPECT Scan)

- ✓ Remove all clothing, underpants, and bra. Remove all jewelry. Change into patient gown.
- ✓ Follow contrast allergy premedication guideline.
- ✓ Obtain IV access. If no VAD, place 20 gauge PIV.
- ✓ Draw labs per guideline.
- ✓ Follow antibiotic prophylaxis guideline.
- ✓ Start IV fluid per guideline.
- ✓ Document bilateral dorsalis pedis and posterior tibial pulses.
- ✓ Clip prep bilateral groins.
- ✓ Embolization. Have patient void prior to the procedure.
- ✓ SIRT Work-up. Place urinary catheter to gravity drainage.

PREP GUIDELINE

ARTERIOGRAM (ARTERIAL) PROCEDURES

Uterine Artery Embolization (UAE) or Uterine Fibroid Embolization

- ✓ Remove all clothing, underpants, and bra. Remove all jewelry. Change into patient gown.
- ✓ Follow contrast allergy premedication guideline.
- ✓ Obtain IV access. If no VAD, place 20 gauge PIV.
- ✓ **Draw CBC, FSH** in addition to labs per guideline.
- ✓ Follow antibiotic prophylaxis guideline.
- ✓ Start IV fluid per guideline.
- ✓ Document bilateral dorsalis pedis and posterior tibial pulses.
- ✓ Clip prep bilateral groins.
- ✓ Place urinary catheter to gravity drainage.
- ✓ Obtain PCA pump and set-up.

Arteriogram with SIRT (Selective Internal Radiation Therapy)

- ✓ Remove all clothing, underpants, and bra. Remove all jewelry. Change into patient gown.
- ✓ Follow contrast allergy premedication guideline.
- ✓ Obtain IV access. If no VAD, place 20 gauge PIV.
- ✓ Draw labs per guideline.
- ✓ Follow antibiotic prophylaxis guideline.
- ✓ Give recommended antiemetic prophylaxis, e.g. Ondansetron (Zofran®) 4 mg IV time one dose.
- ✓ Document when last dose Proton pump inhibitor, e.g. Pantoprazole (Protonix®) taken by patient.
- ✓ Start IV fluid per guideline.
- ✓ Document bilateral dorsalis pedis and posterior tibial pulses.
- ✓ Clip prep bilateral groins.
- ✓ Have patient void prior to the procedure.

Chemoembolization

- ✓ Obtain chemoembolization medication on day of procedure. Stamp signed physician order for: Mitomycin 20 mg / 20 mL syringe or Doxorubicin-labeled LC Beads 150 mg, (50 mg/ vial X 3 vials). FAX to Nuclear Medicine Pharmacy at 2-1747.
- ✓ Remove all clothing, underpants, and bra. Remove all jewelry. Change into patient gown.
- ✓ Follow contrast allergy premedication guideline.
- ✓ Obtain IV access. If no VAD, place 20 gauge PIV.
- ✓ Draw labs per guideline.
- ✓ Follow antibiotic prophylaxis guideline.
- ✓ Start IV fluid per guideline.
- ✓ Document bilateral dorsalis pedis and posterior tibial pulses.
- ✓ Clip prep bilateral groins.
- ✓ Have patient void prior to the procedure.

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ARTERIOGRAM (ARTERIAL) PROCEDURES

Arterial Stimulation Venous Sampling (ASVS) for Insulinoma Localization

- ✓ Obtain the correct number of calcium gluconate 10%, 4.65 mEq calcium / 10 mL vials from Adult Pharmacy (see ASVS guidelines).
- ✓ Remove all clothing, underpants, and bra. Remove all jewelry. Change into patient gown.
- ✓ Follow contrast allergy premedication guideline.
- ✓ Obtain IV access. If no VAD, place 20 gauge PIV.
- ✓ **Draw glucose (POCT), calcium, and insulin** in addition to labs per guideline.
- ✓ Start IV fluid per guideline.
- ✓ Document bilateral dorsalis pedis and posterior tibial pulses.
- ✓ Clip prep bilateral groins.
- ✓ Have patient void prior to the procedure.

VENOGRAM (VENOUS) PROCEDURES

Fistulagram

Thrombectomy / Declot Dialysis Graft / Fistula

- ✓ Remove all clothing, underpants and bra. Remove all jewelry. Change into patient gown.
- ✓ Follow contrast allergy premedication guideline.
- ✓ Obtain IV access. If no VAD, place 24 - 20 gauge PIV in extremity without the graft / fistula. If IV access not obtainable or patient refuses, notify the Interventional Radiologist.
- ✓ Draw glucose and/or potassium per lab guideline. **DO NOT** draw creatinine, platelet count, or prothrombin/PTT unless ordered by a physician.
- ✓ Start IV fluid per guideline.
- ✓ Document graft / fistula thrill or bruit.
- ✓ Document pulses distal to graft / fistula access site.
- ✓ If patient still produces urine, have patient void prior to the procedure.

Venogram

- ✓ Remove all clothing, underpants and bra. Remove all jewelry. Change into patient gown.
- ✓ Follow contrast allergy premedication guideline.
- ✓ Obtain IV access:
 - Upper extremity / chest venogram. Place 22 -20 gauge PIV in distal upper extremity to be studied, hand preferred. May require PIVs bilaterally if bilateral upper extremities to be studied.
 - Lower extremity venogram. Place 22 – 20 gauge PIV in foot or feet of leg(s) to be studied.
- ✓ Draw labs per guideline.
- ✓ Start IV fluid per guideline.
- ✓ Have patient void prior to the procedure.

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VENOGRAM (VENOUS) PROCEDURES

EVLT (EndoVenous Laser Treatment)

- ✓ Remove all clothing, underpants, and bra. Remove all jewelry. Change into patient gown.
- ✓ Follow contrast allergy premedication guideline.
- ✓ Obtain IV access. If no VAD, place 22 - 20 gauge PIV.
- ✓ Draw labs per guideline.
- ✓ Start IV fluid per guideline.
- ✓ Measure for bilateral thigh TED hose and 2 ace bandages. Obtain these supplies at bedside.
- ✓ Clip prep bilateral groins.
- ✓ Have patient void prior to the procedure.

Transjugular Liver Biopsy

TIPS (Transjugular Intrahepatic Portosystemic Shunt)

IVC (Inferior Vena Cava) Filter Placement

Pulmonary Arteriogram

- ✓ Remove all clothing, underpants and bra. Remove all jewelry. Change into patient gown.
- ✓ For pulmonary arteriogram only, obtain 12 Lead EKG if not obtained within 7 days of procedure. Notify Interventional Radiologist if most recent EKG shows Left Bundle Branch Block.
- ✓ Follow contrast allergy premedication guideline.
- ✓ Obtain IV access. If no VAD, place 20 gauge PIV.
- ✓ Draw labs per guideline.
- ✓ Start IV fluid per guideline.
- ✓ Have patient void prior to the procedure.

VENOUS ACCESS DEVICE (VAD) PROCEDURES

Port Placement

- ✓ Follow MUSC Central Venous Catheter policy C-75 for VAD care, maintenance and flushing guidelines.
- ✓ Remove all clothing, bra and jewelry from above the waist for upper extremity / chest port placement. Change into patient gown.
- ✓ Follow contrast allergy premedication guideline.
- ✓ Obtain IV access:
 - Upper extremity port placement. Place 22 -20 gauge PIV in distal upper extremity, below the elbow or hand preferred, of arm chosen for port placement. Port usually placed in non-dominant upper arm if not contraindicated, e.g. presence of hemodialysis graft or mastectomy.
 - Chest port placement. Place 22 – 20 gauge PIV in either upper extremity if not contraindicated.
- ✓ Draw labs per guideline.
- ✓ Follow antibiotic prophylaxis guideline.
- ✓ Start IV fluid per guideline.
- ✓ Have patient void prior to the procedure.

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VENOUS ACCESS DEVICE (VAD) PROCEDURES

Tunneled / Cuffed PICC Placement

Tunneled CVC Placement

- ✓ Follow MUSC Central Venous Catheter policy C-75 for VAD care, maintenance and flushing guidelines.
- ✓ Remove all clothing, bra and jewelry from above the waist for upper extremity / neck / chest PICC or CVC placement. Change into patient gown.
- ✓ Follow contrast allergy premedication guidelines.
- ✓ Obtain IV access:
Upper extremity PICC placement. Place 22 -20 gauge PIV in distal upper extremity, below the elbow or hand preferred, of arm chosen for PICC placement. PICC usually placed in non-dominant upper arm if not contraindicated, e.g. presence of hemodialysis graft or mastectomy.
Neck / chest PICC or CVC placement. Place 22 – 20 gauge PIV in either upper extremity if not contraindicated.
- ✓ Draw labs per guideline.
- ✓ Follow antibiotic prophylaxis guideline.
- ✓ Start IV fluid per guideline.
- ✓ Have patient void prior to the procedure.

Non-tunneled / Non-cuffed PICC Placement

Non-tunneled CVC Placement

- ✓ Follow MUSC Central Venous Catheter policy C-75 for VAD care, maintenance and flushing guidelines.
- ✓ Remove all clothing, bra and jewelry from above the waist for upper extremity / neck PICC or CVC placement. Change into patient gown.
- ✓ Follow contrast allergy premedication guidelines.
- ✓ Obtain IV access:
Upper extremity PICC placement. Place 22 -20 gauge PIV in distal upper extremity, below the elbow or hand preferred, of arm chosen for PICC placement. PICC usually placed in non-dominant upper arm if not contraindicated, e.g. presence of hemodialysis graft or mastectomy.
Neck PICC or CVC placement. Place 22 – 20 gauge PIV in either upper extremity if not contraindicated.
- ✓ Draw labs per guideline.
- ✓ Start IV fluid per guideline.
- ✓ **NO** antibiotic prophylaxis.
- ✓ Have patient void prior to the procedure.

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VENOUS ACCESS DEVICE (VAD) PROCEDURES

**Removal / Explant: Port
Tunneled / Cuffed PICC
Tunneled CVC**

- ✓ Follow MUSC Central Venous Catheter policy C-75 for VAD care, maintenance and flushing guidelines.
- ✓ Remove all clothing, bra and jewelry from above the waist for upper extremity / neck / chest VAD removal. Change into patient gown.
- ✓ Obtain IV access:
Upper extremity VAD removal. Place 24 - 22 gauge PIV in upper extremity without the VAD if not contraindicated, e.g. presence of hemodialysis graft or mastectomy. If contraindication exists, may place PIV in upper extremity distal to the VAD.
Neck / chest VAD removal. Place 24 – 22 gauge PIV in either upper extremity if not contraindicated.
- ✓ Draw labs per guideline.
- ✓ Start IV fluid per guideline.
- ✓ **NO** antibiotic prophylaxis.
- ✓ Have patient void prior to the procedure.

**Removal / Explant: Non-tunneled / Non-cuffed PICC
Non-tunneled CVC**

- ✓ Follow MUSC Central Venous Catheter policy C-75 for VAD care, maintenance and flushing guidelines.
- ✓ Remove all clothing, bra and jewelry from above the waist for upper extremity / neck VAD removal. Change into patient gown.
- ✓ Usually no moderate sedation is given for removal of a non-tunneled VAD. If no sedation will be given, then no IV access or IV fluid is required. If moderate sedation will be given, obtain IV access and start IV fluid per guideline.
Non-tunneled / Non-cuffed PICC removal. **NO LABS.** If moderate sedation will be given, place 24 - 22 gauge PIV in upper extremity without the PICC if not contraindicated. If contraindication exists, may place PIV in upper extremity distal to the PICC.
Non-tunneled CVC removal. Draw labs per guideline. If moderate sedation will be given, place 24 – 22 gauge PIV in either upper extremity if not contraindicated.
- ✓ **NO** antibiotic prophylaxis.
- ✓ Have patient void prior to the procedure.

KIDNEY / BILIARY (NON-VASCULAR) PROCEDURES

**Percutaneous Nephrostomy Drain Placement, Nephrostogram, and / or Drain Exchange
Percutaneous Transhepatic Cholangiogram (PTC), Cholangiogram, and / or Drain Exchange**

- ✓ Remove all clothing, underpants and bra. Remove all jewelry. Change into patient gown.
- ✓ Follow contrast allergy premedication guideline.
- ✓ Obtain IV access. If no VAD, place 20 gauge PIV in either upper extremity.
- ✓ Draw labs per guideline.
- ✓ Follow antibiotic prophylaxis guideline.
- ✓ Start IV fluid per guideline.
- ✓ Have patient void prior to the procedure.

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CT GUIDED PROCEDURES

Radio Frequency Ablation

- ✓ Remove all clothing, underpants and bra. Remove all jewelry. Change into patient gown.
- ✓ Obtain IV access. If no VAD, place 20 gauge PIV in either upper extremity.
- ✓ Draw labs per guideline.
- ✓ Follow antibiotic prophylaxis guideline.
- ✓ Give Fentanyl Lollipop (Actiq®), 400 micrograms time one dose within one (1) hour prior to procedure.
- ✓ Start IV fluid per guideline.
- ✓ Have patient void prior to CT procedure.

Gold Marker Placement

- ✓ Remove all clothing, underpants and bra. Remove all jewelry. Change into patient gown.
- ✓ Obtain IV access. If no VAD, place 20 gauge PIV in either upper extremity.
- ✓ Draw labs per guideline.
- ✓ Follow antibiotic prophylaxis guideline.
- ✓ Start IV fluid per guideline.
- ✓ Have patient void prior to CT procedure.

CT Guided Liver/Kidney/Lung/Soft Tissue Biopsy

CT Guided Drain Placement:

- ✓ Remove all clothing, underpants and bra. Remove all jewelry. Change into patient gown.
- ✓ Obtain IV access. If no VAD, place 20 gauge PIV in either upper extremity.
- ✓ Draw labs per guideline.
- ✓ **NO** antibiotic prophylaxis.
- ✓ Start IV fluid per guideline.
- ✓ Have patient void prior to CT procedure.

NON-INVASIVE CT SCAN WITH CONTRAST

CT Heart

CTA for AAA/ Donors/ 4 Phase Liver Studies

- ✓ Follow contrast allergy premedication guideline.
- ✓ Obtain IV access: Notify CT physician if unable to obtain recommended PIV gauge size or site.
CT Heart. Place 18 gauge PIV right antecubital area.
CTA for AAA/ Donors/ 4 Phase Liver Studies. Place 20 gauge PIV either upper extremity.
- ✓ **Draw creatinine only** per lab guideline indications.
- ✓ Start IV fluid if ordered for increased creatinine.
- ✓ Have patient void prior to CT scan.

Renan Uflacker, M.D.

Date

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Date

Chris Hannegan, M.D.

Date

Claudio Schonholz, M.D.

Date