



Origination 3/1/2010
Last Approved 6/21/2022
Effective 6/21/2022
Last Revised 5/1/2019
Next Review 6/20/2025

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CLINICAL
NURSING
DIRECTOR
(POST-ACUTE
CARE SERVICE)

Area Post-Acute Care
Services

Applicability UMHS Clinical

References Guideline

Post-Acute Care Services HomeMed Subcutaneous Immune Globulin Therapy (SCIg) Guideline

Definitions:

Mechanism of Action: SCIg provides passive immunity by increasing the individual's antibody titer.

Uses: Primary immunodeficiency, defects in humoral immunity and autoimmune disorders

Area Task(s):

Clinical Considerations

- A. Subcutaneous immunoglobulin (SCIg) is administered upon a physician's orders.
- B. The nurse administering SCIg shall be knowledgeable of the indications for use, appropriate dosage, administration, monitoring parameters, side effects, toxicities, incompatibilities, stability, storage requirements, and potential complications.
- C. First dose of SCIg may be given in the home with strict adherence to first dosing requirements and only when the pt meets first home dose eligibility criteria. Patients who may be excluded:
 1. Allergy profile consistent with a known anaphylactic or severe systemic response (hypersensitivity) to immune globulin or blood products
 2. Pregnancy
 3. Selective IgA deficiency

4. Clinician judgment.
- D. First home doses of SCIg will be restricted to administration on weekdays during business hours with a physician available.
- E. First home doses of SCIg will be restricted to use of HomeMed nursing or subcontracted nursing agencies who have been educated and proven competent to administer SCIg.

Referral Processing

1. All referrals will be processed according to existing practice. Referrals received by the pharmacy for a first home dose of SCIg will be screened by the branch team accordingly against established eligibility criteria. Failure to meet eligibility criteria will result in declination of the referral and communication to the prescriber.
2. Eligibility criteria as listed are designed to serve as a guide and may not be all inclusive. Therefore, collaboration with the prescribing physician is necessary to evaluate any potential risks inherent to SCIg.

Obtain and review the physician's order for the following:

1. Oral pre-medication (e.g., acetaminophen, diphenhydramine). The patient is educated to obtain and self-administer the necessary oral pre-medications 30 minutes prior to the initiation of the SCIg infusion to minimize the potential for adverse effects.
2. Anaphylaxis Kit: For first dosing in the home (Note: A HomeMed Anaphylaxis Kit must be available in the home at all times during SCIg administration)
 - a. Contents of HomeMed adult Anaphylaxis Kit (for patients ≥ 30 kg)
 - i. Diphenhydramine 50 mg/mL (1 syringe)
 - ii. Sodium Chloride 0.9% 500mL bag (1 bag)
 - iii. Epinephrine 0.3 mg (Pippen™) (2 syringes)
 - b. Contents of HomeMed pediatric Anaphylaxis Kit (for patients > 15 kg and < 30 kg)
 - i. Diphenhydramine 50 mg/mL syringe (1 syringe)
 - ii. Sodium Chloride 0.9% 500mL bag (1 bag)
 - iii. Epinephrine 0.15mg (Pippen Jr™) (2 syringes)
3. Anaphylaxis Kit: For patients who have received immune globulin previously without reaction epinephrine must be available in the home at all times during SCIg administration.
 - a. Contents of HomeMed adult Anaphylaxis Kit (for patients ≥ 30 kg)
 - i. Epinephrine 0.3 mg (Pippen™) (2 syringes)
 - b. Contents of HomeMed pediatric Anaphylaxis Kit (for patients > 15 kg and < 30 kg)
 - i. Epinephrine 0.15mg (Pippen Jr™) (2 syringes)
4. Patients less than 15 kg in weight require individualized weight based dosing of epinephrine.

5. Patients/caregiver will be instructed on the administration and indications for use of epinephrine.

SCIg Dosing

1. Dose and concentration
 - a. Convert monthly dose in grams to weekly dose in milliliters
 - i. Monthly IVIG dose/gram divided by treatment interval = weekly IVIG dose per gram
 - ii. Weekly IVIG dose per gram divided by 0.16 = weekly Ivy dose per mL
 - b. Calculate initial weekly dose
 - i. Weekly IVIG dose/mL X 1.37 = Initial Weekly dose mL
 - c. Determine the number of weekly infusion sites
 - i. Initial weekly dose per mL divided by 15 mL per infusion site = total number of infusion sites (round to the nearest whole number)
 - d. Calculate initial weekly dose per injection site
 - i. Initial weekly dose/mL divided by number of weekly infusion sites = initial weekly dose/mL per infusion site
 - e. **Note:** to convert milliliters to grams, multiply milliliters by 0.16
2. Rate of administration should not exceed 15 mL per site at rate of 20 mL per hour.
3. Access <http://www.rmsmedicalproducts.com/Freedom60/Global/TubingCalculator/default.aspx> to order the correct flow rate tubing.
4. Parameters for vital signs (see Administration of SCIg, H.1.)
5. Laboratory orders (assess for IgA antibody, Ig levels, kidney/liver studies if indicated).
6. If specific parameters for SCIg infusion administration have not been ordered, the nurse or pharmacist will clarify the prescription with the prescriber. The nurse will administer SCIg according to manufacturer recommendations and policy guidelines.

Assessment & Education

1. Identify the patient by using two identifiers
2. Review orders, lab results and assess appropriateness of therapy.
3. Assess allergy history including allergic responses to human immune globulin or blood products
4. Assess past medical history for risk factors or contraindications
5. Assess for previous post SCIg infusion side effects or adverse reactions
6. Assess patient for recent or ongoing infections. If the patient has an oral temperature of 100.5 F or greater, notify physician.

7. Assess for disease response to previous SCIg/IVIg treatments.
8. Educate the patient (e.g., acquisition and use of pre-medications, adverse reactions, product storage, and administration).

Preparation of SCIg for administration.

1. Locate the anaphylaxis kit in the home. Check expiration date and re-order as needed.
2. Inspect drug label, solution, equipment, and supplies. Verify the tubing flow rate matches the prescription.
3. Wash hands.
4. Prepare clean work surface.
5. Gather supplies.
6. Assemble equipment.
7. Obtain baseline vital signs.
8. Aseptically withdraw SCIg from vial using appropriate syringe:
 - a. Remove cap from vial and vigorously wipe vial stopper with an alcohol wipe for 15 seconds. Allow the vial stopper to dry.
 - b. Lay SCIg vial on flat surface, insert needle into the center of the vial stopper.
 - c. Invert the SCIg vial, fill syringe and remove
 - d. Repeat as necessary to achieve the prescribed dose.
9. Purge air from syringe
10. Attach SCIg syringe to infusion pump tubing.
11. Prime pump tubing by gently pushing on the syringe plunger or by priming on infusion pump.

Administration of SCIg

1. Ensure patient has self- administered or administer oral premeds as ordered
2. Select an appropriate infusion site(s), depending on the amount required. The abdomen, thighs, upper arms hip areas are recommended.
3. Cleanse the site(s) with an alcohol wipe beginning in the center of the site, working outward in a circular motion. If more than one site is required, ensure that each site is 2 inches apart. Allow site(s) to dry.
4. Using 2 fingers grasp the skin around the selected infusion site and insert needle into the subcutaneous tissue.
5. Following needle insertion, attach empty 10 mL syringe to end of tubing and gently pull back on the syringe plunger to check for proper placement. If blood returns, remove and discard the needle and administration tubing. Replace needle(s) using new needle, tubing and infusion site(s).
6. Secure the needle(s) by applying a sterile gauze or transparent dressing over the site and tape

- in place.
7. Load SCIg filled syringe into the clear plastic tube of the infusion pump.
 - a. Loosen the end of the tubing
 - b. Turn pump on by rotating the recessed switch to the ON position and prime tubing.
 - c. Once primed, swab the needle free connector with an alcohol wipe and connect to the indwelling catheter

Monitor for adverse reactions.

1. Vital signs should be taken every 15 minutes' x 2; then hourly until the infusion is completed. Vital signs may be taken less frequently in future infusions if the patient has tolerated well and without incidence of reaction.
2. Adverse effects are usually apparent within 30-60 minutes after the start of infusion.
 - a. Exception: Anaphylaxis, which can be immediate.
 - b. Adverse reactions are caused by an interaction of antibodies in the IVIG with antigens present in the patient at the time of infusion. Symptoms and interventions are listed in Exhibit A.
3. After the infusion is complete, rotate the switch to the OFF position and rewind the pump fully.
4. Remove the used syringe by gently pulling and lifting out.
5. Remove the needle(s) from the insertion site(s).
6. Apply an appropriate dressing to the site(s) as needed.
7. Discard syringe, tubing and needles into sharps container.
8. Chart response to therapy.

Symptoms Related to SCIg Administration and Interventions

Symptoms	Interventions
Local injection site reactions (Expected & should decrease within 24 to 48 hours can last 15 minutes or up to 4 days) • Redness/rash • Blanching • Itching • Discomfort • Swelling	• Assess for tape/transparent dressing allergy • Assess size – should be consistent with volume infused & amount of subcutaneous tissue • Assess length of catheter – may be too short with fluid leaking into intradermal layer • Assess site location—may be too close to muscle • Decrease rate of infusion or decrease

	volume per site • Avoid tracking medication thru the intradermal tissue by not allowing drops of SCIg on the needle tip prior to needle insertion • Assess appropriateness of rotating sites • Consider use of topical anesthetic cream
Extreme pain or discomfort, blistering or spreading redness	• Observe/change technique • Assess needle length –may be too long and irritant abdominal wall • Change catheter to soft tip needle • Adjust infusion regimen (number of sites, volume per site, and rate of infusion) • Apply ice or topical anesthetic cream prior to insertion
Leaking at the catheter site	• Ensure catheter is affixed securely and fully inserted • Assess placement—may be in location that is subject to movement • Length of catheter may be too short • Amount per site may be too great; adjust volume • Assess rate of infusion—adjust rate
Long infusion time	• Bring SCIg to room temperature • Adjust infusion regimen (volume per site, rate of infusion, number of sites) • Check for correct tubing size and length to match infusion rates, check pump function • Observe patient technique
Headache (usually observed several days following administration and may last 1 to 2 days)	• Acetaminophen 10 to 15 milligrams per kilogram po as needed • Prescribed medication

Nausea/Vomiting	• Stop infusion until subsides. • Antiemetic's may be useful. • Adjust infusion regimen (number of sites, volume per site, and rate of infusion)
Hypotension/Hypertension • Monitor blood pressure	• Stop the infusion until blood pressure returns to normal, and then resume infusion • May require decrease in rate of infusion.
Anaphylaxis • Monitor blood pressure • Monitor pulse • Monitor respiration	• If anaphylaxis occurs (hives, wheezing, chest tightness, or respiratory distress), stop the infusion immediately, follow anaphylactic guidelines and call M.D. or 911.

References:

1. First Dose Medication Administration

Revisions:

1. March 2010, new procedure
2. August 2012, added web site to order correct flow rate tubing; added to instruct patient/caregiver on anaphylaxis administration.
3. December 2015, reviewed with no changes and new signatures not required
4. May 2019, reviewed, no changes, converted to guideline

Approval Signatures

Step Description	Approver	Date
Final Approver	Susan Johnson-Richardson: CLINICAL NURSING DIRECTOR (POST-ACUTE CARE SERVICE)	6/21/2022
Policy Owner	Susan Johnson-Richardson: CLINICAL NURSING DIRECTOR (POST-ACUTE CARE SERVICE)	6/21/2022