

Subcutaneous Immunoglobulin Infusion: Just-in-time Education for Best Practice

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Background:

Patients prescribed immunoglobulin (IG) therapy may receive weekly subcutaneous (SC) infusions at home by a trained caregiver. When admitted to the hospital, family often administers the SCIG using their own home equipment. Another option is to switch the SCIG to an intravenous (IV) infusion for reasons such as: family convenience, RN knowledge gap regarding SCIG infusions, IV access is often present, and patient acuity.

SO ... What happens when family is not able to provide the SC infusion supplies and our patient has poor IV access and no medical need for an IV? Order an invasive IV line anyway? Think again!

7 Steps of Evidence-based Practice (EBP) Project Guide:

Step 1) Cultivate a spirit of inquiry: Should registered nurses (RN) learn how to administer SCIG infusions using hospital supplies and equipment to keep patients on their routine weekly SCIG schedules?

Step 2) Ask clinical questions in PICO (T) EBP Question Format:

Population: Hospitalized patients prescribed IG

Intervention: SCIG infusion

Comparison Intervention: IVIG infusion

Outcomes: Immune function & patient/family satisfaction

Time (optional)

In hospitalized patients receiving immunoglobulin (IG) therapy, how do weekly subcutaneous (SC) infusions, compared to monthly intravenous (IV) infusions, affect immune system function and patient/family satisfaction?

Step 3) Search for the best evidence:

Search terms: “subcutaneous infusion” and “immunoglobulins.”

- Drug manufacturer and online pharmacy resources.
- Conversation with families: home routine and supplies.
- Ohio Board of Nursing supports RN scope of practice to administer medications as ordered.

Step 4) Critically appraise the evidence:

Reviewed: 3 RCTs , 10 case studies, 6 long-term follow-up studies, transfusion medicine education, meta-analysis review, and peer-reviewed articles.

Findings

	SCIG	IVIG
Advantages	No venous access is required. Smaller, more frequent infusions allow for gradual absorption and more steady IG levels. Rare adverse systemic side effects Can be self/family-administered at home.	Less frequent infusions . Long-term use since early 1980s.
Disadvantages	More frequent needle sticks. More frequent dosing. Multiple infusion sites. Issues of patient adherence. Local reaction is common discomfort and redness from SC site swelling	Venous access is required. Trained infusion personnel is required. Adverse systemic reaction occurs in 20% to 50% of patients: head and body aches, fever, chills, anaphylaxis, and less common serious delayed reactions such as aseptic meningitis, renal failure, thromboembolism, and hemolytic reactions. The higher risk of adverse systemic reactions is due to the large shifts in IG levels, leading to peaks and troughs

Step 5) Integrate the evidence with clinical expertise and patient preferences/values:

- Maintaining SCIG routines promote stable immune function & lessen adverse effects.
- Nursing advocated for continuation of weekly SCIG infusions by an RN.
- SCIG education was developed from existing IV infusion and SC injection principles and infusion techniques and manufacturer’s guidelines.
- Invasive IV access was avoided.

Hospital supplies adapted to replace home infusion supplies:



Home Supplies	Hospital Supplies
Straight SC infusion needle	24 G. angiocath (0.56 in OR 3/4 in)
Syringe pump	Alaris pump
Y-tubing	60 inch, 1.7 mL syringe tubing

Step 6) Evaluate the outcomes:

- 1)No infections observed in these patients that delayed discharge.
- 2)Observed high patient/family satisfaction: stress levels decreased due to maintenance of routine and freedom from infusion responsibility.
- 3)Increased staff confidence to advocate for best practice.
- 4)Supporting the bedside RN in practicing to their full scope adds to the advancement of nursing practice.

Step 7) Disseminate EBP Results:

- Just-in-time SCIG infusion education & training occurred at the bedside during administrations.
- New hospital policy was developed to guide best practice for SCIG infusion insertion technique, monitoring, troubleshooting, discontinuation, and documentation.
- Poster presentation.

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