Pharmacist-Driven Patient Interventions: Type and Frequency for Patients Receiving Intravenous Immunoglobulin Therapy in the Home Care Setting

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Background

A fundamental aspect of a home infusion pharmacist’s duties is patient assessment and monitoring. At key points throughout the patient’s care, pharmacists should consult with patients and gather information both to determine if the patient’s therapy is effective and appropriate, and to assess for side effects. When issues are identified, the pharmacist should provide counseling to the patient, and if necessary, make therapy recommendations as part of the clinical care team, with the goal of maximizing therapy goals and/or decreasing therapy risks.

This information gathering and resulting action on the part of the pharmacist is particularly crucial for patients on drugs with the potential for severe adverse drug reactions, such as immunoglobulin (Ig). Reactions typically seen in patients receiving Ig — including headache, fever, chills, nausea, and tachycardia — can be due to factors such as dose or infusion rate, changes in weight, or comorbidities. Therefore, these factors should be consistently reviewed and monitored.

To date, several studies have been published regarding pharmacist intervention in community and hospital pharmacy settings for medication therapy management of conditions such as hypertension, diabetes, and acute coronary syndrome. However, there is a lack of studies involving the home infusion pharmacy setting specifically in the treatment of immunodeficient patients receiving Ig therapy.

Purpose

The purpose of this study was to determine the frequency, types, and outcomes of pharmacist-driven interventions for immunodeficient patients on home intravenous Ig (IVIg) therapy. We hypothesized that using this organization’s existing tools (Ongoing Ig Assessment Form, Initial Clinical Assessment Form, and Risk Level Assessment Calculator), pharmacists would identify issues with patient therapy, and that once these issues were identified, the pharmacists would work with prescribers to improve patient outcomes.

Methods

Study Design and Setting

A retrospective analysis was completed of medical charts in five branches of this organization on 13 adult patients (ages 18–75 years) who:

• were receiving home IVIg therapy,
• had a start-of-care date between January 1 and June 30, 2013, and
• had an admitting diagnosis of common variable immunodeficiency (CVID).

We analyzed specific factors, including:

• Timing of medical chart reviews. The analysis included review of the medical charts at three points in the patients’ therapy:
  - New referral documentation review: Upon referral, the pharmacist confirms the appropriateness of the product, dose, frequency, diagnosis, and rate of administration as written on the prescriber’s order.
  - Initial clinical assessment: The pharmacist completes this organization’s Initial Clinical Assessment Form. The form includes a Risk Level Assessment Calculator, which requires the pharmacist to evaluate dose based on patient-specific factors.
  - Ongoing clinical assessment: The pharmacist completes this organization’s Ongoing Ig Assessment Form. This form is completed every 60 days while a patient is on therapy. The form evaluates factors such as infusion reactions experienced, weight, increased rate of infection, and medication profile changes.

• Number and point of interventions. The number of times a pharmacist identified that a clinical intervention was necessary was measured. Secondaryly, the point in the patient’s therapy when the pharmacist identified and acted upon an issue was categorized. These categories corresponded with the above-mentioned medical chart reviews, taking place after:
  - New referral documentation review,
  - Initial clinical assessment, and
  - Ongoing clinical assessment.

• Types of interventions. Interventions are defined as pharmacist-initiated consultations with the prescriber in order to obtain a/arc:
  - Change in the Ig drug product being administered,
  - Change in the rate of infusion,
  - Change in infusion frequency, or
  - Order(s) for additional prescription(s) for symptom management.

Primary Endpoints

The study’s primary endpoint was the number of documented pharmacist clinical interventions. The point in the patient’s course of therapy at which the clinical interventions were identified was the study’s secondary endpoint.

Results

Thirteen patients met the criteria for inclusion in the study. Twelve pharmacist interventions resulting in changes to the patient’s therapy (after consulting with the prescriber) were made for eight of the patients (61.5%). (Some patients had more than one intervention during the study period.) Interventions were most commonly made during ongoing clinical assessment (50%) and upon new referral documentation review (41.7%). The most frequent interventions were change in rate of infusion (50%) and change in Ig drug product (25%). This study was not sufficiently powered for statistical significance.

Conclusions

Although the specificity of the inclusion criteria limited our pool of subjects, our study shows that home infusion pharmacists intervened for 61.5% of the study patients. We also learned that when issues are identified, pharmacists address them with the clinical care team, when necessary; as a result, appropriate changes are made to patients’ therapies.

Further research is needed with a larger sample size to confirm the findings of this retrospective chart review. This research can help confirm the active role of this organization’s (or any home infusion organization’s) pharmacists, particularly when working with the entire care team, including prescribers and nurses, on behalf of immunodeficient patients who are prescribed home IVIg therapy or other therapies with potential for severe adverse reactions.