Enhancing Drug Adherence and Patient Outcomes: The Role of SCIG Pump Selection in Subcutaneous Immunoglobulin Therapy for Primary Immunodeficiency Disease

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Aim

This paper aims to give an overview and an evaluation of adherence to therapy rates of PID patients who receive exclusively SCIG treatment with using a mechanical pump manufactured by KORU Medical Systems in the underlying observation period.

Introduction

Primary immunodeficiency disease (PID) requires lifelong replacement therapy with immunoglobulin (IgG) to reduce infection risk and maintain health. Without lifelong immunoglobulin therapy, PID patients are subject to elevated risk of serious infection and death. Administration routes include intravenous (IV) and subcutaneous (SC) delivery. Recent literature indicated that there is a trend toward SC delivery over IV delivery.

Subcutaneous immunoglobulin therapy is easier to administer at home than IV immunoglobulin therapy. Moreover, the adverse event rate associated with SC therapy is superior to the adverse event rate (and severity) associated with IV therapy. In addition, patients typically score higher on quality-of-life measures with SC when compared to IV therapy.

Convenience, the ability to self-schedule, and the ability to avoid travel and to avoid school or work interference are often cited as reasons for preferring SC to IV therapy.

Study Overview

No prescribed therapy is likely to be efficacious where compliance is poor. Compliance to the prescribed subcutaneous immunoglobulin (SCIG) therapy protocol is vital to ensure better long-term outcomes for patients with PID. Accordingly, information regarding patient compliance to SC therapy is needed. This study is designed to address this information gap.

Methodology

A Specialty Pharmacy captured drug receipts for 23,955 US patients receiving immunoglobulin therapy, for a wide variety of indications. Of these, 11,213 were PID patients. PID patients included icd-10_1 codes from D80.0 through 83.9. Administration modes included SCIG or IVIG therapy. Data were collected from January 2019 to July 2023.

Data captured included a unique patient identifier, demographics (including age and gender), diagnoses, administration routes, drug delivery dates, and pump devices used. The prescribed dose and dose frequency were also captured. Mean volume of drug was also captured for some patients. Where applicable, means and standard deviations were tabulated. This analysis focuses on PID patients receiving SCIG therapy, that used KORU pumps exclusively. Short-term compliance to SCIG therapy was calculated using drug shipment delivery dates.

Results

Among the observed patients, 6,553 (58.4%) received exclusive SCIG therapy. Of these SCIG patients, 3,787 (57.8%) had documented pump information, with 80% utilizing KORU Medical Systems pumps (FREEDOM60® or FreedomEdge®). The most common diagnoses were (1) Common variable immunodeficiency, unspecified (ICD D83.9, 31.4%) and (2) Nonfamilial hypogammaglobulinemia (ICD D80.1, 29.2%). All other ICD codes represented less than 10% of included patients.

Mean age was 50.1 years. Mean time on therapy was 983 days. Age range was 1 to 80+ years. Deliveries of SC therapy grew steadily from 2019 through 2023.

Discussion

This study provides data on short-term adherence to treatment with SCIG. The large dataset suggests that patients and caregivers accept this treatment. Previous studies show that patients prefer SCIG over IV and that the switch improves quality of life. The study’s limitations include limited variables and lack of clinical performance and adverse event analysis. However, previous data support switching to SCIG due to its favorable adverse event profile and patient preference for home administration, improving quality of life. PID patients on IV therapy could benefit from switching to SCIG.

Conclusion

This study showed that a significant portion of patients received SCIG therapy using KORU Medical Systems pumps, indicating the vital role of these pumps in supporting SCIG therapy. SCIG patients with PID who used KORU pumps, refilled their prescriptions every 31.4 days on average. Short-term adherence to SCIG therapy with a KORU pump was calculated at 97%, indicating high compliance. These findings suggest that KORU pumps effectively support SCIG therapy and contribute to high compliance rates.