Pharmacist Interventions for Preventing IVIG-Associated Headaches in the Home Infusion Setting

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Background

Intravenous immune globulin (IVIG) therapy is widely used across multiple disease states and is generally well tolerated; however, infusion-related headaches may occur during infusion or in the post-infusion period. Headaches are one of the most common adverse drug reactions (ADRs) reported by patients, although reported rates may vary considerably. [Reference: Geng B, Clark K, Evangelista M, Wolford E. Low rates of headache and migraine associated with intravenous immunoglobulin infusion using a 15-minute rate escalation protocol in 123 patients with primary immunodeficiency. Front Immunol. 2023 Feb 2] Patients receiving IVIG therapy in the home setting may be at increased risk for persistent or recurrent headaches without timely clinical intervention. Pharmacist-driven assessment and targeted intervention may reduce the frequency and severity of IVIG-associated headaches and improve overall therapy tolerability.

Objectives

To evaluate the types of pharmacist-led interventions and the outcome of the interventions for IVIG-associated headaches occurring during and after infusions, with a focus on prevention of recurrence.

Methods

All patient-reported IVIG-associated headache ADRs starting during an infusion and post-infusion between 2024 and 2025 were documented in the pharmacy system of record, evaluated by a pharmacist, and categorized by ADR classification (mild, moderate, and serious/severe). Post-infusion headaches are defined as those occurring any time after the completion of an infusion through 72 hours post completion of an infusion. Headache severity categories are defined as follows:

- **Mild:** usually transient, easily tolerated, normal activities unaffected, requires no special treatment or intervention.
- **Moderate:** Causes low level of concern, normal activities may be affected, alleviated with simple therapeutic treatments.
- **Severe:** Interrupts normal activities, usually incapacitating, generally requires systemic drug therapy or other therapeutic intervention.
- **Serious:** requires initial or prolongation of hospitalization, results in significant, persistent or permanent change.

When deemed clinically appropriate, the pharmacist implemented a preventative intervention. Outcomes were classified as full or partial prevention versus no or insignificant prevention of subsequent headache episodes. Intervention examples include: infusion rate adjustments, patient counseling, pre-medication modifications, hydration strategies, dose scheduling changes and route or product changes. Descriptive analyses were performed to evaluate intervention frequency and effectiveness.

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Results

The pharmacist implemented preventative interventions for a total of 230 IVIG-associated headache ADRs, including 62 (27%) occurring during infusion and 168 (73%) occurring post-infusion. Overall, pharmacist interventions resulted in full or partial prevention in 209 cases (91%), with 21 cases (9%) demonstrating no or insignificant prevention. During infusion, the majority of headaches were moderate in ADR classification (55/62, 89%), followed by mild (4/62, 6%) and serious/severe (3/62, 5%) ADR classifications. Pharmacist interventions achieved full or partial prevention in 52 of 62 (84%) cases, most commonly through establishment of a new, lower maximum infusion rate, followed by targeted patient counseling and pre-medication adjustments, none which required prescriber involvement. Examples of targeted patient counseling include ensuring that patients are getting adequate oral hydration before, during, and after IVIG infusions, and ensuring that patients are taking their pre-medications at the appropriate times. Post-infusion headache ADRs were more frequent and included (142/168, 84%) moderate, (13/168, 8%) mild, and (13/168, 8%) serious/severe reactions. Pharmacist interventions resulted in full or partial prevention in 157 of 168 (93%) post-infusion cases. The most common intervention for post-infusion headache was patient counseling related to hydration (43/168, 26% of interventions), achieving full or partial prevention in (43/43, 100%) of cases when implemented.

During Infusion

Interventions By Headache Severity	Full or Partial Prevention	No / Insignificant Prevention	Grand Total
MILD	3	1	4
Set a new, lower maximum infusion rate	2	1	3
Patient counseling - premeds	1		1
MODERATE	47	8	55
Set a new, lower maximum infusion rate	23	5	28
Patient counseling - hydration	6	1	7
Patient counseling - premeds	5	1	6
Pre-medication steroid added	3	1	4
Increase days between infusions (multiple day courses)	3		3
Pre-medication IV hydration added	2		2
Patient counseling - repeat premeds	2		2
During/post-infusion IV hydration added	1		1
Divide dose over more days	1		1
Brand change	1		1
SERIOUS / SEVERE	2	1	3
During/post-infusion IV hydration added	1		1
Set a new, lower maximum infusion rate	1		1
Pre-medication IV hydration added		1	1
Grand Total	**52**	**10**	**62**

Post Infusion

Interventions By Headache Severity	Full or Partial Prevention	No / Insignificant Prevention	Grand Total
MILD	13		13
Patient counseling - hydration	5		5
Patient counseling - premeds	3		3
Patient counseling - repeat premeds	2		2
Set a new, lower maximum infusion rate	1		1
Divide dose over more days	1		1
Increase days between infusions (multiple day courses)	1		1
MODERATE	131	11	142
Patient counseling - hydration	38		38
Pre-medication IV hydration added	25	2	27
Set a new, lower maximum infusion rate	20	3	23
Pre-medication steroid added	11		11
Patient counseling - premeds	7	3	10
Patient counseling - repeat premeds	7		7
Increase days between infusions (multiple day courses)	7		7
During/post-infusion IV hydration added	6		6
Pre-medication NSAID added	5		5
Brand change	2	1	3
Lot# change	1	1	2
Route change from IV to SC	1		1
Divide dose over more days	1		1
During/post-infusion steroid added		1	1
SERIOUS / SEVERE	13		13
Pre-medication IV hydration added	4		4
Set a new, lower maximum infusion rate	3		3
Pre-medication steroid added	3		3
During/post-infusion IV hydration added	1		1
Divide dose over more days	1		1
Patient counseling - premeds	1		1
Grand Total	**157**	**11**	**168**

Conclusions

Pharmacist led interventions were associated with a high rate of full or partial prevention of IVIG associated headache ADRs in patients receiving home infusion therapy. Pharmacists were able to implement infusion rate modifications and provide targeted counseling related to oral hydration and premedication use without the need for additional prescriber involvement. These interventions allowed for successful and timely management of headache ADRs which supports improved patient tolerability and outcomes while not adding any additional administrative burden on prescribers. These findings highlight the value of pharmacist led management strategies in optimizing IVIG therapy across the infusion continuum.

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