The Clinical Efficacy of Intravenous Immunoglobulin in Neurology

A Retrospective Cohort Study at the Mater Misericordiae University Hospital

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1 INTRODUCTION

- Intravenous Immunoglobulin (IVIg) is a blood derived medicinal product prescribed for a wide variety of medical conditions.
- Clinical evidence strongly supports the use of IVIg as first-line therapy in three main neurological disorders; Chronic Inflammatory Demyelinating Polyneuropathy (CIDP), Guillain-Barré syndrome (GBS) and Multifocal Motor Neuropathy (MMN).
- There are an increasing number of other neurological conditions where IVIg has been used despite limited evidence-based data.
- Careful consideration of the usefulness of IVIg in each indication is required as it is a limited resource associated with high costs and potential shortages in supply.

2 AIM

- To review clinical indications for IVIg use in neurology patients at the MMUH.
- To compare prescribing practices to international evidence based guidelines.

3 METHODS

- All neurology patients treated with IVIg between 2016 and 2018 were retrospectively reviewed using patient medical notes and pharmacy functionalities at the MMUH.
- Data collected included indication, dose prescribed, total number of IVIg courses, use of alternative therapies before IVIg, and documentation of clinical benefit.
- Results were then compared to international evidence-based guidelines and verified by a neurology consultant and specialist registrar.

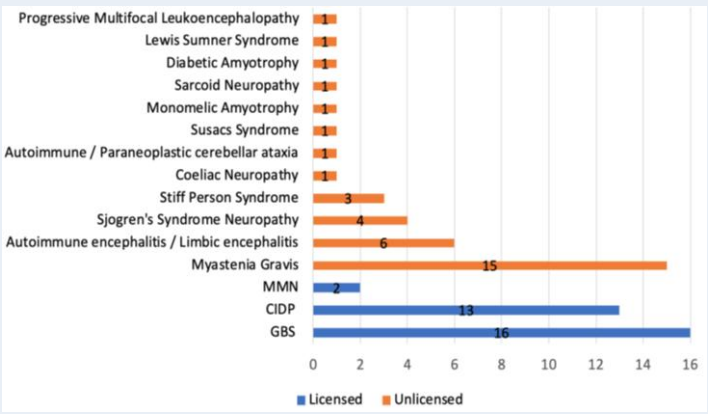

Figure 1: Clinical indications for IVIg use and European Medicines Agency labelling status

4 RESULTS

- A total of 67 patients were included in the study. The patient demographics are displayed in Table 1.
- IVIg was prescribed for 15 indications (see Figure 1). The most common were GBS, Myasthenia Gravis and CIDP.
- 31 patients (46.3%) received IVIg for licensed indications, whereas 36 patients (53.7%) received IVIg for unlicensed indications.
- The level of evidence from international evidence-based guidelines supported the use of IVIg for most indications. Refer to Figures 2, 3 and 4 for a summary of the level of evidence from the United Kingdom (UK), United States (US) and Australian guidelines.

Table 1: Demographic Characteristics (n = 67, %)

Gender	Male	41 (61.2%)
	Female	26 (38.8%)
Administration Setting	Inpatient	41 (61.1%)
	Outpatient	21 (31.3%)
	Both inpatient and outpatient	5 (7.5%)
Age at initiation of treatment (years)	Mean ± Standard Deviation	58.2 ± 16.352
Weight (kg)	Mean ± Standard Deviation	80.3 ± 18.128

Figure 2: Summary of UK level of evidence for IVIg use

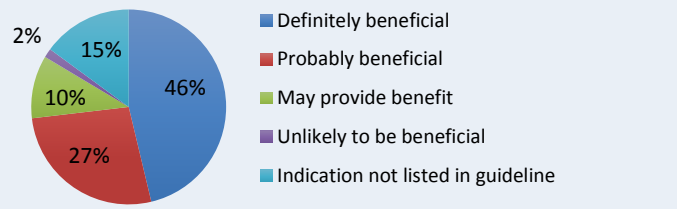

Figure 3: Summary of US level of evidence for IVIg use

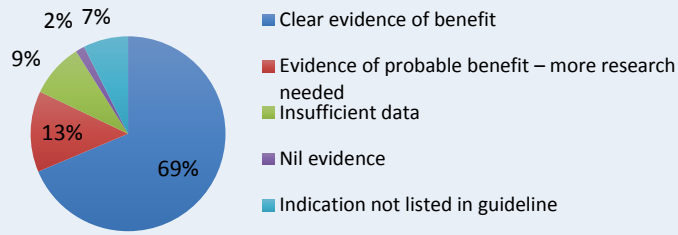

Figure 4: Summary of Australian level of evidence for IVIg use

5 CONCLUSION

- This study demonstrates that IVIg is prescribed for a wide range of neurological conditions at the MMUH, the majority of which are unlicensed.
- In comparison to international evidence-based guidelines, the use of IVIg was supported for most indications. However several indications were prescribed IVIg despite limited evidence of efficacy.
- This study highlights the need for evidence-based clinical practice guidelines for IVIg use at the MMUH and Ireland.

REFERENCES:

1. Perez EE, et al. Update on the use of immunoglobulin in human disease: A review of evidence. J Allergy Clin Immunol. 2017.
2. Updated Commissioning Criteria for the use of therapeutic immunoglobulin in immunology, haematology, neurology and infectious diseases in England January 2019. London Department of Health 2019.
3. National Blood Authority of Australia. Criteria for the Clinical Use of Intravenous Immunoglobulins in Australia. Canberra: Commonwealth of Australia, October 2019.

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