Utilization of Intravenous Immunoglobulin (IVIg) in the Pediatric Neurology Department of a Tertiary Children's Hospital in the Middle East

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Introduction

IVIg is a pooled antibody and a biological agent used to manage a plethora of conditions including various neurological conditions. It is licensed for various uses by the US FDA and by the UK Department of Health and Social Care Guidelines. There has been a noted increase in use of IVIg for off-label indications over the past few years, raising concerns over the patterns of utilization of this rare resource especially given the recent shortage of IVIg worldwide. Our retrospective cross-sectional study assesses the adherence to the international clinical guidelines in our hospital and the potential benefits of IVIg use on the clinical outcome.

Objectives

- To assess the adherence of the neurology department at a tertiary pediatric hospital to international clinical standards concerning intravenous immunoglobulin (IVIg) usage
- To evaluate the impact of simultaneous steroid treatment and the significance of premedication in averting side effects

Methods

A retrospective analysis conducted through review of electronic health records. All patients aged 0-18 years who received IVIg for neurological indications between January 2019 and December 2021 were included. Data was then analyzed through SPSS, and practices were compared to the "NHS Commissioning Criteria Policy for the use of therapeutic immunoglobulins, 2021".

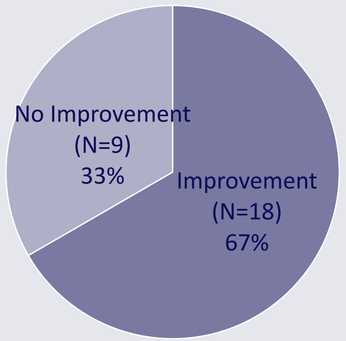
Results

- Total encounters: 43 encounters (27 patients)
- 96% of patients received IVIG for indications approved by the NHS (N = 26).
- With one exception, every patient was given IVIg at 2 g/kg over two days. This practice contrasts with NHS's recommendation of dispensing it over five days for most neurological conditions, except CIDP, which aligns with the two-day regimen.

Table 1. Indications for IVIg Administration

	No. of Encounters
Chronic Inflammatory Demyelinating Polyneuropathy (CIDP)	5
Guillain-Barre Syndrome (GBS)	14
Dermatomyositis	11
Encephalitis (Autoimmune / Infectious)	8
Opsoclonus-Myoclonus-Ataxia Syndrome (OMAS)	1
Multiple Sclerosis	4

Figure 1. Improvement Post-IVIG



- Aside from GBS and HHV-6 Encephalitis cases, 85% of the improving cases (N=6 out of 7) had concomitant steroid treatments. Yet, no conclusive evidence points to a combined benefit of steroids and IVIg (p=0.09).
- Preliminary findings don't validate the benefit of premedication before IVIg to mitigate side effect risks (p=0.47).

Conclusions

This is the first study in the UAE detailing IVIg utilization in a paediatric population in a neurology service setting. Even with suboptimal alignment with NHS dosing guidelines, favourable outcomes were prevalent in our clinical approach. Emphasizing on GBS, the primary IVIg indication in our study, displayed substantial patient recovery even with a shortened treatment duration against NHS standards. It's clear IVIg holds therapeutic potential for certain neurological ailments, but broader, uniform studies are crucial for treatment comparisons.

References

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