SUBCUTANEOUS IMMUNOGLOBULIN

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Please find following a summary of a literature search and relevant results. All articles can be provided in full - email library@monashhealth.org for a list of the articles you require.

QUESTION

Best practice administration of subcutaneous immunoglobulin

SEARCH LIMITS

English-language

Last 5 years

SEARCH METHODOLOGY

A systematic search was conducted for literature. See the Appendix for the PRISMA chart, search terms, and Medline search strategy.

DATABASES SEARCHED

- Medline – index of peer reviewed articles across health sciences and medicine.
- Embase – index of biomed and pharmacological peer reviewed journal articles.
- Emcare – index of nursing, allied health, critical-care medicine and more.
- Grey literature – Google, Google Scholar, Trip database.

LITERATURE RESULTS

All articles can be provided in full text - email library@monashhealth.org a list of articles you require.

GENERAL RESOURCES

ONLINE RESOURCES (GREY LITERATURE)

Australian Commission of Safety and Quality (ACSQHC). (2021). Standard 7 – Blood Management Standard. https://www.safetyandquality.gov.au/standards/nsqhs-standards/blood-management-standard

Australian and New Zealand Society of Blood Transfusion (ANZBT) & Australian College of Nursing (ACN). (2019). Guidelines for the administration of blood product. https://anzsbt.org.au/guidelines-standards/anzsbt-guidelines/

Australian Red Cross Lifeblood. (2023). *Comparison of Intravenous Immunoglobulin Products available under National Supply Arrangements from 1 May 2023.*

https://www.lifeblood.com.au/sites/default/files/resource-library/2023-05/Comparison_Table_of_IVIg_Products_Available_from_1_May_2023.pdf

Australian Red Cross Lifeblood. (2023). *Comparison of Subcutaneous Immunoglobulin Products available under National Blood Supply Arrangements from 1st July 2023.* https://www.lifeblood.com.au/sites/default/files/resource-library/2023-07/LST-00116_Comparison_scig_1.07.23_V3_Final.PDF

Victorian Department of health. (2023). *Clinical practice guidance.* https://www.health.vic.gov.au/patient-care/subcutaneous-immunoglobulin-scig-program-tools-and-resources

Victorian Department of health. (2022). *Managing the availability and safety of blood and blood products*. https://www.health.vic.gov.au/patient-care/managing-the-availability-and-safety-of-blood-and-blood-products

Takeda Pharmaceutical Company (2023). Our Products in Australia. https://www.takeda.com/en-au/what-we-do/our-products

Commonwealth of Australia. (2023). National Blood Authority Australia. https://blood.gov.au/

PEER-REVIEWED LITERATURE - IN REVERSE CHRONOLOGICAL ORDER

Articles are grouped by profession:

- Administration & Dosage
- Intravenous Immunoglobulin

Each article summary contains excerpts from the abstract and an online link.

ADMINISTRATION DOSAGE

Anderson-Smits, C., et al. (2022). Subcutaneous immunoglobulin use in immunoglobulin-naive patients with primary immunodeficiency: A systematic review. Immunotherapy 14(5), 373-387. https://libkey.io/libraries/1284/articles/517369071/full-text-file?utm_source=nomad

Identify and describe published literature on the use of subcutaneous immunoglobulin (SCIG) as initial immunoglobulin (IG)-replacement therapy for patients with primary immunodeficiency diseases (PID). We systematically identified and summarized literature in MEDLINE, Embase, BioSciences Information Service and Cochrane Library assessing efficacy/effectiveness, safety/tolerability, health-related quality-of-life (HRQoL) and dosing regimens of SCIG for IG-naive patients with PID. Although studies were lacking, available data suggest IG-naive and IG-experienced patients initiating SCIG likely have similar outcomes.Zis, P., et al. (2022). Immunoglobulin use for the management of painful peripheral neuropathy: A systematic review and meta-analysis. *Pain and Therapy 11*(4), 1219-1227. Full-text
The aim of this systematic review and meta-analysis was to study the potential of IG for the treatment of painful peripheral neuropathy (PPN). The outcome of interest was the percentage of patients with PPN who achieved pain relief following IG administration. The use of IG for the treatment of pain due

to peripheral neuropathy has a potential therapeutic benefit. Further studies across patients with different types of painful peripheral neuropathy are needed to better characterize this effect.

Adiao, K. J. B., et al. (2020). Efficacy and tolerability of subcutaneously administered immunoglobulin in myasthenia gravis: A systematic review. *Journal of Clinical Neuroscience 72*(1), 316-321. https://libkey.io/libraries/1284/articles/339734093/content-location?utm_source=nomad

Subcutaneous immunoglobulin (SCIg) is an emerging therapeutic alternative in the management of myasthenia gravis (MG) due to its potential efficacy, safety, cost effectiveness and ease of administration.The objective of this study is to determine the efficacy and safety of SCIg in the treatment of adult patients with myasthenia gravis. The evidence from limited uncontrolled studies gathered in this review showed that SCIg may improve functional disability in patients with MG. Local and mild adverse events were reported with its administration, but no systemic and serious adverse events were noted.

Pecoraro, A., et al. (2020). Correlations among subcutaneous immunoglobulin dosage, immunoglobulin g serum pre-infusional levels and body mass index in primary antibody deficiency patients: A pooled analysis from the SHIFT/IBIS studies. *Clinical drug investigation 40*(3), 279-286. https://libkey.io/libraries/1284/articles/369498356/full-text-file?utm_source=nomad

The SHIFT study considered patients who were treated with intravenous immunoglobulin (IVIG) or SCIG 16% (Vivaglobin R) and then replaced this therapy with weekly treatments of SCIG 20% (Hizentra R). The IBIS study evaluated patients previously taking a weekly SCIG 20% regimen, who instead began therapy with biweekly SCIG 20% to assess the correlation between the dose of immunoglobulin G (IgG) administered and the body mass index (BMI) of patients, determine if there is a need for dosage adjustments on a BMI basis, and identify the predictors of serum IgG trough levels in our cohort. These findings support the concept that the cumulative monthly dose of SCIG and the dose of SCIG per kilogram of body weight affect IgG trough levels in PAD patients, irrespective of BMI.

INTRAVENOUS IMMUNOGLOBULIN

Goswami, R. P., et al. (2022). Efficacy and safety of intravenous and subcutaneous immunoglobulin therapy in idiopathic inflammatory myopathy: A systematic review and meta-analysis**.** *Autoimmunity Reviews 21*(2), 102997. https://libkey.io/libraries/1284/articles/506143803/content-location?utm_source=nomad

A systematic review and meta-analysis on the efficacy and safety of intravenous (IVIg) and subcutaneous (SCIg) immunoglobulin (Ig) therapy in the treatment of idiopathic inflammatory myopathy (IIM) and juvenile dermatomyositis (JDM). Add-on Ig therapy improves muscle strength in patients with refractory IIM, but evidence on Ig therapy in new-onset disease and extramuscular disease activity is uncertain

Keddie, S., et al. (2022). Immunoglobulin for multifocal motor neuropathy. *Cochrane Database of Systematic Reviews 2022*(1), CD004429. https://libkey.io/libraries/1284/articles/513768951/content-location?utm_source=nomad

Low-certainty evidence from three small RCTs shows that IVIg may improve muscle strength in people with MMN, and low-certainty evidence indicates that it may improve disability; the estimate of the magnitude of improvement of disability has wide CIs and needs further studies to secure its significance. Based on moderate-certainty evidence, it is probable that most IVIg responders

deteriorate in disability and muscle strength after IVIg withdrawal. SCIg might be an alternative treatment to IVIg, but the evidence is very uncertain.

Chen, Y., et al. (2019). Efficacy and tolerability of intravenous immunoglobulin and subcutaneous immunoglobulin in neurologic diseases. *Clinical Therapeutics 41*(10), 2112-2136. https://libkey.io/libraries/1284/articles/337357815/content-location?utm_source=nomad

IVIg administration still faces many challenges. Thus, it will be necessary to standardize the use of IVIg in the clinical setting. SCIg administration is a novel and feasible treatment option for neurologic and immune-related diseases, such as chronic inflammatory demyelinating polyradiculoneuropathy and idiopathic inflammatory myopathies. As our understanding of the mechanisms of action of IVIg improve, potential next-generation biologics can being developed.

Sala, T. P., et al. (2018). Efficacy and patient satisfaction in the use of subcutaneous immunoglobulin immunotherapy for the treatment of auto-immune neuromuscular diseases. *Autoimmunity Reviews 17*(9), 873-881. https://libkey.io/libraries/1284/articles/213759935/content-location?utm_source=nomad

We reviewed the efficacy of SCIg administration in terms of muscle strength maintenance and patient satisfaction comparing with IVIg in the treatment of auto-immune neuromuscular diseases. These results should permit a broad range of patients to self-administer immunoglobulin treatments at home, potentially improving patient acceptability while reducing hospital visits and healthcare costs for the treatment of chronic auto-immune neuropathies.

MEDLINE SEARCH STRATEGY

Ovid MEDLINE(R) ALL <1946 to October 16, 2023>

1 *Immunoglobulins/ad [Administration & Dosage] 978
2 (Subcutaneous and Immunoglobulin).mp. 4627
3 1 or 2 5504
4 Subcutaneous Immunoglobulin.tw,kf. 472
5 systematic review.ti. or meta-analysis.pt. or meta-analysis.ti. or systematic literature review.ti. or this systematic review.tw,kf,hw. or pooling project.tw,kf,hw. or (systematic review.ti,ab. and review.pt.) or meta synthesis.ti. or meta-analy*.ti. or integrative review.tw,kf,hw. or integrative research review.tw,kf,hw. or rapid review.tw,kf,hw. or umbrella review.tw,kf,hw. or consensus development conference.pt. or practice guideline.pt. or drug class reviews.ti. or (1469-493X or 1361-6137).is. or (1539-8560 or 1056-8751).is. or (2046-4924 or 1366-5278).is. or 1530-440X.is. or 2202-4433.is. 468519
6 (clinical guideline and management).tw,kf,hw. or ((evidence based.ti. or exp evidence-based medicine/ or best practice*.ti. or evidence synthesis.ti,ab.) and (review.pt. or exp diseases non mesh/ or exp "behavior and behavior mechanisms"/ or exp therapeutics/ or evaluation studies.pt. or validation studies.pt. or guideline.pt. or pmcbook.af.)) 84474
7 4 or 5 468977
8 3 and 4 and 7 472
9 limit 8 to (english language and last 5 years) 227
10 limit 9 to (meta analysis or "systematic review") 7

SEARCH TERMS

Concept	MeSH headings	Keywords
Administration	Immunoglobulins/administration	Immunoglobulin administration
Subcutaneous Immunoglobulin	Immunoglobulins	Subcutaneous Immunoglobulin
Systematic Review	Systematic Review, Evidence-Based Medicine	Systematic review, meta analysis, meta-analysis, clinical guideline, management, evidence based medicine, best practice

APPENDIX

PRISMA CHART