National Statement on the Benefits of Subcutaneous Immunoglobulin Treatment

Subcutaneous immunoglobulin (SCIg) is a clinically safe and potentially cost saving treatment option that improves the quality-of-life (QoL) outcomes for patients[1,2]. Access to SCIg is available under the national blood arrangements for the treatment of 5 medical conditions as an alternative to intravenous immunoglobulin (IVIg). SCIg treatment should be available to all eligible patients where clinically appropriate, along with education, training, support and follow-up care.

Purpose of this document

This national statement aims to provide clear evidence surrounding the clinical use for SCIg. It aims to provide clinical evidence to assist patients and health care professionals in the decision-making process for individual suitability for SCIg.

This document is also designed for health services to assist with their evidence to support obtaining resources for SCIg programs, including information to assist with identifying possible SCIg funding sources.

Background

SCIg is a fractionated product containing a concentrated mix of immunoglobulins made by pooling and purifying plasma from hundreds of blood donations. Immunoglobulin (Ig) treatment improves the QoL for some patients with immune system disorders and immune-mediated conditions[2]. In some cases, SCIg use can be lifesaving[3].

SCIg is administered through a needle into the subcutaneous tissue. This enables patients and carers an option where possible to self-administer the product outside a healthcare facility.

In Australia, SCIg is available for the treatment of the 5 medical conditions, under circumstances that meet the *Criteria for the Clinical Use of Immunoglobulin in Australia* (the Criteria):

- inborn errors of immunity (IEI) (primary immunodeficiency diseases) with antibody deficiency
- specific antibody deficiency
- acquired hypogammaglobulinaemia secondary to haematological malignancies or post-haemopoietic stem cell transplantation
- secondary hypogammaglobulinaemia unrelated to haematological malignancy or post-haemopoietic stem cell transplantation
- chronic inflammatory demyelinating polyneuropathy (including IgG and IgA paraproteinaemic demyelinating neuropathies) (CIDP).

Patients can only access government-funded SCIg treatment through an approved SCIg program. The requirements of the SCIg program aim to ensure patients are supported to receive treatment. This includes the provision of education and training, equipment and consumables to safely administer SCIg at home at no additional cost to the patient.

Patient Benefits

Patient benefits of SCIg can be collectively measured through quality-of-life indicators. Research has demonstrated the positive effect of SCIg across several indicators[1]:

- Health: A recent study on immunoglobulin replacement therapy (IRT) for infection prevention in common variable immunodeficiency (2025), stated that Infection rates were comparable between patients utilising IVIg or SCIg routes of administration. There was with no significant differences in major bacterial infections, recurrent mild infections, or opportunistic infections. While both IVIg and SCIg are considered equally effective, SCIg is associated with fewer systemic adverse events, enhanced quality of life, and greater patient autonomy[4]. Immune modulation studies concluded that there were no significant differences in muscle strength outcomes in CIDP with SCIg[5]. A meta-analysis concluded that the efficacy of SCIg is similar to IVIg for CIDP and has a significant safety profile[10]
- Employment, education and financial situation: SCIg provides patients with the flexibility to arrange their infusions around their work, school or study timetable. Research on QoL indicates that participating in the workforce is considered to play a significant role in the perception of QoL. The financial burden of reducing employment (due to being unwell or to care for family members) impacts individuals with chronic conditions[6]. It is not only the flexible timing of patients being able to choose when to infuse, but also the reduced time spent travelling to hospital for infusions. Therefore, compared to IVIg, SCIg has less time overall, spent in attending to infusions. This allows more time available for workforce or education participation[5]. Further studies in children with IEI stated that self-administrating SCIg at home can improve paediatric patients QoL, decrease utilisation of the health care system, reduce travel time, empower patients, and promote patient responsibility[7] .
- Relationships and connection to community: SCIg allows patients to self-administer treatment at home at a time and day that best suits them. This flexibility allows patients to manage their treatment around their lifestyle. Research demonstrates that the more social relationships people have, the more positive their sense of wellbeing[2]. Allowing treatment options that are more flexible, provides opportunity for increase social relationships.

Clinical considerations

SCIg therapy has been shown to be well tolerated for many patients, similar efficacy to IVIg in preventing infections in patients, and are safe and well tolerated[8, 9,13] . Studies have shown that both SCIg and IVIg have been reported to be safely used across the lifespan, however, assistance may be required where the patient has limited cognitive capacity or problems with dexterity[9]. Offering patients more control over their treatment may translate into improved adherence[13] .

There are significant pharmacokinetic differences between IVIg and SCIg routes of administration. Ig has a half-life between 21 and 30 days. IVIg infusions are initiated usually every 3–4 weeks. As IVIg is administered directly into the intravascular space, an infusion of a 2 g/kg induction dose can increase Ig concentration within minutes up to 4 times pre-infusion levels, creating a large peak level[13]. Following the IVIg infusion, Ig concentration declines rapidly over the next 48–72 hours as it disperses into the extracellular volume. This has both positive and potential negative implications. The sharp peak in Ig may aid a faster onset of action and functional improvement compared with SCIg, however, this same peak can result in systemic

adverse events[13].

SCIg delivers Ig to subcutaneous tissue where diffusion occurs into the bloodstream slowly over 48–72 hours, resulting in steady state Ig concentrations that are 12–15% higher than the Ig trough levels typically observed with IVIg infusions[13]. After 36-72 hours, peak Ig concentrations are reached, with maximum concentrations about 60% of that observed after IVIg infusions. This gradual climb toward a lower peak concentration is one reason systemic adverse events are less frequent with SCIg[13]. Therefore, more stable IgG levels reduce the risk of:

- immediate and systemic adverse effects due to high IgG levels post-infusion[13]
- symptoms related to wearing off effects of IgG trough levels[8].

SCIg requires more frequent administration (ranging from 1-3 times per week to once a fortnight) by patients or carers. Patients might infuse SCIg at multiple injection sites concurrently to reduce treatment time.

The most common adverse reaction to SCIg is localised infusion site reactions which are relatively easily managed with over-the-counter medicines. General information is available through the ASCIA website at https://www.allergy.org.au/patients/immunodeficiencies/scig-therapy-general-information. The prevalence and severity of these local infusion site reactions also have been observed to decrease with repeated infusions[10]

Some medical conditions, such as CIDP require high dose IVIg treatments. A meta-analysis of 8 studies reviewing the use of SCIg as a treatment option for CIDP patients concluded that there were no significant differences in muscle strength outcomes in CIDP with SCIg[11].This meta-analysis concluded that the efficacy of SCIg is similar to IVIg for CIDP and has a significant safety profile[10]. SCIg should be considered as an alternative in long-term treatment of CIDP patients[12,13].

I have patients who may be suitable for SCIg, what should I consider?

Below is a table to assist in the clinical decision making between the two Ig treatment options.

Patients who may be more suitable for IVIg[16]	**Patients who may be more suitable for SCIg[16]**
Patients with poor dexterity and lacking a reliable support network	Patients with poor venous access or those where a port is being considered
Patients whose compliance for self-administration is in question	Patients experiencing intolerable side effects with IVIg infusions
Patients lacking skills, confidence or drive to learn self-administration, including limitations in some elderly patients. Patients' support networks need to be considered alongside individual patient skills.	Patients experiencing treatment-related fluctuations between IVIg infusions
Patients preferring less frequent infusions	Patients wanting more autonomy, freedom, or flexibility with their infusion location/schedule
Patients with excessive bruising and subcutaneous bleeding tendency	Patients preferring shorter, more frequent infusions
	Patients wanting to reduce their hospital visits, which may reduce their risk of exposure to infection.

Healthcare System Benefits

SCIg is a cost-saving treatment option compared to IVIg in the Australian healthcare setting[14]. Although the cost per gram is higher for SCIg compared to IVIg, SCIg has been shown to be more cost effective in the long term[13] This is in part due to the reduction in indirect healthcare costs, as SCIg reduces the need for regular hospital visits, and nursing supervision with each IVIg administration.

A 2020 Australian cost analysis comparing IVIg treatment to SCIg found that SCIg delivered a cost saving benefits to health services at an average of $52,000 annually per patient[13]. The cost analysis considered the cost of the product, consumables and training costs for SCIg, and consumables and direct and indirect ward costs for IVIg. Similar evidence of cost saving for health services internationally has also been published[15]. Understanding the cost-effectiveness of Ig and associated costs is vital to generate a business care for additional resources. There are differences between each state and territory healthcare systems in Australia creating variations in staffing cost, SCIg program design, and allocation of resources[13]. Each local health district would be recommended to complete an independent analysis based on their environment.

In line with the SCIg Report recommendation and submissions by jurisdictions and patient representative groups, the Independent Health and Aged Care Pricing Authority (IHACPA) has added a Tier 2 Non-Admitted Services Classification pricing for SCIg infusion therapy.

Pricing is counted per SCIg infusion at a patient's home, with adjustments available for patients that identify as Aboriginal or Torres Strait Islander and where treatment is provided in a regional or remote location. Further resources are available on the IHACPA's website at Resources | IHACPA.

Resources on immunoglobulin therapy information webpage within the NBA website are available at https://www.blood.gov.au/immunoglobulin-therapy. There are a variety of resources available for both patients and health professionals.

The national eligibility criteria that permit the use of SCIg enable either the subcutaneous or intravenous administration of Ig. In the 2023–24 financial year, these 5 conditions represented approximately 60% of total Ig dispensed annually in Australia. When considering the total Ig usage for the 5 medical conditions that SCIg is available for under the criteria, SCIg accounts for approximately 17%, with the remaining patients accessing IVIg. This indicates that there is the potential for a significant increase to at least 25% as recommended through the SCIg Report, and compared to current usage of SCIg in comparable countries.

An increase in patients transitioning to SCIg can create more capacity for healthcare facilities to utilise acute hospital beds for other patients. In doing so, SCIg reduces demand for hospital infusion chairs and associated resources, freeing capacity for other patients. The National Strategic Framework for Chronic Conditions provides agreed guidance towards the delivery of a more effective and coordinated national response to chronic conditions. One of these objectives is to provide efficient, effective and appropriate care to support people with chronic conditions to optimize QoL. Where appropriate, facilitating the shift from hospital-based care to a community-based option aligns with the strategic health goals[16].

In summary, SCIg is a clinically safe and cost-effective option that promotes increased quality of life for patients. The decision between IVIg and SCIg is based on many factors such as long-term side effects, autonomy, disease severity, comorbidities, venous access and patient preference[17]. Eligible patients are strongly advised to discuss SCIg as an option of care with their treating specialist if interested in accessing SCIg as an alternative to IVIg.

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