# ONTARIO IMMUNE GLOBULIN UTILIZATION MANAGEMENT

**VERSION 5.0**
**DATE: JANUARY 2025**

ORBCoN
Ontario Regional Blood Coordinating Network

Inspiring and facilitating best transfusion practices in Ontario.

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**Disclaimer:**
The information contained in the Ontario Immune Globulin Utilization Management document is not intended to replace sound clinical judgement concerning a patient's unique situation.

Furthermore, although the advice and information are believed to be true and accurate at the time of publication, neither the authors nor the publishers accept any legal responsibility for any errors or omissions that may have occurred.

### IG Utilization: Best Practice Recommendations

IG use continues to rise across Canada at a rate of approximately 6-10% annually[51]. For IG stewardship, it is crucial to follow these key recommendations when providing patient care:

IG is only prescribed where there is evidence to support use, **and**

1. Alternative therapies have failed or are not feasible / available
2. IG dose is prescribed as per adjusted body weight calculator criteria
3. Use should be discontinued if benefit is not demonstrated
4. For continued use (i.e., maintenance therapy) the evaluation of clinical effectiveness must:
    - Be performed at 6 months after initiation of therapy **and** at a minimum annually thereafter
    - Include adjustment to the lowest effective dose and/or greatest treatment interval
    - Consider trials of alternative therapies where appropriate

# Introduction

ORBCoN is funded by the Ontario Ministry of Health to develop, distribute, promote and educate users on blood utilization management, including Immune Globulin utilization best practices. This is version 5.0 of the Ontario Immune Globulin Utilization Management (IGUM) document. Version 1.0 was first circulated November 5, 2009, with subsequent versions in March 2012, May 2016, and January 2018. In 2015, physicians within each of the specialties reviewed the Ontario IGUM document, providing recommendations for IG indications following an evidenced based literature review. The IGUM for Rheumatology, Neurology, Hematology, and Solid Organ Transplantation indications were published in May 2016. No revisions were deemed necessary at that time for Infectious Disease conditions and review of Dermatology and Immunology were completed in July 2017. The IGUM is also included in the Intravenous Immune Globulin Toolkit, published by the Ontario Regional Blood Coordinating Network (ORBCoN) in September 2010, October 2015, and January 2018. This current version (5.0) includes additional indications, outside the previously published version, as well as indications where IG is not recommended as part of a course of treatment for specified medical conditions.

The additional indications incorporated within this current version (5.0) have largely been adopted with permission from the 2022 edition of the Criteria for the Clinical Use of Immune Globulin. This document was the output of the Prairie Collaborative Immune Globulin Utilization Management Framework Project, a collaboration of an Inter-Provincial Medical Expert Committee, the Institute of Health Economics of Alberta, the Alberta Ministry of Health, Shared Health Manitoba, and Saskatchewan Ministry of Health. The Criteria for

the Clinical Use of Immune Globulin: Background Document, outlines the methods and supporting information that was used in the development of the document. Ontario is indebted to the Prairie Collaborative for sharing their expertise.

In the future, the Ontario IG Advisory Panel, in cooperation with the Ontario Ministry of Health and ORBCoN as secretariat, are aiming to collaborate with the Prairie Collaborative group to develop an interprovincial edition of the Criteria for the Clinical Use of Immune Globulin. This collaboration will be an effort to standardize the way IG is used across the country.

This summary of indications and information on IG utilization has been prepared specifically for use in Ontario, based on the input from the Ontario IG Advisory Panel. It must be noted that in this version (5.0), only the recommended use and do not use indications from the 2022 Prairie Collaborative document have been included. There may be new evidence to support IG use in other medical conditions since the 2022 publication of the Prairie Collaborative document that has not been included in this version (5.0) Ontario document. New evidence will be evaluated in the future comprehensive revision of the Criteria for the Clinical Use of Immune Globulin document.

The information in this document is intended as supportive for prescribers of IG seeking clarification on the common and clinically appropriate uses of IG. Unless specifically indicated, use is applicable to both Intravenous and Subcutaneous forms of IG. Use of Subcutaneous IG (SCIG) should be evaluated based on patient medical condition as well as ability to tolerate and self administer.

## Dosing of Immune Globulins

**Dosing Through "Adjusted Body Weight" Calculation-** Adjusted body weight (ABW) dosing for IG (IVIG and SCIG) provides effective treatment, promotes the responsible management of a finite, costly resource and decreases the likelihood of adverse events, some of which can be serious. In Ontario, the dose calculator **must** be used for all obese patients (obese defined as patients with BMI >30 as per Health Canada's Guidelines for Body Weight Classification in Adults[45]) and **should** be used for calculating the dose in all patients who are 152.4 cm or over in height **and** males over 50 kg / females over 45.5 kg in weight (patients not meeting either one of these criteria, then actual weight = dosing weight). Round dose down to nearest vial size to minimize product wastage.

**For pregnant patients:** The pre-pregnancy weight should be used for the dose calculator (in addition to the above criteria). Exception is given for patients with Primary Immune Deficiency/Secondary Immune Deficiency where IG dose should be titrated based on IgG levels.

**For pediatric patients:** If less than 18 years of age and **do not meet** the dose calculator height and weight parameters (height ≥152.4 cm, **and** weight males ≥ 50 kg / females ≥ 45.5 kg), then actual weight = dosing weight.

The dose calculator and BMI tool can be found at: IVIG Dose Calculator (transfusionontario.org)

## IG Categories

To support health care professionals, including prescribers, medical laboratory technologists and transfusionists in the IG decision making process, version (5.0) of the IGUM has categorized medical conditions

based on the evidence currently available to support IG therapy. The following colour coded categorization provides a quick visualization of the medical conditions that fall within each category.

**Recommended Indications in which IG can be used** – medical conditions falling under this category have established benefits with IG therapy. While review of benefit for ongoing treatment should always be evaluated, medical conditions under this category should not reasonably be denied. If dosing and administration schedule fall within the recommendations, then TM medical director approval is not necessary.

**Not for Routine Use** – medical conditions falling under this category have demonstrated some benefits with IG therapy, but often alternative treatments are available and should be considered first. Consultation with a TM medical director is suggested.

**Do not use** – medical conditions in this category should not be considered for IG therapy. Consultation with a TM medical director is required.

## Ordering IG in Ontario

There are two main forms for ordering IG in Ontario, and their use is outlined in the Immune Globulin Toolkit for Ontario. In this version (5.0), new medical conditions have been added, however the ordering forms have not been updated. An 'order number' classification has been introduced alongside the medical condition, recommendation, and dosing information on the Clinical Indications tables. This order number will support IG requests using the established forms for the new medical conditions and standardize ordering practices for those medical conditions that might fall under a broader nomenclature. This order number **or** the indication name can be written on the form in the "other" category (see example below).

A novel SCIG order form has been developed, which includes all required information but is specific to SCIG. Hospital sites can opt to use this SCIG form if it meets their needs or use hospital specific SCIG forms that include all the required information. All of these forms can be found at Ordering IG in Ontario – Transfusion Ontario.

Alternatively, site specific electronic IG orders are acceptable if, at minimum, the following information can be readily obtained upon request (e.g., shortage, audit):

- Patient demographics; age, sex, height, weight
- Date of request
- Prescriber name and specialty
- Request for IVIG or SCIG
- Indication
- Dose type; one time dose, induction, maintenance
- Dose in g/kg
- Total dose and frequency of administration (dose divided over # days, given every # weeks, for # months)

Electronic orders for renewal / maintenance requests should consider including additional tools to prompt prescribers of their responsibility to ensure clinical effectiveness, determine lowest effective dose/duration, and ensure alternative therapies have been explored.

**Example-** Ordering Indications not listed on current MOH IG Request forms:

Ontario

MOHLTC IG Request Form

**For non-neurology use only**

| | |
|---|---|
| Patient Name | Doe, Jane |
| Patient Hospital/Medical Record# | 123456 |
| D.O.B.(YYYY-MM-DD) | |
| Gender | Female |
| Location | |
| Ontario Health Insurance# | |

**ALL FIELDS BELOW ARE MANDATORY**

| | |
|---|---|
| Date Requested: (YYYY-MM-DD) | Treating Physician: |
| Date Required: (YYYY-MM-DD) | Physician Specialty: |
| Hospital where patient will receive IG. | Physician Phone #: |

**Dosage Information: (Verification of dose using Dose Calculator tool is recommended)**

☒ Intravenous IG (IVIG) ☐ Subcutaneous IG (SCIG)

Patient Weight: 85 kg Patient Height: 175 cm BMI: **Dose must be adjusted for BMI greater than or equal to 30**

| | |
|---|---|
| ■ Induction/One-time dose | 0.4 g/kg = Total dose of 30 g; divided over 1 days |
| ☐ Maintenance dose | g/kg = Total dose of g; divided over days; every weeks; Duration: months |

Dose Calculator Used? ☐ Yes ☐ No If No, why was it not used

IgG level/Platelet count/other test results relevant to patient condition:
Result: Date: (YYYY-MM-DD)

**Clinical indication for use:** **Refer to Ontario IG Management Utilization Guidelines for additional indications where IG may be appropriate.**

| Specialty | |
|---|---|
| Hematology | ☐ Fetal/Neonatal Alloimmune Thrombocytopenia (F/NAIT) |
| | ☐ Hemolytic Disease of the Fetus and Newborn (HDFN) |
| | ☐ Immune Thrombocytopenia (ITP) ☐ Adult ☐ Pediatric |
| | ☐ Post-transfusion Purpura |
| Dermatology | ☐ Pemphigus Vulgaris (PV) and Variants |
| Rheumatology: Pediatric | ☐ Juvenile Idiopathic Inflammatory Myopathy (J-IIM) (previously Juvenile Dermatomyositis) |
| | ☐ Kawasaki Disease (KD) |
| Rheumatology: Adult | ☐ Idiopathic Inflammatory Myopathy (IIM) Includes Dermatomyositis and Polymyositis |
| Immunology | ☐ Primary Immune Deficiency (PID) |
| | ☐ Secondary Immune Deficiency (SID) |
| | ☐ Hematopoietic Stem Cell Transplant in primary immunodeficiencies |
| Solid Organ Transplant | ☐ Kidney transplant from living donor to whom the patient is sensitized |
| | ☐ Pre-transplant (Heart) |
| | ☐ Peri-transplant (heart, lung, kidney, pancreas) |
| | ☐ Post-transplant |
| Infectious Disease | ☐ Invasive Group A streptococcal fasciitis with associated toxic shock |
| | ☐ Staphylococcal Toxic Shock |
| ***OTHER (requires approval)** | ID1-MPEP and/or Measles, post-exposure prophylaxis |

For Transfusion Medicine Use Only

Ontario

# MOHLTC IG Request Form

## For Neurology Use Only

| | |
|---|---|
| Patient Name: | Doe, John |
| Patient Hospital/Medical Record#: | 654321 |
| Patient DOB (YYYY-MM-DD): | |
| Gender M/F: | Male |
| Location: | |
| Ontario Health Insurance#: | |

ALL FIELDS BELOW ARE MANDATORY

### SECTION A: Physician & Hospital Information

| | | |
|---|---|---|
| Date of Request (YYYY-MM-DD) | Date Required (YYYY-MM-DD) | Hospital Transfusion Service (HTS) Fax Number |
| Name of Ordering Physician | Physician's Contact Phone Number | Physician's Email |
| Is the patient being seen by a Neurologist/ Neuromuscular Specialist? ☐ Yes ☐ No | Is the request for a hospital inpatient? ☐ Yes ☐ No | Hospital where patient will receive IG |

### SECTION B: Request Type

| | |
|---|---|
| ☑ Initial Request: Maximum 6 month approval | ☐ Renewal Request: A reassessment should be done to confirm IG treatment continues to be effective and that minimum effective dose is being applied. Maximum 12 month approval. |

### SECTION C: Clinical Indication

**Refer to Ontario IG Management Utilization Guidelines for additional indications where IG may be appropriate**

| Approved Condition | Guidelines for INITIAL Request | Guidelines for RENEWAL Request |
|---|---|---|
| ☐ Guillain–Barré Syndrome (GBS) including Miller Fisher Syndrome and other variants | • IG recommended for Grade 3 severity (able to walk with aid) or greater; or less than Grade 3 severity that are progressing.<br>• IG should be given within 2 weeks of symptom onset.<br>• Adult: Total Dose of 2 g/kg divided over 2 to 5 days.<br>• Pediatric: Total Dose of 2 g/kg divided over 2 days. | • IG treatment for GBS is typically one-time/in the acute setting.<br>• Re-treatment for patients who do not respond may be considered. Repeat treatment with IVIG at 2g/kg divided over 2-5 days. |
| ☐ Myasthenia Gravis (MG) | • IG is recommended as first-line treatment in moderate-severe MG or in myasthenic crisis.<br>• Induction Dose: 2g/kg divided over 2-5 days.<br>• Initial requests may be made for induction plus two maintenance doses; fill out Section D accordingly. | • IG in combinations with immunosuppressive therapy can be considered in refractory cases. If additional IG is required, dose should be adjusted depending upon response and titrated to the minimum effective dose.<br>• Maintenance Dose: 1g/kg |
| ☐ Chronic Inflammatory Demyelinating Polyneuropathy (CIDP) | • IG is recommended as first-line therapy in CIDP.<br>• Induction Dose: 2 g/kg divided over 2 to 5 days.<br>• All patients receiving IG for chronic treatment of CIDP should be followed by a neuromuscular specialist. | • Immunosuppressive therapy in combination with IG can be considered in refractory cases. Continued use should be based on objective measures of sustained effectiveness. Aim for minimum effective dose.<br>• Maintenance Dose: 1g/kg every 3 weeks. |
| ☐ Multifocal Motor Neuropathy (MMN) | • IG is recommended as first-line treatment for MMN.<br>• Induction Dose: 2g/kg divided over 2-5 days. | • Maintenance Dose: Tailor to the lowest dose that maintains clinical efficacy, usually 1g/kg or less per treatment course. Some patients may require higher doses for efficacy, up to 2g/kg every 4 weeks. |

Other (please specify the diagnosis): N12-SSN and/or Sjögren Syndrome associated neuropathy

These requests will require screening by Transfusion Service. Please include information regarding treatment to date and documentation to support IG treatment for an unapproved indication.

Has the patient used other therapies to treat this condition? ☐ Yes, specify other treatments below ☐ No

| Treatment | Dose (if applicable) | Duration of treatment | What was the outcome? |
|---|---|---|---|
| | | | ☐ No response ☐ Contraindications ☐ Intolerance |
| | | | ☐ No response ☐ Contraindications ☐ Intolerance |

Other Comments: (include notes regarding response to IG therapy)

### SECTION D: Dosage Information

**(Verification of dose using Dose Calculator tool is recommended. Refer to http://ivig.transfusionontario.org/dose/**

☑ Intravenous IG (IVIG) ☐ Subcutaneous IG (SCIG)

Patient Weight: 90 kg Patient Height: 180 cm BMI: **Dose must be adjusted for BMI greater than or equal to 30**

Induction/One-time dose 2.0 g/kg = Total dose of 160 g; divided over 2 days

Maintenance dose g/kg = Total dose of g; divided over days; every weeks; Duration: months

Dose Calculator Used? ■ Yes ☐ No If No, why was it not used?

# Dermatology Indications

In instances when longer term or repeat treatment is required, continued use of IG should be based on objective measures of effectiveness established at the onset of treatment. These measures should be assessed no later than 6 months after initiation of long-term treatment and at least annually thereafter. If clinical effectiveness has not been achieved or sustained, IG should be discontinued.

## Recommended Indications in which IG can be used

| Order Number | Medical Condition | Recommendations | Dose/Frequency of Administration |
|---|---|---|---|
| **D1-ABD** | **Autoimmune blistering diseases** [2,3,39,40,41]<br>Including but not limited to:<br>• bullous pemphigoid<br>• epidermolysis bullosa acquisita<br>• IgA pemphigus<br>• linear IgA disease and chronic bullous disease of childhood<br>• mucous membrane pemphigoid / cicatricial pemphigoid<br>• paraneoplastic autoimmune multiorgan syndrome<br>• pemphigoid / herpes gestationis<br>• pemphigus foliaceus | IG is recommended for all severe forms of autoimmune blistering diseases when other therapies are ineffective or contraindicated. It is not generally recommended as monotherapy, but this may be justified in isolated cases when other therapies are ineffective or contraindicated.<br>The results are particularly good in pemphigus vulgaris, pemphigus foliaceus, mucous membrane pemphigoid, and epidermolysis bullosa acquisita. However, IG may also be indicated in severe forms of bullous pemphigoid, IgA pemphigus, pemphigus herpetiformis, pemphigoid/herpes gestationis, linear IgA disease and chronic bullous disease of childhood, and paraneoplastic autoimmune multiorgan syndrome.<br>**Qualifying Criteria**<br>Diagnosis should be made by an appropriate specialist, such as a dermatologist, immunologist, ophthalmologist, otolaryngologist, or oral pathologist. Diagnosis should be confirmed by both routine pathology and appropriate direct or | 2 g/kg adjusted body weight divided over 2 to 5 days.<br>IVIG should be administered every 4 weeks initially, usually in addition to conventional immunosuppressive therapy. Once the patient's condition has stabilized, the interval between infusions should be gradually increased to determine whether ongoing treatment is required.<br>IVIG should be administered for 3 to 6 months to assess efficacy. Some patients do not show a definitive sustained response until they have undergone up to 6 treatment cycles. |

| Order Number | Medical Condition | Recommendations | Dose/Frequency of Administration |
|---|---|---|---|
| | • pemphigus herpetiformis<br>• pemphigus vulgaris | indirect immunofluorescence studies, whenever possible. | |
| **D2-PG** | **Pyoderma gangrenosum** [41] | IG may be considered in patients with significant pyoderma gangrenosum, as diagnosed by a dermatologist, when other therapies are ineffective or contraindicated. The diagnostic criteria for pyoderma gangrenosum should be met, and the relevant differential diagnoses (i.e., infections) must be excluded. | **Induction:** 2 g/kg adjusted body weight divided over 2 to 5 days.<br><br>**Maintenance:** 1 to 2 g/kg adjusted body weight divided over 2 days, every 4 weeks for 4 to 6 cycles.<br>If there is no clinical response after 3 to 6 treatment cycles, IVIG should be discontinued. |
| **D3-S** | **Scleromyxedema** [41] | IG may be considered in severe scleromyxedema when other therapies are ineffective or contraindicated.<br><br>**Qualifying Criteria**<br>Diagnosis should be made by an appropriate specialist such as a dermatologist. | 2 g/kg adjusted body weight divided over 2 to 5 days.<br>In the case of severe organ involvement, particularly kidney or heart, the treatment should be administered slowly (i.e., over 5 days).<br><br>IVIG should be administered every 4 weeks initially. If clinical response is good, based on objective measures of effectiveness established at the outset of treatment, the interval between infusions can be gradually increased.<br><br>IVIG should be administered for 6 months to assess efficacy. |

## Not for Routine use

When screening requests for approval, the following information may be taken into account as there is some evidence for IG to be considered as an option.

| Order Number | Medical Condition | Recommendations | Dose/Frequency of Administration |
|---|---|---|---|
| **D4-TEN/SJS** | **Toxic epidermal necrolysis (TEN)/Stevens–Johnson syndrome (SJS)** [3,38,40] | IVIG is an option when other treatments are contraindicated, or when the condition is life-threatening. Early intervention is strongly recommended. | 3 g/kg divided over 3-5 days. |

# Hematology Indications

In instances when longer term or repeat treatment is required, continued use of IG should be based on objective measures of effectiveness established at the onset of treatment. These measures should be assessed no later than 6 months after initiation of treatment and at least annually thereafter. If clinical effectiveness has not been achieved, IG should be discontinued.

## Recommended Indications in which IG can be used

| Order Number | Medical Condition | Recommendations | Dose/Frequency of Administration |
|---|---|---|---|
| **H1-FAIT** | **Fetal/ Neonatal alloimmune thrombocytopenia (F/NAIT)** [1,2,38] | **Antenatal treatment**: IVIG (with or without corticosteroids) is recommended as first line treatment for women with a previously affected infant. | Maternal dose based on the following risk stratification:<br>**Previous fetus with intracranial hemorrhage**: Up to a total of 2 g/kg weekly starting as early as 12-16 weeks gestation .<br>**No previous fetus with intracranial hemorrhage**: Up to 1g/kg weekly, starting as early as 20-26 weeks current gestation |
| **H2-NAIT** | | **Newborn**: IVIG is recommended as an adjunct to provision of platelets for infants with NAIT who have severe thrombocytopenia.<br>Treatment should be administered in consultation with obstetrical medicine and transfusion medicine with expertise in F/NAIT. | **Infant dose:** initial dose of 1 g/kg, reassess following initial dose. |
| **H3-GALD** | **Gestational alloimmune liver disease (GALD)/alloimmune neonatal hemochromatosis** [41] | IVIG is recommended for women with a previously affected pregnancy. | 1 g/kg (capped at 60 g per week) for at-risk mothers at 14 weeks, 16 weeks, and then weekly from 18 weeks' gestation until delivery between 37 and 38 weeks.<br>The dose is based on the mother's adjusted body weight at initial presentation and is continued unchanged throughout pregnancy. |

| Order Number | Medical Condition | Recommendations | Dose/Frequency of Administration |
|---|---|---|---|
| **H4-HDF** | **Hemolytic disease of the fetus (HDF), prevention**<br>(i.e., maternal)<br>41 | IVIG may be considered in severe disease when there are maternal antibodies against fetal antigens and a high risk of early fetal hydrops or death.<br><br>Management should be under the direction of a high-risk obstetrician or maternal-fetal medicine specialist, with assistance from hematology as appropriate. | 1 g/kg adjusted body weight (up to a maximum dose of 100 g) weekly throughout pregnancy. |
| **H5-HDN** | **Hemolytic Disease of the Fetus and Newborn (HDFN)**<br>1,2,3 | IVIG is recommended in infants with HDFN and severe hyperbilirubinemia if total serum bilirubin (TSB) is rising despite intensive phototherapy/hydration, in consultation with high-risk obstetrician or maternal-fetal medicine specialist and transfusion medicine. | 0.5 g/kg over 4 hours. |
| **H6-HIT** | **Heparin-induced thrombocytopenia (HIT)**<br>41 | IVIG may be considered as an option for severe HIT refractory to standard interventions. | Single dose of 1 g/kg **actual** body weight. Dose may be repeated if clinically indicated. |
| **H7-HSCT** | **Hematopoietic stem cell transplant (HSCT), allogeneic, Cytomegalovirus (CMV)-induced pneumonitis**<br>2,3,38, 41<br><br>(See separate Hypogammaglobulinemia, acquired secondary to hematological malignancies) | IG is recommended, in addition to appropriate antiviral chemotherapy, for proven or probable CMV-induced pneumonitis following allogeneic HSCT. | 1 g/kg adjusted body weight once daily for 2 days, with weekly reassessment of IgG level.<br><br>Consider retreatment with IG if needed for hypogammaglobulinemia and ongoing evidence of CMV pneumonitis. |

| Order Number | Medical Condition | Recommendations | Dose/Frequency of Administration |
|---|---|---|---|
| **I2-SID** | **Hypogammaglobulinemia acquired secondary to hematological malignancies.**<br>41<br>Includes but is not limited to:<br>• Chronic lymphocytic leukemia<br>• Lymphoma<br>• Myeloma<br>• Post-hematopoietic stem cell transplant (HSCT)<br>• Recipients of chimeric antigen receptor T-cells (CAR-T) | See separate entry for secondary hypogammaglobulinemia in the Immunology Indications section for recommendations, dose and frequency of administration. | |
| **H8-ITPA** | **Immune thrombocytopenia (ITP) Adult**<br>1,2,3,4 | **Acute ITP with or at risk for severe bleeding:** IVIG is recommended as part of multimodality therapy for patients with ITP, severe thrombocytopenia (platelets less than 30 x $10^9$/L) and severe bleeding.<br>**IVIG may be considered in the following situations:**<br>• ITP in pregnancy: when platelets are less than 30 x $10^9$/L, or in preparation for delivery.<br>• Planned surgery: safe platelet threshold will vary with the nature of the surgery. | **Acute:** 1 g/kg as a single dose. Repeat if platelet count does not respond (i.e., still less than 30 x $10^9$/L).<br>**Chronic:** In consultation with a hematologist, as adjunctive therapy or where other therapies have failed or are not appropriate. Consider 1-2 g/kg.<br>The use of regular IVIG as a treatment for chronic ITP should be considered as exceptional and alternative approaches (e.g., splenectomy, rituximab, thrombopoietin receptor agonists) should be considered. |

| Order Number | Medical Condition | Recommendations | Dose/Frequency of Administration |
|---|---|---|---|
| | | • Treatment of ITP in patients with other concurrent risk factors for bleeding (e.g., concurrent anticoagulant therapy).<br><br>**Chronic ITP:** IVIG may be considered as a possible adjunctive therapy as a steroid-sparing measure. | |
| **H9-ITPP** | **Immune Thrombocytopenia (ITP) Pediatric**<br>1,2,3,4 | **Acute:** Children with no bleeding or mild bleeding only (mild bruising or petechiae) should be managed with observation alone regardless of platelet count.<br><br>For children with moderate to severe mucosal and/or cutaneous bleeding and platelet count less than 30 x $10^9$/L, IVIG can be used.<br><br>**Chronic:** IVIG can be used in chronic ITP for previous responders. | For patients who require treatment, a single dose of IVIG may be considered a front-line treatment (0.8 to 1 g/kg). A second dose can be repeated if there is no clinical response. IVIG will result in a faster increment in platelet count compared with steroids.<br><br>In emergent management, IVIG is recommended as part of multimodal therapy. |
| **H10-NHP** | **Neonatal hemochromatosis, prevention**<br>41 | IVIG is recommended for:<br><br>• Neonates with hemochromatosis confirmed by findings of high iron on biopsy or by MRI demonstration of iron overload; and<br>• Pregnant women who have had a previous pregnancy affected by neonatal hemochromatosis. | **Neonatal:** Maintenance dose of 1 to 2 g/kg following exchange transfusion in the first 7 days and then up to 1 g/kg weekly, as required.<br><br>**Maternal:** Maintenance dose of 1 g/kg adjusted body weight (to a maximum dose of 100 g) weekly from 18 weeks' gestation until delivery. |

| Order Number | Medical Condition | Recommendations | Dose/Frequency of Administration |
|---|---|---|---|
| **H11-NT** | **Neonatal thrombocytopenia secondary to maternal autoimmune disorders** [41] | IVIG is recommended in addition to other therapies, in consultation with a neonatologist and/or a pediatric hematologist. | Single dose of 1 g/kg. Dose may be repeated if clinically indicated. |
| **H12-PTP** | **Post-transfusion purpura (PTP)** [1] | IVIG is recommended as standard first-line therapy for PTP. | Up to 2 g/kg divided over 2 to 5 consecutive days, repeat if necessary; for short term use. |
| **H13-VITT** | **Vaccine induced immune thrombotic thrombocytopenia (VITT) / vaccine induced prothrombotic immune thrombocytopenia (VIPIT)** [41] | IVIG is recommended for suspected or confirmed VITT.<br>The diagnosis must be made by a hematologist. | 2 g/kg **actual** body weight divided over 2 to 5 days. Dose may be repeated if clinically indicated. |

## Not for Routine use

When screening requests for approval, the following information may be taken into account as there is some evidence for IG to be considered as an option.

| Order Number | Medical Condition | Recommendations | Dose/Frequency of Administration |
|---|---|---|---|
| **H14-AH** | **Acquired hemophilia** [1] | Not recommended for routine use.<br>IVIG may be considered one option among adjunctive therapies, such as steroids, in urgent situations.<br>Prescribed only in consultation with specialized hemophilia care centre. | Up to a total of 2 g/kg divided over 2 to 5 consecutive days, for short term use. |

| Order Number | Medical Condition | Recommendations | Dose/Frequency of Administration |
|---|---|---|---|
| **H15-ARCA** | **Acquired red cell aplasia** [1,3] | IVIG is an option for patients with immunologic pure red cell aplasia (PRCA) who have failed other therapies (e.g. prednisone or cyclosporin).<br><br>See separate entry Parvovirus B19 in solid organ transplant recipients. | Up to 2 g/kg divided over 2 to 5 consecutive days for short term use.<br><br>Repeat on relapse. |
| **H16-AvWD** | **Acquired von Willebrand's disease (AvWD)** [1,3] | IVIG should be considered part of multimodal therapy in emergent situations (together with desmopressin and FVIII/VWF concentrates) in patients who have not responded to other treatments.<br><br>Prescribed only in consultation with specialized hemophilia care center. | Initial therapy: Up to 2 g/kg divided over 2 to 5 consecutive days. |
| **H17-AIHA** | **Autoimmune hemolytic anemia (AIHA)** [1,3] | Not recommended for routine use. May be considered one option among adjunctive therapies in urgent situations. | No recommended dose or duration listed; however, expert panel recommends up to 2 g/kg divided over 2 to 5 consecutive days. |
| **H18-AN** | **Autoimmune neutropenia** [1,3] | Not recommended for routine use. May be considered one option among adjunctive therapies in urgent situations. | |
| **H19-HTRSCD** | **Hemolytic transfusion reaction in sickle cell disease (HTRSCD)** [1] | IVIG may be considered among the options for treatment of serious, life-threatening, delayed hemolytic transfusion reactions in SCD patients. | No recommended dose or duration listed; however, expert panel recommends up to 2 g/kg divided over 2 to 5 consecutive days. |
| **H20-VAHS** | **Virus associated hemophagocytic syndrome (VAHS)** [1] | IVIG is not recommended for routine use in the treatment of VAHS. IVIG may be considered among the options for treatment of severe life threatening VAHS. | |

| Order Number | Medical Condition | Recommendations | Dose/Frequency of Administration |
|---|---|---|---|
| **H21-HTR** | **Hemolytic transfusion reaction (HTR)** [1] | IVIG may be considered as an option among supportive therapies for urgent situations in this disorder. | Up to 2 g/kg divided over 2 to 5 consecutive days, short term up to 3 months. |

## Do Not Use

For the following indications, there is insufficient or no evidence to support the use of IG. Alternatives to IG are often available.

| Medical Condition | Recommendations |
|---|---|
| **Hemophagocytic lymphohistiocytosis (HLH) syndrome - Primary HLH** [41] | Immunomodulatory doses of IVIG are not recommended for the treatment of Primary HLH.<br>(see separate entry for virus associated hemophagocytic syndrome VAHS) |
| **Hemolytic uremic syndrome** [41] | IG is not recommended |
| **Hematopoietic stem cell transplant (HSCT), allogeneic, graft-versus-host disease** [41] | IG is not recommended for the specific prevention or treatment of graft-versus-host disease in allogeneic HSCT.<br>(see separate entry for secondary hypogammaglobulinemia) |
| **Hematopoietic stem cell transplant (HSCT), autologous** [41] | IG is not recommended for routine post-transplant care in autologous HSCT.<br>(see separate entry for secondary hypogammaglobulinemia) |

# Immunology Indications

Aim to use the dose that achieves a significant reduction in the number of infections. SCIG and IVIG are equally effective. Continued use of IG should be based on objective measures of effectiveness established at the onset of treatment. These measures should be assessed no later than 6 months after initiation of treatment and at least annually thereafter by a physician with recognized expertise in immunodeficiency disorders.

## Recommended Indications where IG can be used

| Order Number | Medical Condition | Recommendations | Dose/Frequency of Administration |
|---|---|---|---|
| **I1-PID** | **Primary immunodeficiency (PID) disorders.** [2,31,41]<br><br>Including by not limited to:<br>• Common variable immunodeficiency (CVID) and associated disorders<br>• Specific antibody deficiency<br>• IgG subclass deficiency<br>• Combined immunodeficiency | Immunoglobulin replacement is recommended for preventing infection.<br><br>**Note:** This includes bacterial infections as well as select viral, protozoal, and fungal infections, as directed by a physician with recognized expertise in immunodeficiency disorders.<br><br>**Qualifying Criteria**<br>PID diagnosis must be established by a physician with recognized expertise in immunodeficiency disorders. Functional criteria are required to establish diagnosis for the following specific disorders:<br>• Common variable immunodeficiency (CVID) and associated disorders<br>• Specific antibody deficiency<br>• IgG subclass deficiency<br>• Combined immunodeficiency<br><br>Functional criteria at a minimum should include total IgG, IgA, IgM, protein vaccine titres (tetanus, diphtheria, measles, and rubella), and polysaccharide (pneumococcal) titres. | **Maintenance:** 0.4 to 0.6 g/kg adjusted body weight IVIG every 4 weeks or SCIG 0.1 to 0.15 g/kg adjusted body weight weekly, modified to achieve an IgG trough level of at least the lower limit of the age-specific serum IgG reference range, or as needed to achieve clinical effectiveness.<br><br>**Loading:** One additional dose of 0.4 g/kg adjusted body weight may be given in the first month of therapy if the serum IgG level is markedly reduced.<br><br>**Chronic suppurative lung disease:** 0.4 to 0.8 g/kg adjusted body weight IVIG or equivalent SCIG dose may be given if chronic suppurative lung disease is not adequately controlled at an IgG trough level at the lower limit of the age-specific serum IgG reference range.<br><br>**Specific antibody deficiency and IgG subclass deficiency**: IVIG should be titrated based on clinical outcome alone as measurement of IgG trough levels is unhelpful in these conditions.<br><br>**Review Criteria**<br>The following outcome measures should be recorded: |

| Order Number | Medical Condition | Recommendations | Dose/Frequency of Administration |
|---|---|---|---|
| | | | • IgG level within 3 to 6 months; and<br>• number of infections and hospital admissions for infection. |
| **I2-SID** | **Hypogammaglobulinemia, secondary immunodeficiency disorders (SID)**<br>2,31,41<br><br>(See separate entries for Kawasaki disease; for necrotizing fasciitis and toxic shock syndrome (TSS); and for transplant-related immunomodulation (solid organ transplant) | Immunoglobulin replacement is recommended for secondary prevention of recurrent, severe infection due to hypogammaglobulinemia (excluding paraprotein) related to other diseases or medical therapy in patients who have a history of infections. It is not recommended for routine replacement of IG as primary prophylaxis against infections in the setting of an isolated low IgG level without infection.<br><br>**Note:** This includes bacterial infections as well as select viral, protozoal, and fungal infections, as directed by a physician with recognized expertise in immunodeficiency disorders.<br><br>**Qualifying Criteria**<br>The decision to use IG should be made in consultation with a physician with recognized expertise in immunodeficiency disorders. Hypogammaglobulinemia secondary to underlying disease or medical therapy (including HSCT) with all the following:<br><br>• Serum IgG less than the lower limit of the reference range on two separate occasions<br><br>**AND**<br><br>At least one of the following: | **Maintenance:** 0.4 to 0.6 g/kg adjusted body weight IVIG every 4 weeks, or SCIG 0.1 to 0.15 g/kg adjusted body weight weekly, modified to achieve an IgG trough level of at least the lower limit of the age-specific serum IgG reference range, or as needed to achieve clinical effectiveness.<br><br>**Loading:** One additional dose of 0.4 g/kg adjusted body weight may be given in the first month of therapy if the serum IgG level is markedly reduced.<br><br>**Chronic suppurative lung disease:** 0.4 to 0.8 g/kg adjusted body weight IVIG or equivalent SCIG dose may be given if chronic suppurative lung disease is not adequately controlled at an IgG trough level at the lower limit of the age-specific serum IgG reference range.<br><br>**Disseminated enterovirus infection:** One dose of 2 g/kg adjusted body weight (IVIG or SCIG) divided over 2 to 5 days at any stage is permitted (in addition to the maintenance dose).<br><br>**Review Criteria**<br><br>The following outcome measures should be recorded:<br><br>• IgG level within 3 to 6 months; and |

| Order Number | Medical Condition | Recommendations | Dose/Frequency of Administration |
|---|---|---|---|
| | | ○ One invasive or life-threatening infection (e.g., pneumonia, meningitis, sepsis) in the previous year.<br>○ Recurrent, severe infections.<br>○ Clinically active bronchiectasis confirmed by radiology; or<br>○ Assessment by a physician specializing in immunodeficiency indicating a significant antibody defect that would benefit from immunoglobulin replacement. | • number of infections and hospital admissions for infection.<br><br>Cessation of IG treatment may be possible depending on the status of the underlying disease. |
| **I3-HSCTPID** | **Hematopoietic Stem Cell Transplant in primary immunodeficiencies** [3] | IVIG is recommended in PID patients undergoing stem cell transplant. | 0.4 to 0.6 g/kg every 3-4 weeks; requirements may increase and should be based on clinical outcome. |

# Infectious Diseases Indications

## Recommended Indications where IG can be used

| Order Number | Medical Condition | Recommendations | Dose/Frequency of Administration |
|---|---|---|---|
| **IMIG Not ordered via MOH IG form.** | **Hepatitis A, post-exposure prophylaxis (PEP)** [41] | **Intramuscular** IG (IMIG) should be administered within 2 weeks of exposure for select patients. Individuals receiving replacement IG (IV/SC) are considered protected and do not require IMIG if the last dose was received in the 3 weeks before hepatitis A exposure.<br><br>**Qualifying Criteria**<br>One or more of these criteria must be met:<br>• Hepatitis A vaccine is unavailable.<br>• Infants less than 6 months of age.<br>• Individuals with a history of anaphylaxis after previous administration of hepatitis A vaccine and those with proven immediate or anaphylactic hypersensitivity to any component of the hepatitis A vaccine or its container.<br>• Immunocompromised individuals*<br>• Individuals with chronic liver disease*<br>• Susceptible adults aged 60 years or older*<br><br>*Note: These individuals should receive hepatitis A vaccine in addition to IMIG. | Usually 0.1 mL/kg of actual body weight **IMIG** is given as soon as possible after exposure.<br><br>The efficacy of IMIG is unknown if more than 14 days have elapsed since the last exposure. |
| **IMIG not ordered via** | **Measles, post-exposure prophylaxis (PEP)** [41] | IG (IM or IV) is recommended for those with contraindications to active measles immunization, including: | **Patients less than 30kg**: Single dose of **intramuscular** IG 0.5 mL/kg actual body weight. |

| Order Number | Medical Condition | Recommendations | Dose/Frequency of Administration |
|---|---|---|---|
| **MOH form.**<br><br>**ID1-MPEP** | | • susceptible pregnant women<br>• infants aged <6 months; and<br>• immunocompromised patients*.<br><br>Susceptible infants aged 6 to 12 months presenting more than 72 hours after measles exposure can also receive IG PEP.<br><br>*Consult the Public Health Ontario Measles: Post-exposure Prophylaxis for Contacts[46] for more guidance. | **For patients weighing more than 30 kg or who cannot tolerate the intramuscular volume**: IVIG should be provided at a single dose of 0.4 g/kg adjusted body weight (use actual body weight in pregnancy). |
| **ID2-TSS** | **Toxic shock syndrome (TSS)**<br>2,3,15,29,30,41<br><br>Associated with but not limited to:<br>• Invasive group A Streptococcal infections<br>• Staphylococcal infections | IVIG is recommended when evidence of systemic inflammation and end organ hypoperfusion with fever, tachycardia, tachypnea and hypotension. | Single dose of 2 g/kg adjusted body weight or 1 g/kg on day 1 and 0.5 g/kg on days 2 and 3. |
| **ID3-VZV** | **Varicella-zoster virus (VZV), prophylaxis**<br>41<br><br>(see separate entry when VZV immune globulin is available) | **ONLY when VZV immune globulin is unavailable.**<br><br>IVIG is a suitable alternative for varicella-susceptible immunocompromised patients when VZV immune globulin is unavailable within 96 hours after exposure. | Single dose of 0.4 g/kg adjusted body weight, as soon as possible. Ideally the dose should be given within 96 hours after exposure, but administration up to 10 days post-exposure may be helpful. Patients who have received IVIG within the prior 3 weeks are protected. |

## Do Not Use

For the following indications, there is insufficient or no evidence to support the use of IG. Alternatives to IG are often available.

| Medical Condition | Recommendation |
|---|---|
| **Clostridium difficile infection (CDI), recurrent**<br>41<br>(See separate entry for secondary hypogammaglobulinemia) | IVIG is not recommended in the absence of hypogammaglobulinemia |
| **HIV / AIDS**<br>41<br>(See separate entry for secondary hypogammaglobulinemia) | IG is not recommended in the absence of hypogammaglobulinemia. |
| **Measles, post-exposure prophylaxis (PEP)**<br>41<br>(See separate entry for Measles PEP-immunocompromised individuals) | Immunocompetent individuals older than 12 months: IVIG is not recommended. |
| **Sepsis, prophylaxis**<br>41<br>(See separate entry for secondary hypogammaglobulinemia) | IVIG is not recommended for patients of any age in the absence of hypogammaglobulinemia. |
| **Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) / COVID-19**<br>41<br>(See separate entry for multisystem inflammatory syndrome in children (MIS-C)) | IVIG is not recommended. |
| **Varicella-zoster virus (VZV) prophylaxis**<br>41 | **When VZV immune globulin is available:**<br>IVIG is not recommended for varicella-susceptible immunocompromised patients with primary exposure to VZV when VZV immune globulin is available. |

# Neurology Indications

In instances when longer term treatment is required, continued use of IG should be based on objective measures of effectiveness established at the onset of treatment. These measures should be assessed no later than 6 months after initiation of treatment and at least annually thereafter. If clinical effectiveness has not been achieved, IG should be discontinued.

## Recommended Indications where IG can be used

| Order Number | Medical Condition | Recommendations | Dose/Frequency of Administration |
|---|---|---|---|
| **N1-ADEM** | **Acute disseminated encephalomyelitis (ADEM)** [3,5,41] | IVIG is recommended for:<br>• ADEM unresponsive to steroid therapy or where steroids are contraindicated.<br>• Recurrent or multiphasic ADEM unresponsive to steroid therapy or where steroid therapy is contraindicated or has become intolerable.<br>For patients with relapsing ADEM, alternative diagnoses should be considered, including multiple sclerosis (MS), myelin oligodendrocyte glycoprotein antibody disorder (MOGAD), or neuromyelitis optica spectrum disorder (NMOSD), and other therapies may be offered as applicable. | **Induction:** 2 g/kg adjusted body weight divided over 2 to 5 days.<br>**Maintenance** (for recurrent or multiphasic ADEM only): 0.4 to 2 g/kg adjusted body weight every 4 to 6 weeks.<br>Once the patient's condition has stabilized, consider titrating the dose and/or the treatment interval to the lowest dose necessary to maintain clinical effectiveness. |
| **N2-AMAE** | **Autoimmune encephalitis mediated by antibodies (AMAE) targeting cell-surface antigens.** [14,41]<br>Includes but not limited to:<br>• Encephalitis associated with antibodies to: NMDA receptor, VGKC, LGI1, CASPR2, DPPX, | IVIG may be used as an option with expert consultation. | **Induction**: 2 g/kg adjusted body weight divided over 2 to 5 days.<br>**Maintenance**: 0.5 to 2 g/kg adjusted body weight monthly, if necessary. |

| Order Number | Medical Condition | Recommendations | Dose/Frequency of Administration |
|---|---|---|---|
| | AMPA receptor, glycine receptor, or GABA (A or B) receptor.<br>• Highly suspected autoimmune encephalitis<br>• Paraneoplastic encephalitis<br>• Seronegative autoimmune encephalitis<br>• Seronegative limbic encephalitis<br>• Suspected autoimmune limbic encephalitis<br><br>(See separate entry for Rasmussen syndrome) | | |
| **N3-CIDP** | **Chronic Inflammatory Demyelinating Polyneuropathy (CIDP)**<br>2,5,6,7 | IVIG is recommended as the first-line therapy in CIDP.<br><br>Immunosuppressive therapy in combination with IVIG can be considered in refractory cases.<br><br>All patients receiving IVIG for chronic treatment of CIDP should be followed by a neuromuscular specialist. | **Induction dose**: 2 g/kg divided over 2 to 5 days.<br><br>**Maintenance dose**: 1g/kg every 3 weeks.<br><br>Aim for minimum dose to maintain optimal functional status. |

| Order Number | Medical Condition | Recommendations | Dose/Frequency of Administration |
|---|---|---|---|
| **N4-GBS** | **Guillain-Barré Syndrome (GBS) including Miller-Fisher syndrome and other variants** [2,5,8] | IVIG is recommended for symptoms of grade 3 severity (able to walk with aid) or greater; or symptoms less than grade 3 severity that are progressing.<br><br>Treatment should be given within 2 weeks of symptom onset. Re-treatment for patients who do not respond may be considered. | **Adult**: Total dose of 2 g/kg divided over 2 to 5 days.<br><br>**Pediatric**: Total dose of 2 g/kg divided over 2 days.<br><br>Repeat treatment with IVIG at 2 g/kg divided over 2 to 5 days. |
| **N5-LEMS** | **Lambert–Eaton Myasthenic Syndrome (LEMS)** [3,5,41] | IVIG is recommended as an option for treatment. Maintenance therapy with IVIG may be used in patients who show objective evidence of clinical improvement with IVIG therapy but have incomplete response to oral maintenance therapies. | **Induction**: 2 g/kg adjusted body weight divided over 2 to 5 days.<br><br>**Maintenance**: 0.4 to 1 g/kg adjusted body weight, every 2 to 6 weeks. A maximum dose of 2 g/kg may be given in any 4-week period.<br><br>Once the patient's condition has stabilized, consider titrating the dose and/or the treatment interval to the lowest dose necessary to maintain clinical effectiveness. It is preferable to discontinue IVIG in favour of oral immunosuppressants, where possible. |
| **N6-MMN** | **Multifocal Motor Neuropathy (MMN)** [2,5,9]<br><br>(see separate entry for motor neuron disease) | IVIG is recommended as first-line treatment for MMN. | **Initial dose**: 2 g/kg divided over 2 to 5 days.<br><br>**Maintenance dose**: tailored to the lowest dose that maintains clinical efficacy, usually 1g/kg or less per treatment course. Some patients may require higher doses for efficacy, up to 2 g/kg every 4 weeks. |
| **N7-RRMS** | **Multiple Sclerosis (MS) - Relapsing remitting** | IVIG is recommended for short-term therapy in patients with clinically definite relapsing remitting | **Induction**: 1 to 2 g/kg adjusted body weight divided over 1 to 5 days (maximum 1 g/kg/day). |

| Order Number | Medical Condition | Recommendations | Dose/Frequency of Administration |
|---|---|---|---|
| | **multiple sclerosis (RRMS), short-term therapy** [41]<br>(See separate entry for MS-RRMS Long Term) | MS, confirmed by a neurologist, and one of the following indications:<br>• Severe relapse of clinically definite RRMS with no response to high-dose methylprednisolone or where methylprednisolone is contraindicated.<br>• Prevention of relapse of clinically definite RRMS where alternative therapies are inappropriate, unavailable, or contraindicated. | **Maintenance (for indication 2):** 0.4 to 1 g/kg adjusted body weight every 4 to 6 weeks.<br>Once the patient's condition has stabilized, consider titrating the dose and/or the treatment interval to the lowest dose necessary to maintain clinical effectiveness. |
| **N8-MG** | **Myasthenia Gravis (MG)** [2,5,10,11,12,13]<br>(See separate entry for Mild generalized – adult and ocular) | IVIG is recommended as first-line treatment in moderate-severe MG or in myasthenic crisis.<br>IVIG in combinations with immunosuppressive therapy can be considered in refractory cases. | **Induction (before surgery or during myasthenic crisis):** 1 to 2 g/kg adjusted body weight divided over 1 to 5 days (maximum 1 g/kg/day).<br>**Maintenance:** 0.4 to 1 g/kg adjusted body weight every 4 to 6 weeks. |
| **N9-MOGAD** | **Myelin Oligodendrocyte Glycoprotein antibody-associated disorders (MOGAD) – pediatric** [41] | IVIG is recommended as second-line therapy when there is insufficient response to steroids or other standard immunosuppressant therapies. | **Induction:** 1 to 2 g/kg adjusted body weight divided over 1 to 5 days (maximum 1 g/kg/day).<br>**Maintenance:** 1 g/kg adjusted body weight divided over 1 to 3 days (maximum 1 g/kg/day), every 4 weeks |
| **N10-NAIgMP** | **Neuropathy associated with IgM paraproteinemia.** [41]<br>(See separate entry for Axonal neuropathy | **Demyelinating neuropathy associated with IgM paraproteinemia, without anti-MAG antibodies**<br>IVIG is recommended for neuropathy associated with IgM, with clinical and electrophysiological features consistent with CIDP, in the absence of anti-MAG antibodies. | 2 g/kg adjusted body weight divided over 2 to 5 days, every 4 weeks.<br>IVIG should be administered for 3 to 6 months to assess efficacy. Some patients do not show a |

| Order Number | Medical Condition | Recommendations | Dose/Frequency of Administration |
|---|---|---|---|
| | associated with IgM paraproteinemia) | | definitive sustained response until they have undergone up to 6 treatment cycles.<br><br>Once the patient's condition has stabilized, consider titrating the dose and/or the treatment interval to the lowest dose necessary to maintain clinical effectiveness. |
| **N11-OMA** | **Opsoclonus-Myoclonus Ataxia (OMA) – pediatric onset**<br>41 | IVIG is recommended for acute and long-term treatment, in consultation with a neurologist, in addition to other tumour therapies as applicable. | **Induction:** 1 to 2 g/kg adjusted body weight divided over 1 to 5 days (maximum 1 g/kg/day).<br><br>**Maintenance:** 0.4 to 1 g/kg adjusted body weight divided over 1 to 5 days (maximum 1 g/kg/day), every 4 to 6 weeks.<br><br>Once the patient's condition has stabilized, consider titrating the dose and/or the treatment interval to the lowest dose necessary to maintain clinical effectiveness. |
| **N12-SSN** | **Sjögren Syndrome associated neuropathy**<br>41 | IVIG may be considered in severe, functionally disabling peripheral neuropathies associated with Sjögren syndrome or when other immunosuppressive therapies are contraindicated or ineffective. | **Induction:** 1 to 2 g/kg adjusted body weight divided over 1 to 5 days (maximum 1 g/kg/day).<br><br>**Maintenance:** 0.4 to 1 g/kg adjusted body weight divided over 1 to 5 days (maximum 1 g/kg/day), every 4 to 6 weeks.<br><br>Once the patient's condition has stabilized, consider titrating the dose and/or the treatment interval to the lowest dose necessary to maintain clinical effectiveness. |

| Order Number | Medical Condition | Recommendations | Dose/Frequency of Administration |
|---|---|---|---|
| **N13-MWS** | **Stiff Person Syndrome (Moersch–Woltman syndrome)**<br>3,5, 41 | IVIG is recommended for treatment of patients with significant functional impairment, in consultation with a neurologist. | **Induction:** 2 g/kg adjusted body weight divided over 2 to 5 days.<br>**Maintenance:** 1 to 2 g/kg adjusted body weight divided over 1 to 5 days (maximum 1 g/kg/day), every 3 to 6 weeks.<br>Once the patient's condition has stabilized, consider titrating the dose and/or the treatment interval to the lowest dose necessary to maintain clinical effectiveness. |
| **N14-SC** | **Sydenham Chorea**<br>41 | **Short-term therapy**<br>IVIG is reasonable to provide short-term improvement in symptoms for children with moderate to severe Sydenham chorea associated with significant impairment. | Single dose of 2 g/kg adjusted body weight divided over 2 to 5 days. |
| **N15-VN** | **Vasculitic Neuropathy as part of a systemic disorder**<br>41<br>(systemic vasculitis affecting the peripheral nervous system) | IVIG may be used as an option if indicated for the systemic disorder. Systemic vasculitis can affect multiple organ systems and treatment should be guided with input from appropriate specialists. | Dose and frequency of administration should follow the recommendations for the underlying systemic disorder. Refer to the appropriate medical condition. |

## Not for Routine use

When screening requests for approval, the following information may be taken into account as there is some evidence for IG to be considered as an option.

| Order Number | Medical Condition | Recommendations | Dose/Frequency of Administration |
|---|---|---|---|
| **N16-PANDAS** | **Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcal Infections (PANDAS)** [3,5] | IVIG is an option for treatment of patients with PANDAS. Diagnosis of PANDAS requires expert consultation. | Total dose of 2 g/kg divided over 2 days is recommended as a reasonable option. |
| **N17-RE** | **Rasmussen's encephalitis** [3,5] | IVIG is an option as a short-term, temporizing measure for patients with Rasmussen's encephalitis.<br>Not recommended for long-term therapy. | **Adults**: Total dose of 2 g/kg divided over 2 to 5 days.<br>**Pediatric**: Total dose of 2 g/kg divided over 2 days. |

## Do Not Use

When screening requests for approval, the following information may be taken into account as there is some evidence for IG to be considered as an option.

| Medical Condition | Recommendation |
|---|---|
| **Acute Optic Neuritis** [41] | IG is not recommended. |
| **Adrenoleukodystrophy** [41] | |
| **Alzheimer Disease** [41] | |
| **Autism** [41] | |

| Medical Condition | Recommendation |
|---|---|
| **Chronic Fatigue Syndrome (myalgic encephalomyelitis)** [41] | IG is not recommended. |
| **Critical illness polyneuropathy (CIP)** [41] | |
| **Motor Neuron Disease** [41] (See separate entry for multifocal motor neuropathy.) | Recommendation includes but is not limited to:<br>• Amyotrophic lateral sclerosis (ALS)<br>IG is not recommended. |
| **Myasthenia Gravis (MG) Mild / Ocular** [41] (See separate entry for moderate-severe MG or in myasthenic crisis) | Recommendation includes but is not limited to:<br>• Mild generalized – adult<br>• Ocular<br>IG is not recommended. |
| **Multiple Sclerosis (MS)** [41] (See separate entry for MS-RRMS short-term therapy) | Recommendation includes but is not limited to:<br>• Relapsing remitting multiple sclerosis (RRMS), Long-term therapy.<br>• Primary Progressive Multiple Sclerosis, progressive phase of MS without relapse.<br>IG is not recommended. |
| **Narcolepsy / Cataplexy** [41] | IG is not recommended. |
| **Neuropathic Pain** [41] | |
| **Neuropathy associated with IgM paraproteinemia** [41] (See separate entry for Demyelinating neuropathy associated with IgM paraproteinemia, without anti-MAG antibodies) | Recommendation includes but is not limited to:<br>• Axonal neuropathy associated with IgM paraproteinemia.<br>IG is not recommended. |

| Medical Condition | Recommendation |
|---|---|
| **Polyneuropathy, organomegaly, endocrinopathy, monoclonal protein, skin changes (POEMS) syndrome** [41] | IG is not recommended. Treatment should target the underlying hematologic malignancy. |
| **Post-polio syndrome** [41] | IG is not recommended. |

# Rheumatology Indications

In instances when longer term treatment is required, continued use of IG should be based on objective measures of effectiveness established at the onset of treatment. These measures should be assessed no later than 6 months after initiation of treatment (unless specifically indicated) and at least annually thereafter. If clinical effectiveness has not been achieved, IG should be discontinued.

## Recommended Indications where IG can be used

| Order Number | Medical Condition | Recommendations | Dose/Frequency of Administration |
|---|---|---|---|
| **R1-ASC** | **Antiphospholipid syndrome - catastrophic** [41]<br>(See separate entry for antiphospholipid syndrome) | IVIG is recommended for catastrophic antiphospholipid syndrome, characterized by widespread small vessel thrombosis leading to multiorgan failure.<br>**Qualifying Criteria**<br>All the following criteria must be met:<br>• Evidence of rapidly evolving thrombosis involving two or more organs.<br>• Unequivocal laboratory evidence of antiphospholipid antibodies (lupus anticoagulant and/or anticardiolipin antibodies and/or beta 2 glycoprotein I antibodies).<br>• Other causes of thrombotic microangiopathy are considered less likely. | 2 g/kg adjusted body weight divided over 2 to 5 days. A single treatment is usually sufficient.<br>The potential prothrombotic effect of IVIG should be considered in this indication. |
| **R2-AIR** | **Autoimmune retinopathy (AIR)** [41] | Early administration of IVIG is recommended in autoimmune retinopathy for treatment of severe disease threatening eyesight. | **Induction:** 1.5 g/kg adjusted body weight divided over 3 days.<br>**Maintenance:** 0.4 to 1.5 g/kg adjusted body weight in single or divided dose (maximum 1 g/kg/day), monthly.<br>Once the patient's condition has stabilized, consider titrating the dose and/or the treatment |

| Order Number | Medical Condition | Recommendations | Dose/Frequency of Administration |
|---|---|---|---|
| | | | interval to the lowest dose necessary to maintain clinical effectiveness.<br><br>**Review Criteria**<br>Patient response (improvement in visual function or an arrest in the decline of visual function as determined by an ophthalmologist) should be assessed within 3 months of treatment and at least annually thereafter. |
| **R3-EGPA** | **Eosinophilic granulomatosis with polyangiitis (EGPA) (Churg–Strauss disease)**<br>41 | IVIG may be used for patients with nervous system or cardiac disorders who do not respond to standard therapy. | 2 g/kg adjusted body weight divided over 2 to 5 days, every 4 weeks.<br><br>Once the patient's condition has stabilized, consider titrating the dose and/or the treatment interval to the lowest dose necessary to maintain clinical effectiveness. |
| **R4-IIM** | **Idiopathic Inflammatory myopathy (IIM)**<br>Includes:<br>• Dermatomyositis<br>• Polymyositis<br>2,5,15,23,24,26,25<br><br>*Does not include Inclusion Body Myositis (IBM) | IVIG is indicated in patients with IIM as adjunctive therapy to corticosteroids and/or a steroid sparing agent in patients with IIM who have failed 1st line therapy or as clinically indicated in the management of severe disease .<br><br>*IVIG benefit has not been established in IBM.<br><br>1st line: Corticosteroids and Methotrexate and/or Azathioprine<br><br>2nd line: IVIG<br><br>3rd line: Cyclosporine or cellcept. | Maximum dose is 2 g/kg to be given over 2 days initially monthly for 3-6 months and if effective to be continued at decreasing frequency (determine minimum effective dose) over approximately 2 years.<br><br>Survival of patients with IIM has been shown to be substantially improved in patients given IVIG |

| Order Number | Medical Condition | Recommendations | Dose/Frequency of Administration |
|---|---|---|---|
| **R5-JIIM** | **Juvenile Idiopathic Inflammatory Myopathy (JIIM)**<br>(Previously Juvenile Dermatomyositis)<br>2,5,15,16,17 | IVIG is recommended when there is a lack of response or contraindication to corticosteroids, Methotrexate and/or Azathioprine therapy .<br>1st line: Corticosteroids and Methotrexate<br>2nd line: IVIG<br>3rd line: Cyclosporine | **Initial:** Total dose of 2 g/kg divided over 2 days.<br>**Maintenance dose:** A systematic approach should be taken to determine the minimum effective dose.<br>Maximum dose should not exceed 2 g/kg |
| **R6-KD** | **Kawasaki Disease**<br>2,18,19,20,21,22 | IVIG is recommended when Kawasaki diagnosis confirmed. | 2 g/kg for 1 day (second dose can be given for patients who fail to respond to initial dose). |
| **R7-MAS** | **Macrophage activation syndrome (MAS)**<br>41 | IVIG may be used in addition to other therapies. | Single dose of 2 g/kg adjusted body weight. |
| **R8-MISC** | **Multisystem inflammatory syndrome in children (MIS-C) associated with SARS-CoV-2/COVID-19 infection**<br>41 | IVIG is recommended for all patients who require hospitalization. | 2 g/kg adjusted body weight over 12 hours unless cardiac function and/or fluid status necessitates dividing the dose over 2 days.<br>A single treatment is usually sufficient.<br>One additional treatment may be given in exceptional circumstances in refractory MIS-C with appropriate expert consultation. |

## Do Not Use

For the following indications, there is insufficient or no evidence to support the use of IG. Alternatives to IG are often available.

| Medical Condition | Recommendations |
|---|---|
| **Antiphospholipid syndrome (other than catastrophic)** [41] | IG is not recommended.<br>(see separate entry for Catastrophic Antiphospholipid Syndrome) |
| **Behçet disease** [41] | IG is not recommended |
| **Inclusion body myositis (IBM)** [41] | IG is not recommended.<br>(see separate entries for Juvenile Idiopathic Inflammatory Myopathy and Idiopathic Inflammatory Myopathy (IIM)) |
| **Rheumatoid arthritis** [12] | IG is not recommended. |

# Transplant Indications

In instances when longer term treatment is required, continued use of IG should be based on objective measures of effectiveness established at the onset of treatment. These measures should be assessed no later than 6 months after initiation of treatment (unless specifically indicated) and at least annually thereafter. If clinical effectiveness has not been achieved, IG should be discontinued.

## Recommended Indications where IG can be used

| Order Number | Medical Condition | Recommendations | Dose/Frequency of Administration |
|---|---|---|---|
| **T1-CARV/ URTI** | **Community-acquired respiratory virus (CARV), upper respiratory tract infection (URTI) in high-risk patients** [41] | **Proven respiratory syncytial virus (RSV) in high-risk patients***<br><br>IG may be used to prevent progression to lower respiratory tract infection.<br><br>*Note The term "high-risk patient" signifies:<br><br>• Lung transplant recipients.<br>• Allogeneic HSCT recipients with at least one of the following:<br>  ○ Hypogammaglobulinemia, defined as an IgG level less than the lower limit of normal or <4 g/L<br>  ○ Absolute lymphocyte count <0.5 x $10^9$/L<br>  ○ CD4 T-cell count <0.2 x $10^9$/L<br>  ○ 6 months post alemtuzumab, anti-thymocyte globulin, rituximab therapy, or other B-cell depleting therapy (e.g., blinatumomab)<br>  ○ Steroid refractory or steroid dependent acute graft-versus-host disease<br>  ○ Moderate to severe chronic graft-versus-host disease; or | Single dose of 1 g/kg adjusted body weight, with IgG level reassessed weekly.<br><br>Consider retreatment if IgG level remains below the lower limit of normal. |

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| | | ○ Prolonged use of systemic corticosteroids at a dose of at least 0.5 mg prednisone equivalents/kg/day for at least 1 week.<br>• Recipients of chimeric antigen receptor T-cells (CAR-T) for relapsed or refractory acute leukemia, multiple myeloma, chronic lymphocytic leukemia, or non-Hodgkin lymphoma (or other indication) with ongoing evidence of B-cell lymphopenia who are not receiving regular immunoglobulin replacement. | |
| **T2-PvB19** | **Parvovirus B19 in solid organ transplant recipients**<br>41 | IG may be used in patients with established parvovirus B19 infection. Retreatment may be considered for non-response or symptomatic relapse.<br><br>(see separate entry for prevention of recurrence of parvovirus B19 infection) | 2 g/kg adjusted body weight divided over 5 days.<br><br>**Note:** Shorter courses may be considered, but daily doses of more than 1 g/kg are associated with nephrotoxicity. |
| **T3-ABMR** | **Solid organ transplant, active antibody-mediated rejection (ABMR) prevention and management**<br>41 | **Pre-transplant:** IVIG is recommended when an antibody or antibodies might preclude transplantation (e.g., donor specific anti-human leukocyte antigen antibody or anti-blood group antibody). IG may be continued for up to 3 months post-transplant.<br><br>**Post-transplant:** IG may be used to treat active ABMR[47] when other therapies are ineffective. | **IVIG with plasma exchange:** 0.1 g/kg adjusted body weight after each plasma exchange, to a maximum total dose of 2 g/kg.<br><br>**IVIG alone:** 2 g/kg adjusted body weight divided over 2 to 5 days.<br><br>When IVIG is used alone, further doses may be indicated every 4 weeks for a further three cycles, depending on clinical response or biopsy findings.<br><br>Thereafter, additional treatment cycles (often together with other treatment modalities) may be indicated, but only when biopsy findings and/or clinical response demonstrate ongoing/recurrent active ABMR or chronic active ABMR. Demonstration of ongoing/recurrent active ABMR |

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| | | | or chronic active ABMR should precede each treatment cycle.<br><br>**Note:** Some sucrose-stabilized formulations of IVIG have shown nephrotoxicity and are best avoided in patients with pre-existing kidney impairment. Some nephrologists recommend that IVIG infusions be capped at 140 g/day to reduce the risk of nephrotoxicity. |
| **T4-DGR** | **Solid organ transplant, ongoing desensitization, prevention or treatment of graft rejection**<br>41 | IG may be used in:<br>• Highly sensitized patients awaiting transplantation.<br>• Transplant recipients to prevent or treat graft rejection when conventional immunosuppressive therapy is contraindicated or<br>• ABO incompatible transplant. | 0.1 to 0.5 g/kg adjusted body weight, which may be given in divided doses up to a total maximum dose of 2 g/kg adjusted body weight in a 4-week period.<br><br>**Review Criteria**.<br>Therapy should be reviewed, and cessation considered if an improvement has not been achieved after two consecutive treatment cycles. |

## Do Not Use

For the following indications, there is insufficient or no evidence to support the use of IG. Alternatives to IG are often available.

| Medical Condition | Recommendations |
|---|---|
| **Community-acquired respiratory virus (CARV), upper respiratory tract infection (URTI)**<br>41 | All other patient groups, including solid organ transplant recipients (other than lung)<br><br>IG is not recommended<br><br>(see separate entry Community-acquired respiratory virus (CARV), upper respiratory tract infection (URTI) high risk patients) |

| Medical Condition | Recommendations |
|---|---|
| **Cytomegalovirus (CMV) infection, prevention** [41] | Recommendation includes:<br>• Hematopoietic stem cell transplant (HSCT)<br>• Solid organ transplant<br>IG is not recommended for prophylaxis or pre-emptive treatment. |
| **Epstein-Barr virus (EBV)-associated post-transplant lymphoproliferative disorders (PTLD)** [41] | Recommendation includes:<br>• Hematopoietic stem cell transplant (HSCT)<br>• Solid organ transplant<br>IG is not recommended for prophylaxis or treatment. |
| **Parvovirus B19 in solid organ transplant recipients** [41] | IG is not recommended to prevent recurrence of parvovirus B19 infection.<br>(see separate entry for established parvovirus B19 infection) |
| **Pulmonary graft-versus-host disease** [41] | IG is not recommended for the specific treatment of pulmonary graft-versus-host disease.<br>(see separate entry for secondary hypogammaglobulinemia) |

# Other Indications

In instances when longer term treatment is required, continued use of IG should be based on objective measures of effectiveness established at the onset of treatment. These measures should be assessed no later than 6 months after initiation of treatment (unless specifically indicated) and at least annually thereafter. If clinical effectiveness has not been achieved, IG should be discontinued.

## Recommended Indications where IG can be used

| Order Number | Medical Condition | Recommendations | Dose/Frequency of Administration |
|---|---|---|---|
| **O1-SCLS** | **Systemic capillary leak syndrome (SCLS)** [41] | IG may be used for prevention of recurrent, life-threatening episodes, in addition to other therapies. | 1 to 2 g/kg adjusted body weight divided over 2 to 5 days (maximum 1 g/kg/day), every 4 weeks.<br><br>Once the patient's condition has stabilized, consider titrating the dose and/or the treatment interval to the lowest dose necessary to maintain clinical effectiveness. |

## Evolving Information

The following medical conditions have been brought forward as evolving, showing some benefit in limited explicit circumstances whereas historically recommendations have been Do Not Use. The decision to use IG or not use IG in this setting, should be on a case-by-case basis utilizing the following criteria and dosing recommendations adopted with permission from Quebec INESSS[50] and McGill University Health Centre - Reproductive Centre. If clinical effectiveness has not been achieved, IG should be discontinued.

| Order Number | Medical Condition | Recommendations | Dose/Frequency of Administration[43] |
|---|---|---|---|
| **O2-RPL**<br><br>**O3-RIF** | **Fertility Treatment** [43,44,48,49]<br><br>Including:<br>• Recurrent pregnancy loss (RPL)<br>• Recurrent implantation failure (RIF) | Ontario acknowledges there is some evidence to support the use of IG in the very specific setting of Recurrent Pregnancy Loss and Recurrent Implantation Failure. The McGill criteria, as indicated below, must be met to be considered for IVIG or SCIG. The request must be received from a | **RECURRENT PREGNANCY LOSS** -<br>The dose can be adjusted or repeated according to the individual clinical response.<br><br>**Before pregnancy:**<br><br>IVIG: 0.4-0.6 g/kg every 3 months for a maximum of 6 months |

| Order Number | Medical Condition | Recommendations | Dose/Frequency of Administration[43] |
|---|---|---|---|
| | | Reproductive Specialty Clinic/Physician for approval consideration.<br><br>**Qualifying Criteria**<br>Patients must fulfill **ALL** criteria in 1 and 4 with either medical condition in 2 or 3.<br><br>1. General **(all conditions must be met)**<br>○ BMI < 35<br>○ Age: < 42 (or ≤45 if using oocyte donation)<br>○ Non-smoking<br>○ Absence of contraindication to IVIG treatment<br><br>**AND**<br><br>2. Recurrent pregnancy loss **(must meet one criteria)**<br>○ >3 consecutive pregnancy losses before 24 weeks AND ≥ 1 pregnancy failure with immunomodulation (low molecular weight heparin (LMWH), steroids, hydroxychloroquine) **or**<br>○ 3 consecutive pregnancy losses with contraindication to immunomodulation<br><br>**OR**<br><br>3. Recurrent implantation failure **(must meet one criteria)**<br>○ 3 consecutive failed embryo transfers with good quality embryos (with ≥ 2 good quality euploid blastocysts) **or**<br>○ Failed at least one embryo transfer with immunomodulation treatment (LMWH, | SCIG: 0.1-0.2g/kg a week for a maximum of 6 months<br><br>**During pregnancy:**<br><br>IVIG: 0.4-0.6 g/kg a month up to the 20th week of pregnancy<br><br>SCIG: 0.1-0.2g/kg a week up to 20th week of pregnancy<br><br>**Review Criteria:**<br><br>• RPL - every 3 months<br>• In pregnancy- at regular pregnancy follow ups<br><br>If no benefit is observed in terms of the patient's clinical status during the medical reassessment, the therapy should be adjusted or discontinued.<br><br>**REPEATED IMPLANTATION FAILURE**<br><br>IVIG: 0.4-0.6 g/kg once, 3 to 5 days before the embryo transfer<br><br>No SCIG recommendations<br><br>**Process to obtain IG for RPL and RIF**<br><br>Reproductive clinic/prescriber contacts local Transfusion Medicine (TM) physician regarding approval, submitting McGill qualifying criteria to TM physician. If the TM physician approves, reproductive clinic faxes the MOH IG or SCIG request form using "OTHER" indication including order number, date and name of TM physician |

| Order Number | Medical Condition | Recommendations | Dose/Frequency of Administration[43] |
|---|---|---|---|
| | | steroids, Matrice Lab® recommendations) or contra-indications to corticosteroid therapy<br><br>**AND**<br><br>4. Negative work-up for usual causes **(all conditions must be met)**<br>○ Normal Uterine cavity<br>○ Normal parental karyotype (when applicable)<br>○ No coagulopathy **or** previous failure with coagulopathy appropriate treatment<br>○ No endocrinopathy **or** previous failure with endocrinopathy appropriate treatment | approval, to local TM laboratory and can contact patient support program if SCIG to be used. |

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## References

1. Anderson D, Ali K, Blanchette V, Brouwers M, Couban S, Radmoor P, Huebsch L, Hume H, McLeod A, Meyer R, Moltzan C. Guidelines on the use of intravenous immune globulin for hematologic conditions. Transfusion medicine reviews. 2007 Apr 1;21:S9-56.
2. IVIG Utilization Management Guidelines: British Columbia Provincial Blood Coordinating Office, August 2011.
3. United Kingdom Department of Health, Clinical Guidelines for IVIG Use, 2nd edition update, November 2011.
4. Neunert C, Lim W, Crowther M, Cohen A, Solberg Jr L, Crowther MA. The American Society of Hematology 2011 evidence-based practice guideline for immune thrombocytopenia. Blood, The Journal of the American Society of Hematology. 2011 Apr 21;117(16):4190-4207.
5. Feasby T, Banwell B, Benstead T, Bril V, Brouwers M, Freedman M, Hahn A, Hume H, Freedman J, Pi D, Wadsworth L. Guidelines on the use of intravenous immune globulin for neurologic conditions. Transfusion medicine reviews. 2007 Apr 1;21:S57-107.
6. Hughes RA, Donofrio P, Bril V, Dalakas MC, Deng C, Hanna K, Hartung HP, Latov N, Merkies IS, van Doorn PA. Intravenous immune globulin (10% caprylate-chromatography purified) for the treatment of chronic inflammatory demyelinating polyradiculoneuropathy (ICE study): a randomized placebo-controlled trial. The Lancet Neurology. 2008 Feb 1;7(2):136-144.
7. Merkies IS, Bril V, Dalakas MC, Deng C, Donofrio P, Hanna K, Hartung HP, Hughes RA, Latov N, Van Doorn PA. Health-related quality-of-life improvements in CIDP with immune globulin IV 10% The ICE Study. Neurology. 2009 Apr 14;72(15):1337-1344.
8. Kuitwaard K, de Gelder J, Tio-Gillen AP, Hop WC, van Gelder T, van Toorenenbergen AW, van Doorn PA, Jacobs BC. Pharmacokinetics of intravenous immunoglobulin and outcome in Guillain-Barré syndrome. Annals of Neurology: Official Journal of the American Neurological Association and the Child Neurology Society. 2009 Nov;66(5):597-603.
9. Baumann A, Hess CW, Sturzenegger M. IVIg dose increase in multifocal motor neuropathy: a prospective six-month follow-up. Journal of neurology. 2009 Apr;256:608-614.
10. Zinman L, Ng E, Bril V. IV immunoglobulin in patients with myasthenia gravis: a randomized controlled trial. Neurology. 2007 Mar 13;68(11):837-841.
11. Gajdos P, Tranchant C, Clair B, Bolgert F, Eymard B, Stojkovic T, Attarian S, Chevret S, Myasthenia Gravis Clinical Study Group. Treatment of myasthenia gravis exacerbation with intravenous immunoglobulin: a randomized double-blind clinical trial. Archives of neurology. 2005 Nov 1;62(11):1689-1693.

12. Barth D, Nabavi Nouri M, Ng E, Nwe P, Bril V. Comparison of IVIg and PLEX in patients with myasthenia gravis. Neurology. 2011 Jun 7;76(23):2017-23.
13. Barnett C, Wilson G, Barth D, Katzberg HD, Bril V. Changes in quality-of-life scores with intravenous immunoglobulin or plasmapheresis in patients with myasthenia gravis. Journal of Neurology, Neurosurgery & Psychiatry. 2013 Jan 1;84(1):94-97.
14. Titulaer MJ, McCracken L, Gabilondo I, Armangué T, Glaser C, Iizuka T, Honig LS, Benseler SM, Kawachi I, Martinez-Hernandez E, Aguilar E. Treatment and prognostic factors for long-term outcome in patients with anti-NMDA receptor encephalitis: an observational cohort study. The Lancet Neurology. 2013 Feb 1;12(2):157-165.
15. Callum J et al. Bloody Easy 5.1: Blood Transfusions, Blood Alternatives and Transfusion Reactions: A Guide to Transfusion Medicine, 5th Edition. 2023; pages 106-121
16. Lam CG, Manlhiot C, Pullenayegum EM, Feldman BM. Efficacy of intravenous Ig therapy in juvenile dermatomyositis. Annals of the rheumatic diseases. 2011 Dec 1;70(12):2089-2094.
17. Stringer E, Bohnsack J, Bowyer SL, Griffin TA, Huber AM, Lang B, Lindsley CB, Ota S, Pilkington C, Reed AM, Scuccimarri R. Treatment approaches to juvenile dermatomyositis (JDM) across North America: the childhood arthritis and rheumatology research alliance (CARRA) JDM treatment survey. The Journal of rheumatology. 2010 Sep 1;37(9):1953-1961.
18. Newburger JW, Takahashi M, Burns JC, Beiser AS, Chung KJ, Duffy CE, Glode MP, Mason WH, Reddy V, Sanders SP, Shulman ST. The treatment of Kawasaki syndrome with intravenous gamma globulin. New England Journal of Medicine. 1986 Aug 7;315(6):341-347.
19. Barron KS, Murphy Jr DJ, Silverman ED, Ruttenberg HD, Wright GB, Franklin W, Goldberg SJ, Higashino SM, Cox DG, Lee M. Treatment of Kawasaki syndrome: a comparison of two dosage regimens of intravenously administered immune globulin. The Journal of Pediatrics. 1990 Oct 1;117(4):638-644.
20. Newburger JW, Takahashi M, Beiser AS, Burns JC, Bastian J, Chung KJ, Colan SD, Duffy CE, Fulton DR, Glode MP, Mason WH. A single intravenous infusion of gamma globulin as compared with four infusions in the treatment of acute Kawasaki syndrome. New England journal of medicine. 1991 Jun 6;324(23):1633-1639.
21. Terai M, Shulman ST. Prevalence of coronary artery abnormalities in Kawasaki disease is highly dependent on gamma globulin dose but independent of salicylate dose. The Journal of pediatrics. 1997 Dec 1;131(6):888-93.
22. Shulman ST. Recommendations for intravenous immunoglobulin therapy of Kawasaki disease. The Pediatric infectious disease journal. 1992;11(11):985–6
23. Tansley S, Gunawardena H. The evolving spectrum of polymyositis and dermatomyositis—moving towards clinicoserological syndromes: a critical review. Clinical reviews in allergy & immunology. 2014 Dec;47:264-73.
24. van der Meulen MF, Bronner IM, Hoogendijk JE, Burger H, van Venrooij WJ, Voskuyl AE, Dinant HJ, Linssen WH, Wokke JH, de Visser M. Polymyositis: an overdiagnosed entity. Neurology. 2003 Aug 12;61(3):316-321.
25. Christopher-Stine L. Neurologists are from Mars. Rheumatologists are from Venus: differences in approach to classifying the idiopathic inflammatory myopathies. Current opinion in rheumatology. 2010 Nov 1;22(6):623-626.
26. Dalakas MC, Illa I, Dambrosia JM, Soueidan SA, Stein DP, Otero C, Dinsmore ST, McCrosky S. A controlled trial of high-dose intravenous immune globulin infusions as treatment for dermatomyositis. New England Journal of Medicine. 1993 Dec 30;329(27):1993-2000.
27. Gambini S, Marinangeli L, Morariu R, Gabrielli A, Danieli MG. FRI0503 Influence of Treatment on the Outcome of Polymyositis and Dermatomyositis. Annals of the Rheumatic Diseases. 2014 Jun 1;73(Suppl 2):569-569.
28. Kampylafka EI, Kosmidis ML, Panagiotakos DB, Dalakas M, Moutsopoulos HM, Tzioufas AG. The effect of intravenous immunoglobulin (IVIG) treatment on patients with dermatomyositis: a 4-year follow-up study. Clinical and Experimental Rheumatology-Incl Supplements. 2012 May 1;30(3):397.

29. Kaul R, McGeer A, Norrby-Teglund A, Kotb M, Schwartz B, O'Rourke K, Talbot J, Low DE, Canadian Streptococcal Study Group. Intravenous immunoglobulin therapy for streptococcal toxic shock syndrome—a comparative observational study. Clinical infectious diseases. 1999 Apr 1;28(4):800-807.
30. Darenberg J, Ihendyane N, Sjölin J, Aufwerber E, Haidl S, Follin P, Andersson J, Norrby-Teglund A, Streptlg Study Group. Intravenous immunoglobulin G therapy in streptococcal toxic shock syndrome: a European randomized, double-blind, placebo-controlled trial. Clinical infectious diseases. 2003 Aug 1;37(3):333-340.
31. Shehata N, Palda V, Bowen T, Haddad E, Issekutz TB, Mazer B, Schellenberg R, Warrington R, Easton D, Anderson D, Hume H. The use of immunoglobulin therapy for patients with primary immune deficiency: an evidence-based practice guideline. Transfusion medicine reviews. 2010 Jan 1;24:S28-50.
32. Shehata N, Palda VA, Meyer RM, Blydt-Hansen TD, Campbell P, Cardella C, Martin S, Nickerson P, Peltekian K, Ross H, Waddell TK. The use of immunoglobulin therapy for patients undergoing solid organ transplantation: an evidence-based practice guideline. Transfusion medicine reviews. 2010 Jan 1;24:S7-27.
33. Peraldi MN, Akposso K, Haymann JP, Flahaut A, Marlin C, Rondeau E, Sraer JD. Long-term benefit of intravenous immunoglobulins in cadaveric kidney retransplantation. Transplantation. 1996 Dec 15;62(11):1670-1673.
34. Casadei DH, Rial MD, Opelz G, Golberg JC, Argento JA, Greco G, Guardia OE, Haas E, Raimondi EH. A randomized and prospective study comparing treatment with high-dose intravenous immunoglobulin with monoclonal antibodies for rescue of kidney grafts with steroid-resistant rejection. Transplantation. 2001 Jan 15;71(1):53-58.
35. Staak A, Renner F, Suesal C, Dietrich H, Rainer L, Kamali-Ernst S, Ernst W, Padberg W, Opelz G, Weimer R. Immunoglobulin induction therapy in renal transplant recipients: effects on immunoglobulin and regulatory antibody levels. In Transplantation proceedings 2006 Dec 1 (Vol. 38, No. 10, pp. 3483-3485). Elsevier.
36. Jordan SC, Tyan D, Stablein D, McIntosh M, Rose S, Vo A, Toyoda M, Davis C, Shapiro R, Adey D, Milliner D. Evaluation of intravenous immunoglobulin as an agent to lower allosensitization and improve transplantation in highly sensitized adult patients with end-stage renal disease: report of the NIH IG02 trial. Journal of the American Society of Nephrology. 2004 Dec 1;15(12):3256-3262.
37. Roberts DM, Jiang SH, Chadban SJ. The treatment of acute antibody-mediated rejection in kidney transplant recipients—a systematic review. Transplantation. 2012 Oct 27;94(8):775-783.
38. Criteria for the Clinical Use of Intravenous Immunoglobulin in Australia, July 2012.
39. Feldman RJ, Christen WG, Ahmed AR. Comparison of immunological parameters in patients with pemphigus vulgaris following rituximab and IVIG therapy. British Journal of Dermatology. 2012 Mar 1;166(3):511-517.
40. Enk AH, Hadaschik EN, Eming R, Fierlbeck G, French LE, Girolomoni G, Hertl M, Jolles S, Karpati S, Steinbrink K, Stingl G. European Guidelines (S1) on the use of high-dose intravenous immunoglobulin in dermatology. Journal of the European Academy of Dermatology and Venereology. 2016 Oct;30(10):1657-1669.
41. Prairie Collaborative Immune Globulin Utilization Management Framework Project. Criteria for the clinical use of immune globulin. Alberta Ministry of Health, Shared Health Manitoba, and Saskatchewan Ministry of Health; 2022
42. Prairie Collaborative Immune Globulin Utilization Management Framework Project. Criteria for the clinical use of immune globulin, 2nd edition: Background document. Alberta Ministry of Health, Shared Health Manitoba, and Saskatchewan Ministry of Health; 2022. Available from: https://www.ihe.ca/public/uploaded/Prairie Ig Final Guideline 09.02.22.pdf.
43. INESS Optimal Usage guide – immunoglobulins in fertility, cardiology and other indications. Quebec, October 2022. Optimal usage guide - Immunoglobulins in fertility, cardiology and other indications (inesss.qc.ca). Accessed on July 15, 2024.
44. Banjar S, Kadour E, Khoudja R, Ton-leclerc S, Beauchamp C, Beltempo M, Dahan MH, Gold P, Jacques Kadoch I, Jamal W, Laskin C. Intravenous immunoglobulin use in patients with unexplained recurrent pregnancy loss. American Journal of Reproductive Immunology. 2023 Aug;90(2):e13737.

45. Health Canda. Canadian Guidelines for Body Weight Classification in Adults. 2019-11-25. Canadian Guidelines for Body Weight Classification in Adults - Canada.ca. Accessed on October 10, 2024.
46. Public Health Ontario. Measles: Post-exposure Prophylaxis for Contacts. Published September 2024. Measles: Post-exposure Prophylaxis for Contacts (publichealthontario.ca). Accessed on October 10, 2024.
47. Haas M, Loupy A, Lefaucheur C, Roufosse C, Glotz D, Seron DA, Nankivell BJ, Halloran PF, Colvin RB, Akalin E, Alachkar N. The Banff 2017 Kidney Meeting Report: Revised diagnostic criteria for chronic active T cell–mediated rejection, antibody-mediated rejection, and prospects for integrative endpoints for next-generation clinical trials. American Journal of Transplantation 2018;18:293-307.
48. Genest G, Elliott B, Spitzer K, Laskin CA, Buckett W, Lapensée L, IJ K, Gol P. Intravenous Immunoglobulin (IVIg) for unexplained infertility: a case series. Clinical and Experimental Obstetrics & Gynecology. 2018 Oct 10;45(5):699-701.
49. Peero EK, Banjar S, Khoudja R, Ton-Leclerc S, Beauchamp C, Benoit J, Beltempo M, Dahan MH, Gold P, Kadoch IJ, Jamal W. Intravenous immunoglobulin for patients with unexplained recurrent implantation failure: a 6-year single center retrospective review of clinical outcomes. Scientific Reports. 2024 Feb 16;14(1):3876.
50. INESSS Summary - Optimal use of immunoglobulin in fertility, cardiology and other indications . Quebec, October 2022. Accessed on July 15, 2024
51. Expert Panel on immune globulin product supply and related impacts in Canada. Protecting Access to Immune Globulins for Canadians. Government of Canada Publications, 2018. https://publications.gc.ca/collections/collection_2018/sc-hc/H22-4-12-2018-eng.pdf Accessed on July 15, 2024.

# Appendix – Visual Aid

The following is an abbreviated version of only recommendations for IVIG or SCIG that are included in the "green" colour coded categorization where IG can be used, and TM medical director approval is not routinely necessary. It is intended to be used as a visual aid to quickly cross reference MOH order form with medical conditions where IG can be used. Indications for IM injections of IG are not listed in this visual aid. For further indication information, see above.

**Dermatology**

| Order Number | Medical Condition | Dosage |
|---|---|---|
| **D1-ABD** | Autoimmune blistering diseases | 2 g/kg adjusted body weight divided over 2 to 5 days.<br>Maintenance dosing as required |
| **D2-PG** | Pyoderma gangrenosum | **Induction**: 2 g/kg adjusted body weight divided over 2 to 5 days.<br>**Maintenance:** 1 to 2 g/kg adjusted body weight divided over 2 days, |
| **D3-S** | Scleromyxedema | 2 g/kg adjusted body weight divided over 2 to 5 days.<br>Maintenance dosing as required |

**Hematology**

| Order Number | Medical Condition | Dosage |
|---|---|---|
| **H1-FAIT**<br>**H2-NAIT** | Fetal/ Neonatal alloimmune thrombocytopenia (F/NAIT) | **Maternal**:<br>• Previous fetus with intracranial hemorrhage - 2 g/kg weekly<br>• No previous fetus with intracranial hemorrhage- 1g/kg weekly<br>**Infant**: 1 g/kg, additional after reassessment. |
| **H3-GALD** | Gestational alloimmune liver disease (GALD)/alloimmune neonatal hemochromatosis | 1 g/kg |

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|---|---|---|
| **H4-HDF** | Hemolytic disease of the fetus (HDF), prevention | 1 g/kg adjusted body weight, weekly, throughout pregnancy. |
| **H5-HDN** | Hemolytic Disease of the Fetus and Newborn (HDFN) | 0.5 g/kg over 4 hours. |
| **H6-HIT** | Heparin-induced thrombocytopenia (HIT) | Single dose of 1 g/kg **actual** body weight |
| **H7-HSCT** | Hematopoietic stem cell transplant (HSCT), allogeneic, Cytomegalovirus (CMV)-induced pneumonitis | 1 g/kg adjusted body weight once daily for 2 days |
| **I2-SID** | Hypogammaglobulinemia acquired secondary to hematological malignancies | **Induction**: 0.4 g/kg adjusted body weight<br>**Maintenance**: 0.4 to 0.6 g/kg adjusted body weight IVIG every 4 weeks, or SCIG 0.1 to 0.15 g/kg adjusted body weight weekly |
| **H8-ITPA** | Immune thrombocytopenia (ITP) Adult | **Induction**: 1 g/kg as a single dose<br>**Maintenance**: Consider 1-2 g/kg. |
| **H9-ITPP** | Immune Thrombocytopenia (ITP) Pediatric | Single dose of 0.8 to 1 g/kg. Second dose may be required based on clinical response. |
| **H10-NHP** | Neonatal hemochromatosis, prevention | **Neonatal**: 1-2g/kg following exchange transfusion, then up to 1g/kg weekly as required.<br>**Maternal**: 1 g/kg adjusted body weight (to max of 100g) weekly from 18 weeks gestation until delivery. |
| **H11-NT** | Neonatal thrombocytopenia secondary to maternal autoimmune disorders | Single dose of 1 g/kg. Dose may be repeated if clinically indicated. |
| **H12-PTP** | Post-transfusion purpura (PTP) | Up to 2 g/kg divided over 2 to 5 consecutive days, repeat if necessary |
| **H13-VITT** | Vaccine induced immune thrombotic thrombocytopenia (VITT) / vaccine induced prothrombotic immune thrombocytopenia (VIPIT) | 2 g/kg **actual** body weight divided over 2 to 5 days |

**Immunology**

| Order Number | Medical Condition | Dosage |
|---|---|---|
| **I1-PID** | Primary immunodeficiency (PID) disorders | **Induction**: 0.4 g/kg adjusted body weight<br>**Maintenance**: 0.4 to 0.6 g/kg adjusted body weight IVIG every 4 weeks or SCIG 0.1 to 0.15 g/kg adjusted body weight weekly |
| **I2-SID** | Hypogammaglobulinemia, secondary immunodeficiency disorders (SID) | **Induction**: 0.4 g/kg adjusted body weight<br>**Maintenance:** 0.4 to 0.6 g/kg adjusted body weight IVIG every 4 weeks, or SCIG 0.1 to 0.15 g/kg adjusted body weight weekly |
| **I3-HSCTPID** | Hematopoietic Stem Cell Transplant in primary immunodeficiencies | 0 .4 to 0 .6 g/kg every 3-4 weeks |

**Infectious Disease**

| Order Number | Medical Condition | Dosage |
|---|---|---|
| **ID1-MPEP** | Measles, post-exposure prophylaxis (PEP) - IVIG | **Patients weighing more than 30 kg:** single dose of 0.4 g/kg adjusted body weight (use actual body weight in pregnancy). |
| **ID2-TSS** | Toxic shock syndrome (TSS) | Single dose of 2 g/kg adjusted body weight divided over 2-5 days **or**<br>1 g/kg on day 1 and 0.5 g/kg on days 2 and 3. |
| **ID3-VZV** | Varicella-zoster virus (VZV), prophylaxis<br>(only when VZIG is unavailable) | Single dose of 0.4 g/kg adjusted body weight |

**Neurology**

| Order Number | Medical Condition | Dosage |
|---|---|---|
| **N1-ADEM** | Acute disseminated encephalomyelitis (ADEM) | **Induction**: 2 g/kg adjusted body weight divided over 2-5 days<br>**Maintenance**: 0.4 to 2 g/kg adjusted body weight every 4 to 6 weeks. |

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| **N2-AMAE** | Autoimmune encephalitis mediated by antibodies (AMAE) targeting cell-surface antigens | **Induction**: 2 g/kg adjusted body weight divided over 2-5 days<br><br>**Maintenance**: 0.5 to 2 g/kg adjusted body weight, monthly. |
| **N3-CIDP** | Chronic Inflammatory Demyelinating Polyneuropathy (CIDP) | **Induction**: 2 g/kg adjusted body weight divided over 2-5 days<br><br>**Maintenance**: 1 g/kg adjusted body weight every 3 weeks. |
| **N4-GBS** | Guillain-Barré Syndrome (GBS) including Miller-Fisher syndrome and other variants | **Adult**: Total dose of 2 g/kg divided over 2 to 5 days.<br><br>**Pediatric**: Total dose of 2 g/kg divided over 2 days. |
| **N5-LEMS** | Lambert–Eaton Myasthenic Syndrome (LEMS) | **Induction**: 2 g/kg adjusted body weight divided over 2 to 5 days.<br><br>**Maintenance**: 0.4 to 1 g/kg adjusted body weight, every 2 to 6 weeks. A maximum dose of 2 g/kg may be given in any 4-week period. |
| **N6-MMN** | Multifocal Motor Neuropathy (MMN) | **Induction / Single**: 2 g/kg divided over 2 to 5 days.<br><br>**Maintenance**: usually 1g/kg or less, although some patients may require higher doses for efficacy, up to 2 g/kg every 4 weeks. |
| **N7-RRMS** | Multiple Sclerosis (MS) - Relapsing remitting multiple sclerosis (RRMS), short-term therapy | **Induction**: 1 to 2 g/kg adjusted body weight divided over 1 to 5 days (maximum 1 g/kg/day).<br><br>**Maintenance**: 0.4 to 1 g/kg adjusted body weight every 4 to 6 weeks. |
| **N8-MG** | Myasthenia Gravis (MG) | **Induction**: 1 to 2 g/kg adjusted body weight divided over 1 to 5 days (maximum 1 g/kg/day).<br><br>**Maintenance**: 0.4 to 1 g/kg adjusted body weight every 4 to 6 weeks. |
| **N9-MOGAD** | Myelin Oligodendrocyte Glycoprotein antibody-associated disorders (MOGAD) – pediatric | **Induction**: 1 to 2 g/kg adjusted body weight divided over 1 to 5 days (maximum 1 g/kg/day).<br><br>**Maintenance**: 1 g/kg adjusted body weight divided over 1 to 3 days (maximum 1 g/kg/day), every 4 weeks. |
| **N10-NAIgMP** | Neuropathy associated with IgM paraproteinemia. | 2 g/kg adjusted body weight divided over 2 to 5 days, every 4 weeks |

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| **N11-OMA** | Opsoclonus-Myoclonus Ataxia (OMA) – pediatric onset | **Induction**: 1 to 2 g/kg adjusted body weight divided over 1 to 5 days (maximum 1 g/kg/day).<br><br>**Maintenance**: 0.4 to 1 g/kg adjusted body weight divided over 1 to 5 days (maximum 1 g/kg/day), every 4 to 6 weeks. |
| **N12-SSN** | Sjögren Syndrome associated neuropathy | **Induction**: 1 to 2 g/kg adjusted body weight divided over 1 to 5 days (maximum 1 g/kg/day).<br><br>**Maintenance**: 0.4 to 1 g/kg adjusted body weight divided over 1 to 5 days (maximum 1 g/kg/day), every 4 to 6 weeks. |
| **N13-MWS** | Stiff Person Syndrome (Moersch–Woltman syndrome) | **Induction**: 2 g/kg adjusted body weight divided over 2 to 5 days.<br><br>**Maintenance**: 1 to 2 g/kg adjusted body weight divided over 1 to 5 days (maximum 1 g/kg/day), every 3 to 6 weeks. |
| **N14-SC** | Sydenham Chorea | Single dose of 2 g/kg adjusted body weight divided over 2 to 5 days. |
| **N15-VN** | Vasculitic Neuropathy as part of a systemic disorder | Dose and frequency of administration should follow the recommendations for the underlying systemic disorder. Refer to the appropriate medical condition. |

**Rheumatology**

| Order Number | Medical Condition | Dosage |
|---|---|---|
| **R1-ASC** | Antiphospholipid syndrome - catastrophic | Single dose of 2 g/kg adjusted body weight divided over 2 to 5 days |
| **R2-AIR** | Autoimmune retinopathy (AIR) | **Induction**: 1.5 g/kg adjusted body weight divided over 3 days.<br><br>**Maintenance**: 0.4 to 1.5 g/kg adjusted body weight in single or divided dose (maximum 1 g/kg/day), monthly. |
| **R3-EGPA** | Eosinophilic granulomatosis with polyangiitis (EGPA) (Churg–Strauss disease) | 2 g/kg adjusted body weight divided over 2 to 5 days, every 4 weeks. Dose titrated to lowest dose/frequency necessary to maintain clinical effectiveness. |
| **R4-IIM** | Idiopathic Inflammatory myopathy (IIM) | 2 g/kg to be given over 2 days monthly for 3-6 months and if effective to be continued at decreasing frequency (determine minimum effective dose) |

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| **R5-JIIM** | Juvenile Idiopathic Inflammatory Myopathy (J-IIM) | 2 g/kg to be given over 2 days monthly for 3-6 months and if effective to be continued at decreasing frequency (determine minimum effective dose) |
| **R6-KD** | Kawasaki Disease | 2 g/kg for 1 day (second dose can be given for patients who fail to respond to initial dose). |
| **R7-MAS** | Macrophage activation syndrome (MAS) | Single dose of 2 g/kg adjusted body weight |
| **R8-MISC** | Multisystem inflammatory syndrome in children (MIS-C) associated with SARS-CoV-2/COVID-19 infection | 2 g/kg adjusted body weight over 12 hours unless cardiac function and/or fluid status necessitates dividing the dose over 2 days.<br>A single treatment is usually sufficient |

**Transplant**

| Order Number | Medical Condition | Dosage |
|---|---|---|
| **T1-CARV/URTI** | Community-acquired respiratory virus (CARV), upper respiratory tract infection (URTI) in high-risk patients | Single dose of 1 g/kg adjusted body weight, with IgG level reassessed weekly. |
| **T2-PvB19** | Parvovirus B19 in solid organ transplant recipients | 2 g/kg adjusted body weight divided over 5 days. |
| **T3-ABMR** | Solid organ transplant, active antibody-mediated rejection (ABMR) prevention and management | **IVIG with plasma exchange:** 0.1 g/kg adjusted body weight after each plasma exchange, to a maximum total dose of 2 g/kg.<br>**IVIG alone:** 2 g/kg adjusted body weight divided over 2 to 5 days. |
| **T4-DGR** | Solid organ transplant, ongoing desensitization, prevention or treatment of graft rejection | 0.1 to 0.5 g/kg adjusted body weight, which may be given in divided doses up to a total maximum dose of 2 g/kg adjusted body weight in a 4-week period. |

**Other**

| Order Number | Medical Condition | Dosage |
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| **O1-SCLS** | Systemic capillary leak syndrome (SCLS) | 1 to 2 g/kg adjusted body weight divided over 2 to 5 days (maximum 1 g/kg/day), every 4 weeks. |