IVIG (Intravenous immune globulin)

IVIG is a replacement therapy for primary and secondary immunodeficiencies, and IgG antibodies against bacteria, viral, parasitic and mycoplasma antigens; interference with Fc receptors on the cells of the reticuloendothelial system for autoimmune cytopenias and ITP; provides passive immunity by increasing the antibody titer and antigen-antibody reaction potential

Route of administration: *Not all products are interchangeable with regard to route of administration; consult manufacturer labeling. Several intravenous immune globulin (IVIG) 10% formulations FDA-approved for IV administration only may be administered as a SUBQ infusion based on clinical judgment and patient tolerability. In contrast, do not give higher concentration SUBQ products. Can consider switching between manufacturers based on side effects.*

Brand Names (for rheumatologic indications): Gammagard; Gamunex-C; Hizentra; Octagam; Panzyga; Privigen; Gammaked; Flebogamma

Resources from Manufacturer

Full Prescribing Information for Privigen Privigen Connect

Full Prescribing Information for Gammagard
Takeda Patient Support Co-pay Assistance

Full Prescribing Information for Gamunex-C
Gamunex Connexions Support

Full Prescribing Information for Hizentra
Hizentra Connect

Full Prescribing Information for Octagam

Full Prescribing Information for Panzyga
Panzyga Co-pay Program

Full Prescribing Information Flebogamma

Full Prescribing Information Gammaked

continued

ACR/ARP Medication Guide

American College of Rheumatology
Empowering Rheumatology Professionals

Association of Rheumatology Professionals
The Interprofessional Division of the American College of Rheumatology

FDA-Approved Indications and Dosing in Rheumatology

IVIG is indicated for:

- Chronic inflammatory demyelinating polyneuropathy (CIDP) (Gammagard, Gamunex-C, Hizentra, Panzyga, Privigen)
- Dermatomyositis/Polymyositis (Octagam)
- Kawasaki syndrome (Gammagard S/D)
- Immune thrombocytopenia (acute) (Gammaked, Gamunex-C)
- Immune thrombocytopenia (chronic) (Flebogamma DIF 10%, Gammagard S/D, Gammaked, Gammaplex, Gamunex-C, Octagam 10%, Panzyga, Privigen)
- Multifocal motor neuropathy (Gammagard Liquid)

Intravenous Dosing

- Chronic inflammatory demyelinating polyneuropathy: 2 g/kg IV administered in divided doses over 2 to 5 consecutive days followed by maintenance dosing of maximum total daily dose: 1 g/kg
- Dermatomyositis/Polymyositis: 1g/kg IV per day on 2 consecutive days every 4 weeks OR 2g/kg as a single dose every 4 weeks
- Immune thrombocytopenia: 1g/kg IV once daily for 1-2 days, second dose may be held if adequate platelet response in 24 hours (> 50,000 /mm3)
- Kawasaki syndrome: 1g/kg or 400mg/kg for 4 consecutive days, begin within 7 days of fever onset
- Multifocal motor Neuropathy: 2g/kg IV every in divided doses over 2-5 consecutive days, maintenance of 1-2 g/kg every 2-6 weeks

Contraindications

Hypersensitivity to immune globulin or any component, IgA deficiency, hyperprolinemia, hypersensitivity to corn, hereditary intolerance to fructose, hypersensitivity to hyaluronidase

Warnings and Precautions

1. Anaphylaxis/hypersensitivity reactions, those with known antibodies to IgA are at higher risk
2. Aseptic meningitis, may occur at high doses or with rapid administration
3. Hematoma, do not administer subcutaneously for immune thrombocytopenia
4. Hemolysis, more likely with high doses and those with underlying inflammatory conditions
5. Hereditary fructose intolerance, contains sorbitol
6. Hyperproteinemia
7. Hypertension
8. Infusion reactions, patient should be monitored for adverse effects during and after the infusion
9. Pulmonary edema, monitor for transfusion related acute lung injury
10. Renal dysfunction and acute renal failure, associated with IV administration, use caution in elderly patients, patients with renal disease, diabetes, volume depletion, sepsis and those on nephrotoxic medications. Occurs more commonly in those receiving products that contain sucrose
11. Thromboembolic events, may occur even in absence of risk factors for thrombosis

Adverse Reactions (>5%)

- Headache, asthenia, hypertension, nausea, pain in extremity, hemolysis, influenza like illness, leukopenia, and rash

**For manufacturer and disease specific side effects see package inserts above*

Medication Strength and Preparations

Brand Name	Infusion Rate	Stabilizer	Notes
Flebogamma 5% Flebogamma 10%	0.5mg/kg/minute 1 mg/kg/minute	Sorbitol	–
Gammagard 5% Gammagard 10%	0.5mL/kg/hour Based on indication	Glycine	May be subcutaneous as well
Gammaked 10%	Based on indication	Glycine	May be subcutaneous as well
Gamunex-C 10%	Based on indication	Glycine	May be subcutaneous as well
Hizentra 20%	Based on indication	Proline	Subcutaneous infusion only**
Octagam 5% Octagam 10%	0.5mg/kg/minute 1 mg/kg/minute	Maltose	
Panzyga 10%	Based on indication	Glycine	
Privigen10%	Based on indication	Proline	

Medication Administration and Storage

- All stored under refrigeration at 2 to 8° C, check product specific labeling for duration

Subcutaneous Administration

- SUBQ infusion: Initial dose should be administered in a healthcare setting capable of providing monitoring and treatment in the event of hypersensitivity. Using aseptic technique, follow the infusion device manufacturer's instructions for filling the reservoir and preparing the pump. Remove air from administration set and needle by priming. After the administration sites are clean and dry, insert subcutaneous needle and prime administration set. Attach sterile needle to administration set, gently pull back on the syringe to assure a blood vessel has not been inadvertently accessed (do not use needle and tubing if blood present). Repeat for each injection site; deliver the dose, following instructions for the infusion device. Rotate the site(s) between successive infusions. Treatment may be transitioned to the home/home care setting in the absence of adverse reactions
- Follow product specific infusion rates

Medication Administration and Storage *continued*

Intravenous Administration

- SUBQ infusion: Initial dose should be administered in a healthcare setting capable of providing monitoring and treatment in the event of hypersensitivity. Using aseptic technique, follow the infusion device manufacturer's instructions for filling the reservoir and preparing the pump. Remove air from administration set and needle by priming. After the administration sites are clean and dry, insert subcutaneous needle and prime administration set. Attach sterile needle to administration set, gently pull back on the syringe to assure a blood vessel has not been inadvertently accessed (do not use needle and tubing if blood present). Repeat for each injection site; deliver the dose, following instructions for the infusion device. Rotate the site(s) between successive infusions. Treatment may be transitioned to the home/home care setting in the absence of adverse reactions
- Follow product specific infusion rates

Intravenous Medication Preparation

- If plasmapheresis employed for treatment of condition, administer immune globulin **after** completion of plasmapheresis session.
- Infuse over 2 to 24 hours
- Administer in separate infusion line from other medications; if using primary line, flush with NS or D5W (product specific; consult product prescribing information) prior to administration
- Decrease dose, rate and/or concentration of infusion in patients who may be at risk of renal failure
- Decreasing the rate or stopping the infusion may help relieve some adverse effects (flushing, changes in pulse rate, changes in blood pressure). Epinephrine should be available during administration.
- For initial treatment or in the elderly, a lower concentration and/or a slower rate of infusion should be used
- ***Initial rate of administration and titration is specific to each IVIG product. Refrigerated product should be warmed to room temperature prior to infusion. Some products require filtration; refer to individual product labeling. Antecubital veins should be used, especially with concentrations ≥10% to prevent injection site discomfort.***

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