

Everything you ever wanted to
know about IVIG, and more!

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What exactly is IVIG?

- Intravenous Immune Globulin
 - Immune Globulin – antibody, protein, Y-shaped, protect from foreign invaders – most common is IgG
 - Found in blood plasma
 - Human donors – takes thousands to make one dose
 - Plasma is treated to deactivate any potential viral contamination
 - Plasma is purified so that contents are as much IgG as possible and minimize other plasma contents



What exactly is IVIG?

- There is no generic form – impossible to replicate an antibody in a lab
- There are several brands which have variances:
 - Manufacturer and their process for viral deactivation and purification, therefore, contents etc.
 - Form – powder or liquid
 - Labeled indications
 - Cost

Current Brands of IVIG

Brand	Manufacturer	Concentration	Sugar Content
Carimune® NF	CSL Behring	3% or 6%	Sucrose
Flebogamma®	Grifols	5% and 10%	None
Gammagard Liquid	Baxter	10%	None
Gammagard SD LIGA	Baxter	5%	Glucose
Gammagard SD	Baxter	5%	Glucose
Gammaked™	Kedrion	10%	None
Gammaplex	BPL	5%	Sorbitol
Gamunex®-C	Grifols	10%	None
Octagam®	Octapharma	5%	Maltose
Privigen®	CSL Behring	10%	None

How is it administered?

- Usually through a vein in your arm
- If you have difficulty with IV access, central line in chest is an option – more long term
- Slowly – most reactions occur when it is run too quickly
 - Infusion rates are specific to each individual
 - Package insert is the maximum rates for anyone, but side effects tend to decrease the more slowly it is infused



Administration continued

- Start slowly and gradually increase as tolerated
- MD or Pharmacist will determine rates

How is the dose determined?

- By weight and diagnosis

EXAMPLE:

Someone with myositis is typically prescribed 2 grams per kilogram.

80 kg person = 160 grams

This would likely be broken up into 4 days of 40 gram each day

Dosing and Administration cont'd

40 grams each day should take about 3-5 hours depending on:

- MD orders
- Any prior treatment with IVIG and how it was tolerated
- How the individual actually tolerates IVIG when administered
- What the package insert for the brand used says
- Any rate restrictions for cardiac or renal issues

Dosing and Administration cont'd

Example – Privigen Prescribing Information

Intravenous Administration Only: ITP and CIDP;

*no brand is labeled for myoitis

Indication*	Dose	Initial Infusion Rate	Maintenance Infusion Rate (if tolerated)
PI	200-800 mg/kg (2-8 mL/kg) every 3-4 weeks	0.5 mg/kg/min (0.005 mL/kg/min)	Increase to 8 mg/kg/min (0.08 mL/kg/min)
ITP	1 g/kg (10 mL/kg) for 2 consecutive days	0.5 mg/kg/min (0.005 mL/kg/min)	Increase to 4 mg/kg/min (0.04 mL/kg/min)


What are the side effects of IVIG?

Severe adverse reactions

- Anaphylaxis
- Renal Failure
- Thrombotic Event
- Aseptic Meningitis Syndrome
- Hemolytic Anemia


Infusion-related reactions

- Headache
- Blood pressure changes
- Nausea
- Vomiting
- Dizziness
- Fever
- Fatigue
- Chills



What should be done before the infusion?

- Take any prescribed premedications
- Make sure the IVIG is room temperature before it is infused
- Unless it's contraindicated, hydrate!
- Nurse should take baseline vital signs




What should be done during the infusion?

- Vital signs should be taken prior to any rate changes/increases and at least every 30 minutes
- If you have any side effects tell the nurse

Where is the IVIG administered?

- Hospital outpatient infusion center
- Hospital
- Physician's office infusion suite
- Home
 - Place of employment

 *Wherever you receive it, the nurse administering it should have experience and knowledge with IVIG!*

Why and when is it used for myositis?

- PM and DM
 - When other therapies are not controlling the condition
 - When other medications are causing intolerable side effects
 - Prednisone
 - immunosuppressants
- IBM
 - To improve swallowing
 - Some small studies done



How does it work?

- Not completely understood, many theories
- Myositis thought to be autoimmune disease
 - Autoimmune disease is where the immune systems perceives part of the body as foreign and attempts to destroy it
 - IVIG suppresses the immune response
 - IVIG has anti-inflammatory properties



How is IVIG covered by my insurance?

- Almost every insurance requires prior authorization for IVIG
- Almost every insurance has a medical policy outlining how IVIG is approved.
- You must prove you have myositis
- You must demonstrate lack of response or toleration of other medications

From TMA's website:

For a diagnosis of dermatomyositis, patients must present with at least one of the skin symptoms listed in "skin lesions" and four of the remaining symptoms.

For a diagnosis of polymyositis, patients present with no skin symptoms and four of the remaining criteria.

- Proximal muscle weakness (upper or lower extremity and trunk)
- Elevated serum CK (creatin kinase) or aldolase level
- Muscle pain on grasping or spontaneous pain
- Myogenic changes on EMG (short-duration, polyphasic motor unit potentials with spontaneous fibrillation potentials)
- Positive anti-Jo-1 (histidyl tRNA synthetase) antibody
- Nondestructive arthritis or arthralgias
- Systemic inflammatory signs (fever: more than 37° C at axilla, elevated serum CRP level or accelerated ESR [erythrocyte sedimentation rate] of more than 20 mm/h by the Westergren method)
- Pathological findings compatible with inflammatory myositis (inflammatory infiltration of skeletal evidence of active regeneration may be seen)

From TMA's website

Skin lesions

- Heliotrope rash (red purple edematous erythema on the upper palpebra)
- Gottron's sign (red purple keratotic, atrophic erythema, or macules on the extensor surface of finger joints)
- Erythema on the extensor surface of extremity joints: slightly raised red purple erythema over elbows or knees

Credits: Modified with permission from Tanimoto K, Nakano K, Kano S, Mori S, Ueki H, Nishitani H, Sato T, Kiuchi T, Ohashi Y. Classification Criteria for Polymyositis and Dermatomyositis. *The Journal of Rheumatology*. 1995;22:4.

Coverage

- Most insurances have some form of these criteria in their coverage policy (Aetna is exact wording)
- For IBM, it is typically excluded from criteria as not covered
 - Small studies done don't carry a lot of weight with insurances as evidence it is effective
 - Some will allow one or two courses to see if there is benefit



So what do I need to know about IVIg?

- Decide with your physician if it's a therapy for you as well as
 - Where you want to receive it
 - Confirmation that it's covered and how by your insurance
 - The nurse administering it has experience with IVIg administration
 - Know the side effects and how you can minimize and manage them