Intravenous Immune Globulin (IVIG) Order Form

(All orders to be deleted are to be crossed out with a single line and initialed by prescriber)

DO NOT USE: U, u, IU, MS, MSO_4, 1.0 (trailing zero), .5, QD, QOD, $MgSO_4$
INSTEAD USE: Unit, Morphine, 1, 0.5 (leading zero), Daily, Every other day, Magnesium

Allergies:_____ Height:_____(cm) Weight (actual):_____(kg)

1. Indication – must check one

- ☐ Autoimmune Blistering Skin Diseases
- ☐ Bone Marrow Transplant
- ☐ Chronic Inflammatory Demyelinating Polyneuropathy (CIDP)
- ☐ Chronic Lymphocytic Leukemia (CLL)
- ☐ Clostridium Difficile (severe,recurrent)
- ☐ Dermatomyositis/Polymyositis (refractory disease)
- ☐ Guillian-Barre Syndrome (severe disease)
- ☐ Immune/Idiopathic Thromocytopenic Purpura (ITP)
- ☐ Kawasaki's Disease
- ☐ Lambert-Easton Myasthenic Syndrome
- ☐ Multifocal Motor Neuropathy
- ☐ Myasthenia Gravis
- ☐ Optic Neuropathy/Neuritis - corticosteroid resistant
- ☐ Parvovirus B-19 infection – immunocompromised patient with pure red cell aplasia
- ☐ Post-Transfusion Purpura
- ☐ Primary Immunodeficiency **(Carimune NF as a 3% solution)**
- ☐ Respiratory Syncytial Virus Infection (RSV) – severely ill, immunocompromised patient
- ☐ Stiff Person Syndrome
- ☐ Toxic Epidermal Necrolysis/Stevens-Johnson Syndrome
- ☐ Toxic Shock Syndrome
- ☐ **Other:** _____

2. Pre-Medications: 30 minutes prior to <u>each</u> IVIG infusion

- ☐ Acetaminophen (Tylenol) 650mg orally x 1 dose
- ☐ Acetaminophen (Tylenol) 650mg per rectum x 1 dose
- ☐ Diphenhydramine (Benadryl) 25mg orally x 1 dose
- ☐ Diphenhydramine (Benadryl) 25mg IV x 1 dose
- ☐ Other:_____

3. IV Fluids: Volume status should be evaluated and patients should be adequately hydrated prior to initiating IVIG

NaCl 0.9% ☐ 250 mL ☐ 500 ml ☐ 1000 mL at _____ mL/hr **X 1 bag** prior to **<u>each</u>** IVIG infusion

☐ Other: _____ ☐ None, already on maintenance fluids or contraindicated

4. Product selection

☐ **Carimune® NF - (Formulary/Preferred product) 6% solution OR (select one) ☐ 3% ☐ 9%**

For Primary Immunodeficiency, the first infusion of Carimune NF should be given as a 3% solution.

☐ **Privigen® 10% -** Sucrose-free product. **NON-FORMULARY**. Requires **<u>Non-formulary Form</u>** to be completed and signed by attending physician **AND** approval by clinical pharmacy staff.

5. Dose/Frequency: Doses will be automatically rounded to nearest whole vial size. (see Table 1: Recommended Doses)

☐ **IVIG _____ grams/kg IBW (usual dose range: 0.4 – 2 g/kg) IV daily x _____ doses**

All patients will be dose based on ideal body weight (IBW), except when actual body weight is less than IBW and obese patients more than 100kg or BMI > 30 kg/m^2 (use Adjusted BW in obese patients).

6. Infusion rate: Advance **ONLY** as tolerated (see Table 2: Recommended Infusion Rates)

- ☑ **Carimune® NF**: Begin at 0.5 mg/kg/min. After 30 minutes, increase to 1 mg/kg/min. Continue to increase by doubling the rate (every 30 min) up to a **<u>MAX of 2 mg/kg/min</u>**.
- ☑ **Privigen® 10%:** Begin at 0.5 mg/kg/min. After 30 min, increase to 1 mg/kg/min. Continue to increase by doubling the rate (every 30 min) up to a **<u>MAX of 4 mg/kg/min</u>** (**MAX of 4 mg/kg/min for ITP indication and <u>2 mg/kg/min</u> for patients with or at risk for renal dysfunction or thrombosis, see page # 2).**

7. Administration considerations:

- Use slower infusion rates in patient with renal dysfunction/acute renal failure, thrombosis or congestive heart failure.
- Increase rate if no adverse reaction occurs. Decreasing rate may help relieve some side effects.
- Must be administered via dedicated intravenous line. Do not mix with other medications.

8. Monitoring:

- ☑ Vital signs (Temp, HR, RR, BP) immediately before infusion, then every 15 minutes for the first hour, then every hour for the duration of infusion and 15-30 min after completion.
- ☑ If mild reaction occurs (headache, flushing, dizziness, nausea): **<u>STOP</u>** infusion until symptoms subside, **THEN** resume infusion at half the rate causing the adverse reaction. Re-titrate (increase) rate as tolerated.
- ☑ For **moderate to severe reactions** (anaphylaxis, chest pain, hypotension, bronchospasms, angioedema, chills or fever > 100.4), **<u>STOP</u>** the infusion immediately **<u>AND</u>** contact prescriber. **Do not discard**.

Physician's Signature & ID:_____ **Printed Name:**_____ **Date/Time:**_____

University of Miami Hospital

Patient Identification Sticker

Intravenous Immune Globulin Order Form **Revised March 2014**

Intravenous Immune Globulin (IVIG) Order Form- Reference

Table 1. Recommended Doses: Dose to be based on ideal body weight (IBW), unless actual body weight is less than IBW and obese patients more than 100kg or BMI > 30 kg/m^2 (use Adjusted body weight (ABW) obese patients).

IBW: M = 50 kg (1st 5 ft) + (2.3 x inches over 5 ft); F = 45.5 kg (1st 5 ft) + (2.3 x inches over 5 ft); ABW: IBW + 0.4 (actual body weight – IBW)

Indication	Recommended dose
FIRST LINE INDICATIONS	
Bone Marrow Transplant	0.5 g/kg/dose every 2 weeks if IgG level < 500 mg mg/dL
Chronic Inflammatory Demyelinating Polyneuropathy (CIDP)	Acute: 0.4 g/kg/day x 5 days Chronic: 0.5 g/kg/day x 2 days every 3 weeks
Gullian-Barre Syndrome- Severe disease	0.4 g/kg/day x 5 days or 0.5 g/kg/day x 4 days or 1 g/kg/day x 2 days
Idiopathic Thrombocytonepia Purpura (ITP) – Acute ITP with platelet count < 30,000/mm^3 or actively bleeding	0.4 g/kg/day x 5 days or 0.5 g/kg/day x 4 days or 1 g/kg/day x 2 days
Kawasaki's Disease - administer within 10 days of onset of illness and before aneurysms occur	2 g/kg x one dose – In combination with aspirin
Myasthenia Gravis / Lambert-Easton Myasthenic Syndrome- Severe exacerbation or crisis	0.4 g/kg/day x 5 days or 0.5 g/kg/day x 4 days or 1 g/kg/day x 2 days
Multifocal Motor Neuropathy	Acute: 0.4 g/kg/day x 5 days Chronic: 1g/kg every 2- 4 weeks or 2 g/kg every 1 – 2 months
Parvovirus B-19 infection – immunocompromised patients with pure red cell aplasia AND failure of steroids or other immunosuppressive therapy	0.4 g/kg/day x 5 days or 0.5 g/kg/day x 4 days or 1 g/kg/day x 2 days
Post-Transfusion Purpura – sudden, severe thrombocytopenia (5-10 days post transfusion) AND active bleeding	0.4 g/kg/day x 5 days or 0.5 g/kg/day x 4 days or 1 g/kg/day x 2 days
Primary Immunodeficiency (PI) - (congenital agammaglobulinemia, severe combined immunodeficiency syndromes, common variable immunodeficiency, X-linked immunodeficiency and Wiskott-Aldrich Syndrome)	0.4 g/kg to 0.8 g/kg once every 3 to 4 weeks (Dose adjusted to maintain goal trough of IgG greater than 500 mg/dL)
Respiratory Syncytial Virus infection – severely ill AND immunocompromised patient.	0.5 g/kg every other day for the duration of inhaled ribavirin therapy.
SECOND LINE INDICATIONS	
Autoimmune Blistering Skin Diseases- severe AND conventional corticosteroid or other immunosuppressant therapy as failed	0.4 g/kg/day x 5 days. May repeat every 3 to 4 weeks
Chronic Lymphocytic Leukemia- hypogammaglobulinemia and severe, recurrent infection	0.4 g/kg/dose every 3 to 4 weeks
Dermatomyositis (DM)/Polymyositis (PM) – for refractory disease. Should be given in combination with steroids or other immunosuppressive therapy	DM: 1g/kg/day x 2 days monthly x 3 months Alternative (for both DM or PM) 0.5 g/kg/day x 4 days or 1 g/kg/day x 2 days
Stiff Person Syndrome – failed standard therapy (diazepam, baclofen or other immunosuppressive therapy)	1 g/kg/day x 2 days
THIRD LINE INDICATIONS	
Clostridium Difficile infection – Severe and recurrent disease	0.2 to 0.3 g/kg x one dose
Optic Neuropathy/Neuritis – corticosteroid refractory	0.4 g/kg/day x 5 days, then single infusion monthly x 3 months Alternative: 0.4 g/kg/day at days 0,1,2,30 and 60
Toxic Epidermal Necrolysis/Stevens-Johnson Syndrome involved body surface area > 10% AND other treatments are contraindicated OR condition life-threatening	2 g/kg as single dose or divided over 2 - 3 days
Staphylococcal or Streptococcal Toxic Shock Syndrome	1 g/kg/day x one dose. May repeat 0.5 mg/kg/day x 2 days

Table 2. Recommended Infusion Rates

Product: Carimune NF

Concentration (%)	Initial Infusion Rate: 0.5 mg/kg/min	1 mg/kg/min	2 mg/kg/min*	Maximum Infusion Rate†: 3 mg/kg/min
3%	0.0167 mL/kg/min	0.033 mL/kg/min	0.067 mL/kg/min	0.10 mL/kg/min
6%	**0.008 mL/kg/min**	**0.0167 mL/kg/min**	**0.033 mL/kg/min**	**0.050 mL/kg/min**
9%	0.006 mL/kg/min	0.011 mL/kg/min	0.022 mL/kg/min	0.033 mL/kg/min

* Maximum infusion rate for patients at risk of renal dysfunction or thromboembolic events.

† For patients **not** at risk of renal dysfunction or thromboembolic events.

Product: Privigen 10%

Indication	Initial Infusion Rate: 0.5 mg/kg/min	Maintenance rate (if tolerated)
PI	0.005 mL/kg/min	8 mg/kg/min (0.08 mL/kg/min)
ITP	0.005 mL/kg/min	4 mg/kg/min (0.04 mL/kg/min)

***Patients predisposed to acute renal failure**

- Preexisting renal insufficiency (GFR < 60)
- Diabetes mellitus
- Age > 65
- Volume depletion
- Sepsis
- Receiving other known nephrotoxic drugs