1. Allergies / Sensitivities (include types of reactions)

2. Height:__________________cm     Actual Weight:__________________kg

3. INDICATION
   - Hypogammaglobulinemia
     - hereditary
     - nonfamilial
   - Common Variable Immunodeficiency - CVID
     - with predominant abnormalities of B-cell numbers & function
     - with autoantibodies to B or T-cells
     - other common variable immunodeficiencies
     - unspecified
   - Chronic Lymphocytic Leukemia of B-cell type
     - not having achieved remission
     - in relapse
   - Other Lymphoid Leukemia
     - not having achieved remission
     - in relapse
   - Kawasaki Disease (Mucocutaneous Lymph Node Syndrome)
   - Idiopathic Thrombocytopenic Purpura - ITP
   - Evans Syndrome

4. COMORBIDITIES:
   - Coronary Artery Disease
   - Diabetes
   - Hypertension
   - Previous MI, DVT, PE, CVA, TIA
   - Cancer
   - Smoker
   - Renal Impairment
   - CHF
   - Migraine
   - Asthma
   - Obesity
   - Other__________________________________________ (specify)

5. IVIG PHARMACY TO DOSE (See back for infusion guidelines):
   - * Low IgA content required (Pharmacy to dispense Gammagard Brand)

6. PREMEDICATION - Administer 30 minutes prior to IVIG infusion:
   - Acetaminophen (Tylenol) 650 mg orally
   - Diphenhydramine (Benadryl) 25mg PO
   - Famotidine 20 mg PO

7. REACTION MANAGEMENT
   - For common reactions (including fever, headache, nausea or vomiting)
     - Temporarily stop or slow infusion rate to that previously tolerated by patient and treat symptoms as required.
     - For chills or rigors
       - Decrease infusion rate to that previously tolerated by patient and notify physician.
       - Adults only - May administer meperidine (Demerol) 12.5 mg IVP, may repeat once 15 minutes after original dose, if needed.
     - For serious reactions (including hypotension, angioedema, bronchospasms, dyspnea and anaphylaxis) page physician
       - Stop infusion, notify physician and treat symptoms as required.
       - Begin IV of 0.9 % Sodium Chloride at 10mL/hr to keep line open (may administer 250 mL fluid bolus PRN hypotension).
       - Adults - Administer diphenhydramine 25 mg IVP (may repeat x 1 if needed), hydrocortisone 100 mg IVP, epinephrine 0.3 mg IM, Famotidine 20 mg IVP
       - Once stable and physician agrees - restart IVIG and decrease infusion rate to that previously tolerated by patient.

8. MONITORING
   - Vital signs and temperature pre-infusion, then 15 minutes after the start of infusion for new patients who are being titrated; then PRN, then 15-30 minutes after infusion completion.

The physician's full signature, date & time is to follow the order - Abbreviations for names are not acceptable.
Adult Administration Considerations for IVIG Orders

Those with underlying renal disease or judged to be at risk of developing thrombotic events should not be infused rapidly with any IVIG product

- Hyperviscosity
- Diabetes
- Age > 65
- Volume Depletion
- Sepsis
- Concurrent nephrotoxic drugs
- Paraproteinemia
- Multiple CV risk factors
- Impaired Cardiac Output
- Atherosclerosis

Nursing to assess patient’s hydration level. Call prescribing physician if patient may be volume depleted prior to beginning infusion. No other medication through the same line with IVIG

INFUSION GUIDELINES

All dosing of IVIG is based off of Ideal Body Weight (IBW) – Programming of the Alaris pump requires IBW

Gammagard Liquid 10%

- Begin infusion at 0.8 mg/kg/min for 30 minutes, then if tolerated increase every 30 minutes as follows:
  - 2 mg/kg/min, then 4 mg/kg/min, then 6 mg/kg/min, then to max rate of 8 mg/kg/min.
- Max rate for pre-existing renal insufficiency or thrombotic risk (see above) is 3.3 mg/kg/min

Carimune

- The first infusion of Carimune must be given as a 3% solution. Subsequent infusions may be given at a 6% concentration if tolerated.
- Begin infusion at 0.5 mg/kg/min for 30 minutes, then increase as follows
  - Every 30 minutes if tolerated: 1 mg/kg/min, 1.5 mg/kg/min, 2 mg/kg/min, 2.5 mg/kg/min, then to a max rate of 3 mg/kg/min
- (Max rate for pre-existing renal insufficiency or thrombotic risk is 1.9 mg/kg/min)

ADVERSE EFFECTS

- Common: headaches, fatigue, backache, leg cramps, lightheadedness, fever, urticaria, flushing, slight elevation of blood pressure, nausea, vomiting.
  - Temporarily stop or slow infusion rate to that previously tolerated by patient and treat symptoms as required
- For Chills or Rigors
  - Decrease infusion rate to that previously tolerated by patient and notify physician.- Adults only - May administer meperidine (Demerol) 12.5 mg IVP, may repeat once 15 minutes after original dose, if needed, per provider order.
  - Serious side effects (rare): hypotension, angioedema, bronchospasms, dyspnea, renal failure, aseptic meningitis, transfusion-related lung injury, thrombotic events and anaphylaxis.
- Stop infusion, notify physician, and treat symptoms as required and ordered. Begin IV of Sodium Chloride 0.9% at 20 ml/hr to keep line open. May administer 250 ml fluid bolus per provider approval. Administer diphenhydramine 25mg IVP, hydrocortisone 100 mg IVP, and epinephrine 0.3 mg IM, famotidine 20 mg IVP as ordered. Once stable and physician agrees – restart IVIG and decrease infusion rate to that previously tolerated by patient.
  - Anaphylaxis risk increases with repeated administrations of IVIG products.
  - Caution should be used in patients with IgA less than 0.05 g/L

USUAL DOSES

- Dose or frequency may be adjusted relative to serum IgG levels when used for immunodeficiency syndrome or B-cell Chronic Lymphocytic Leukemia
- Primary Immunodeficiency- 300-600 mg/kg once every month
- Idiopathic Thrombocytopenic Purpura - 400-1000 mg/kg daily x 2-5 days; additional doses based upon clinical response
- Kawasaki Syndrome - 2000 mg/kg x 1 over 10-12 hours or 400 mg/kg daily x 4 days
- Multifocal Motor Neuropathy (MMN) - 500-2400 mg/kg once every month

NURSING CONSIDERATIONS

- May be infused peripherally; large bore veins are recommended to decrease discomfort at infusion site
- IVIG line may be flushed with 0.9% Sodium Chloride. Do not y-site any solutions containing Sodium Chloride with IVIG
- Administer at room temperature
- IVIG is derived from pooled human plasma; handle as a blood product
- Do not shake or use pneumatic tube

Nursing Care:
- Take baseline set of vitals and temperature
- Pre-medication, if ordered, give 30-60 minutes prior to administration
- In some patients fluid intolerance is a complication. Observe for symptoms that may include tachycardia, rales, and changes in respiratory pattern and notify physician.
- IVIG administration may decrease patient’s antibody response to vaccines and increase side effects.
- Alert patient/family to discuss any needed vaccinations with physician prior to receiving vaccinations post infusion.
- Assess whether the patient has had vaccines in the last month and inform the physician.