Measles Post-Exposure Prophylaxis Guidelines for IMIG/IVIG Dosing and Administration

University of Michigan Health System
Department of Pharmacy Services
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The use of Intramuscular and Intravenous Immune Globulin (IMIG/IVIG) at UMHS is restricted. Refer to the IVIG Prescribing and Dispensing Guidelines under "Drug Information" on the Pharmacy homepage for further information regarding IVIG restrictions. More information is available on the Infection Prevention Measles website (http://www.med.umich.edu/i/ice/resources/measles.html)

I. Definitions:

A. **Evidence of Immunity to Measles (any of the following):**
- Written documentation of adequate vaccination:
  - One or more doses of a measles-containing vaccine administered on or after the first birthday for preschool-age children and adults not at high risk
  - Two doses of measles-containing vaccine for school-age children and adults at high risk, including college students, healthcare personnel, and international travelers
- Laboratory evidence of immunity(defined as positive Rubeola IgG)
- Laboratory confirmation of disease
- Birth before 1957
- Documented age-appropriate vaccination supersedes the results of subsequent serologic testing

B. **Immunocompromised Patients**
- Bone marrow transplant patients until at least 12 months after finishing all immunosuppressive treatment
- Patients on treatment for acute lymphocytic leukemia or acute myelosytic leukemia within and until at least 6 months after completion of immunosuppressive chemotherapy
- Solid organ transplant recipients
- Primary immunodeficiency syndrome, who are not receiving active treatment with immunoglobulin
- Patients with a diagnosis of AIDS or HIV-infected persons with severe immunosuppression defined as CD4 percent <15% (all ages) or CD4 count <200 lymphocytes/mm3 (aged >5 years) and those who have not received MMR vaccine since receiving effective ART. Some experts include HIV-infected persons who lack recent confirmation of immunologic status or measles immunity.
- **Patients younger than 12 months whose mothers received biologic response modifiers during pregnancy.**

II. Premedications, Administration & Monitoring

A. Please refer to UMHS IVIG Guidelines: https://pharmwebsp.med.umich.edu/_layouts/15/WopiFrame.aspx?sourcedoc=/GuideLines/IV%20Immune%20Globulins%20(IVIG)/IvigDosingandAdministration.docx&action=default&DefaultItemOpen=1

B. Intramuscular immune globulin does not require premedication.

C. Intramuscular doses greater than 0.5 mL for infants <12 months of age, 1 mL for children ≥ 1 year of age, or 3 mL for adolescents and adults should be administered via separate injections at separate injection sites. The maximum intramuscular dose for adolescents/adults is 15 mL.

A. Immunoglobulin is contraindicated in patient with hypo IGA (avoid Gammagard® liquid) and prior anaphylaxis with IVIG administration

B. Immune globulin is limited resource and should be prioritized to high-risk individuals when immune globulin shortage situations exist

III. Medication recommendations for post exposure prophylaxis:

Population	Time since measles exposure	
	≤72 hours	**73 hours to 6 days**
Post-exposure prophylaxis is <u>NOT</u> necessary	• Patients who are receiving regular IVIG therapy at a dose of 400 mg/kg within 3 weeks of measles exposure • Patients who are receiving weekly subcutaneous immune globulin ≥ 200 mg/kg for 2 consecutive weeks	

Immunocompetent Infants (see I.B.), 0-5 months of age	IMIG 0.5 mL/kg (max 15 mL)**	
Immunocompetent Infants (see I.B.), 6-11 months of age	MMR vaccine*	IMIG 0.5 mL/kg (max 15 mL)**
Pregnant women, regardless of evidence of immunity	IVIG 0.4 g/kg	
Immunocompromised individuals, any age, regardless of evidence of immunity	IVIG 0.4 g/kg	
Immunocompetent individuals ≥ 12 months of age without evidence of immunity	MMR vaccine*	**Consider offering IVIG to patients with exposure to close contacts who have disease:** IMIG 0.5 mL/kg (max 15 mL - avoid if > 30 kg)** *OR* IVIG 0.4 g/kg
Individuals with evidence of immunity	No post exposure prophylaxis is required	

*** MMR vaccine and immunoglobulin should not be administered concurrently (see V.B.)**
**** IVIG could be given as an alternative to IMIG if neccessary**

IV. Michigan Medicine Preferred Products

	Administration	Product	Alternative Products
Outpatient	IM	Gamastan®	---
	IV	Gammagard®	Privigen®, Gamunex-C®
Inpatient	IM	Gamastan®	---
	IV	Gamunex-C®	Privigen®, Gammagard®

V. Follow-up Management

A. Infants 6-11 months of age who receive one dose of MMR vaccine should receive 2 additional doses at least 28 days apart after age 12 months
B. Non-immune individuals with measles exposure who received immune globulin and are ≥ 12 months and not otherwise contraindicated should receive MMR vaccine 6 months after IMIG or 8 months after IVIG

VI. References

1. https://www.cdc.gov/mmwr/preview/mmwrhtml/rr6204a1.htm
2. https://academic.oup.com/cid/article/65/11/1955/4004841
3. https://redbook.solutions.aap.org/DocumentLibrary/Red%20Book%202015%201.pdf
4. https://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/timing.html#t-05

Authors: Medication Use Policy
Approvals: Ambulatory Infusion Advisory Committee
Antimicrobial Subcommittee
Pharmacy and Therapeutics Committee