



CLINICAL GUIDELINE

**Jaundice: Immunoglobulin Infusion (IVIg) in Isoimmune Haemolytic Jaundice**

<b>Scope (Staff):</b>	Nursing and Medical Staff
<b>Scope (Area):</b>	NICU KEMH, NICU PCH, NETS WA

This document should be read in conjunction with this [DISCLAIMER](#)

Hemolytic disease of the fetus and newborn (HDFN), also known as alloimmune HDFN or erythroblastosis fetalis, is caused by the destruction of red blood cells (RBCs) of the neonate or fetus by maternal immunoglobulin G (IgG) antibodies. The formation of maternal antibodies in response to a Fetal antigen is called isoimmunization. These antibodies form when fetal erythrocytes that express certain RBC antigens that are not expressed in the mother cross the placenta and gain access to maternal blood. IVIg has been shown to reduce the need for exchange transfusion (ET) in Rhesus and ABO haemolytic disease. IVIg should be considered when the total serum bilirubin levels is 35 to 50 mmol/L, below ET level or continuing to rise at 8-17 mmol/L/hour despite **intensive** phototherapy.

IVIg may also decrease the mean number of ETs per infant, decrease the duration of phototherapy and hospital stay but does not always prevent the need for ET.

Efficacy of IVIg is not conclusive in Rh haemolytic disease of the newborn, the studies with low risk of bias indicating no benefit and studies with high risk of bias suggesting benefit. Role of IVIg in ABO disease is not clear as studies that showed a benefit had high risk of bias. It has also not shown any benefit in HDN in preterm infants.

### Indication

- Rh and ABO incompatibility.
- Not indicated unless Direct Antibody Test (DAT) is positive.
- Other isoimmune haemolytic disease (no systematic reviews available).
- Difficulties in obtaining appropriate blood for ET or parental refusal for ET.
- Do not give if exchange transfusion imminent.

### Mechanism of Action

Thought to act by blocking the Fc receptors in reticuloendothelial system thus prevents them from taking up and lysing antibody coated RBCs. May also increase rate of IgG catabolism and decrease circulating autoantibody.

### Side Effects

Possible side effects are similar to blood transfusions. Fever, allergic reactions, haemolysis, fluid overload, anaphylaxis (reported in IgA deficiency) and possible disease transmission. Systematic reviews did not reveal any adverse reactions in neonates receiving IVIg.

## Dose and Administration

**Privigen 10%** (Immunoglobulin IgG) from pooled human plasma

Presentation: 5g in 50mL vial.

- 1g/kg as an Intravenous infusion over 4 hours.

Refer to Transfusion Medicine Protocol [Privigen® Intravenous Immunoglobulin](#)

Should be used only at consultant's advice and ordered on a named patient basis only and is supplied by ARCBS on approval by their Haematologist. As with all blood product consent should be obtained from the parents.

**Contact-** WNHS haematology for supply for Privigen 10%

## Monitoring and Documentation

- Observations and documentation as per blood product administration

**NOTE: Privigen is sourced from European & USA remunerated and non-remunerated donors. Other immunoglobulin products (eg Flebogamma) should not be used in neonates, because of the possibility of undiagnosed hereditary fructose intolerance.**

**Dosages should be rounded up or down to whole vials and we should not require more than 1 x 50 mL vial (5g) per dose. Privigen 10% is administered through a standard IV infusion set. An in line 170-200 micron filter is NOT required.**

## Related CAHS internal policies, procedures and guidelines


- [Privigen® Intravenous Immunoglobulin](#)

## References and related external legislation, policies, and guidelines

1. Gottstein R& Cook R: Systematic review of IVIG in HDN: Arch.dis.child.Fetal Neonatal Ed, 2003, 88:F6-10.
2. Louis D, More K, Oberoi S, Shah PS. Intravenous immunoglobulin in isoimmune haemolytic disease of newborn: an updated systematic review and meta-analysis. Arch Dis Child Fetal Neonatal Ed. 2014 Feb 10.
3. Zwiers C, Scheffer-Rath ME, Lopriore E, de Haas M, Liley HG, Immunoglobulin for alloimmune hemolytic disease in neonates ,Cochrane Database Syst Rev. 2018 Mar 18;3:CD003313
4. Nassar GN, Wehbe C, Erythroblastosis Fetalis. Stat Pearls [Internet]. Treasure Island (FL): Stat Pearls Publishing; 2018 Oct 27.
5. Ree IMC, Smits-Wintjens VEJ, van der Bom JG, van Klink JMM1, Oepkes D, Lopriore E. Neonatal management and outcome in alloimmune hemolytic disease. Expert Rev Hematol. 2017 Jul; 10(7):607-616.
6. AAP Subcommittee on Neonatal Hyperbilirubinemia. Management of Hyperbilirubinemia in the Newborn Infant 35 or More Weeks of Gestation. Clinical Practice Guideline. Pediatrics. 114(1):297-316, 2004 Jul.

Jaundice: Immunoglobulin Infusion (IVIg) in  
Isoimmune Haemolytic Jaundice

This document can be made available in alternative formats on request for a person with a disability.

File Path:			
Document Owner:	Neonatology		
Reviewer / Team:	Neonatal Coordinating Group		
Date First Issued:	July 2006	Last Reviewed:	19th January 2019
Amendment Dates:		Next Review Date:	19th January 2022
Approved by:	Neonatal Coordinating Group	Date:	26th February 2019
Endorsed by:	Neonatal Coordinating Group	Date:	26th February 2019
Standards Applicable:	NSQHS Standards: 		
<b>Printed or personally saved electronic copies of this document are considered uncontrolled</b>			