GUIDELINE

Jaundice: Immunoglobulin Infusion (IVIg) in Isoimmune Haemolytic Jaundice

Scope (Staff):	Nursing and Medical Staff
Scope (Area):	NICU KEMH, NICU PCH, NETS WA

Child Safe Organisation Statement of Commitment

CAHS commits to being a child safe organisation by applying the National Principles for Child Safe Organisations. This is a commitment to a strong culture supported by robust policies and procedures to reduce the likelihood of harm to children and young people.

This document should be read in conjunction with this disclaimer

Aim

Outline use of Immunoglobulin Infusion (IVIg) for Isoimmune Haemolytic Jaundice.

Background

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.

Indications

- 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 WNHS Transfusion Medicine Protocol Immunoglobulin Products

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.

References and related external legislation, policies, and guidelines

WNHS Transfusion Medicine

- Immunoglobulin Products

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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.
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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.

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