Immunoglobulin Use in the Neonatal Period

A Clinical Schematic of Indications, Dosing, and Pathways

NEONATAL IMMUNOGLOBULINS

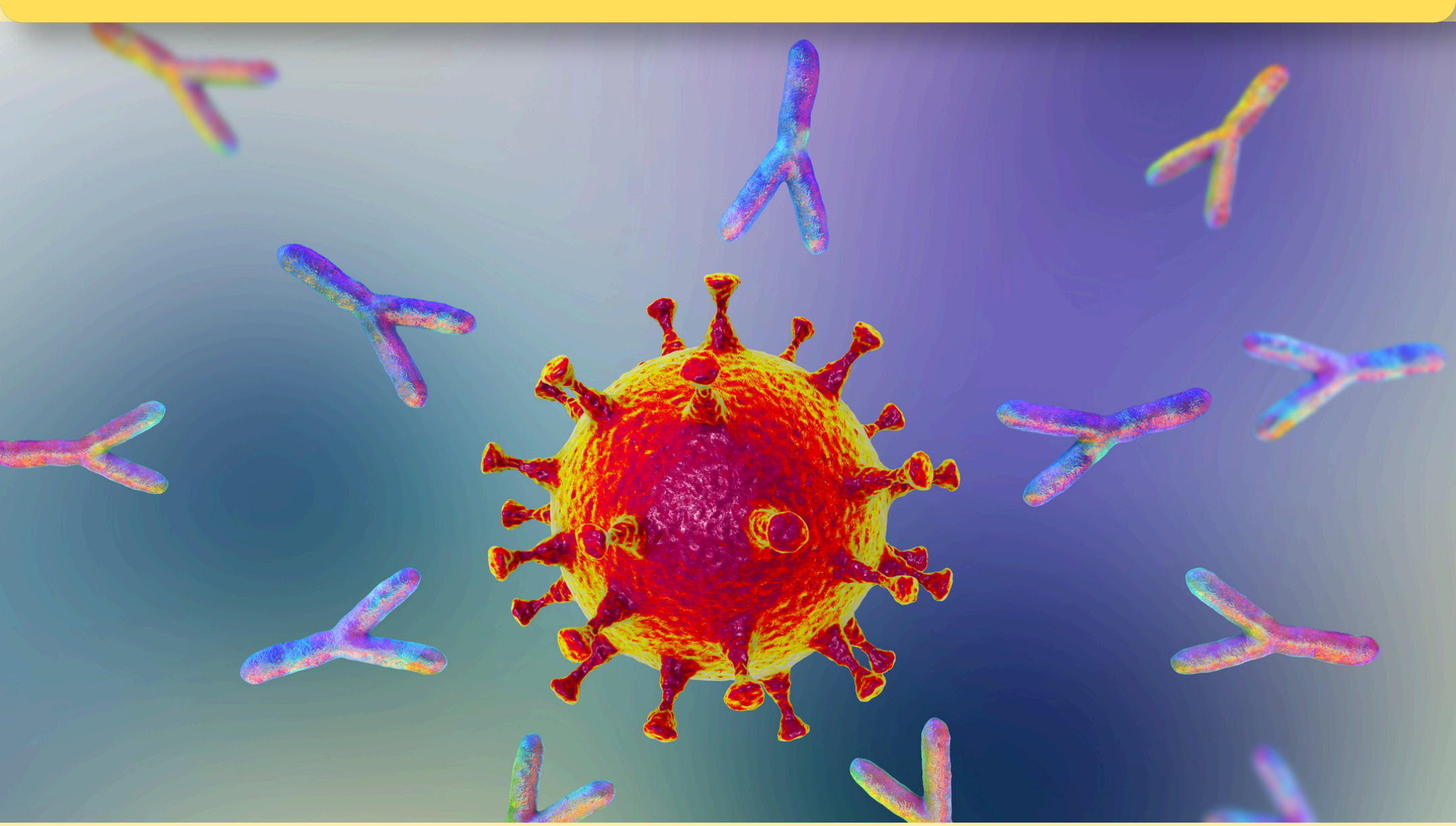
Standard Human IVIG
Broad immune modulation

Indications: Isoimmune Haemolytic Anaemia (Jaundice) & Neonatal Allo-immune Thrombocytopenia (NAIT)

Specific Hyperimmune Globulins
Targeted post-exposure prophylaxis

Indications: Hepatitis B (HBIG) & Varicella Zoster (VZIG)

Clinical Caveat: IVIG has no proven benefit in substantive trials as an adjunctive therapy for routine neonatal sepsis.



Hematology Protocol:
Isoimmune Haemolytic Anaemia (Jaundice)

Context

At-Risk Neonate: Rhesus (D, c, C, E, e), Kell, or Duffy incompatibility.

Intervention

Intensive Phototherapy Active (4 light sources at correct distance).

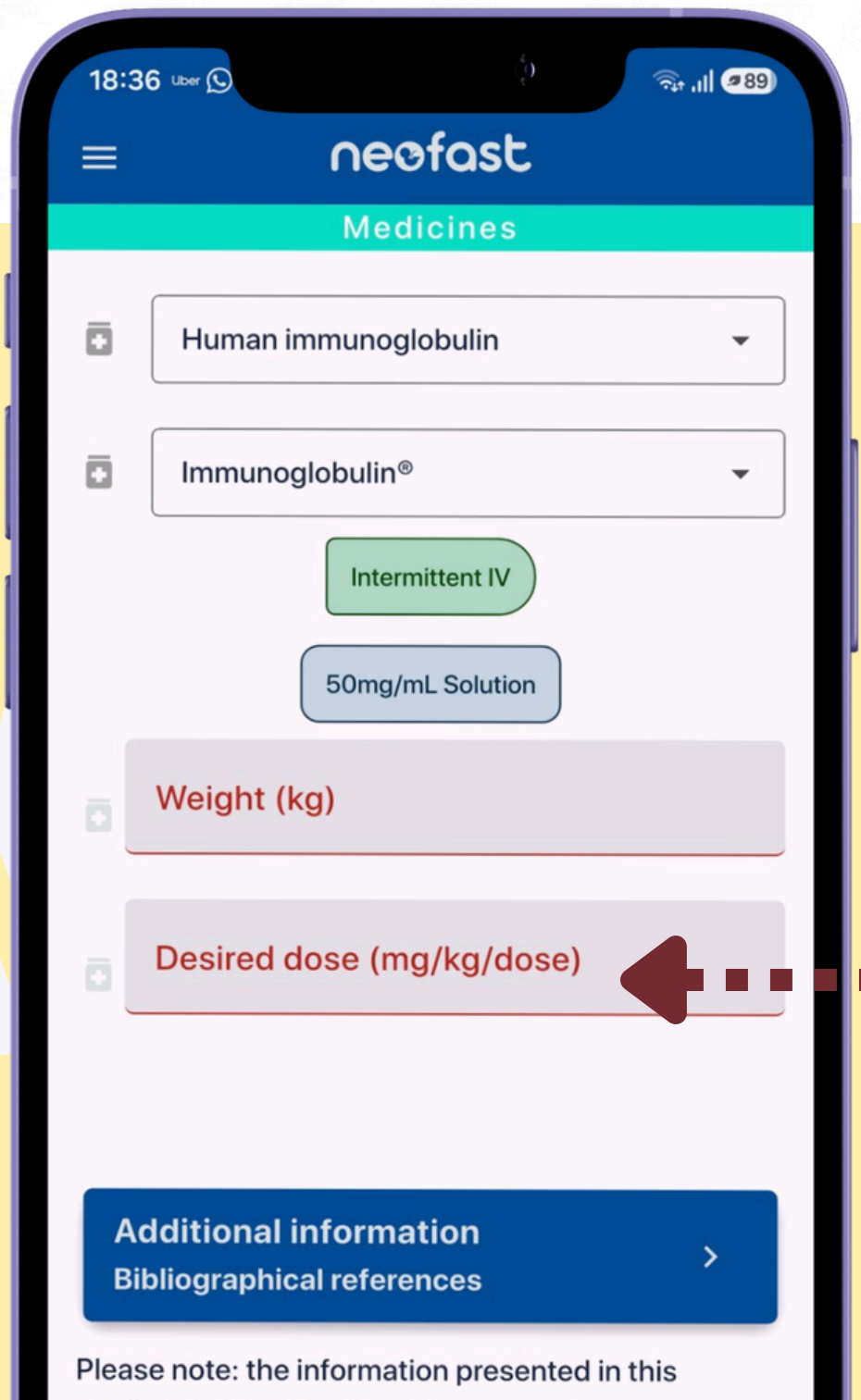
Is Bilirubin rising at >8.5 µmol/L per hour?
OR
Hb 100-120 g/L with rapidly rising bilirubin close to exchange levels.

Initiate Standard IVIG

500 mg/kg

Administered via IV over 4 hours.

Repeat Dose?
A single repeat dose can be given >12 hours later ONLY if bilirubin continues to rise rapidly.



neofast

Medicines

Human immunoglobulin

Immunoglobulin®

Intermittent IV

50mg/mL Solution

Weight (kg)
2

Desired dose (mg/kg/dose)
500

Suggested dose: 400 to 1000 mg/kg/dose

Human immunoglobulin Intermittent IV - 50mg/mL Solution	
Dose	1,000mg
Interval	AMD
Dose	20mL
Infusion rate	

Medicines

Human immunoglobulin Intermittent IV - 50mg/mL Solution	
Dose	1,000mg
Interval	AMD
Dose	20mL
Infusion rate	
30min	0.6mL
30min	1.2mL
30min	1.8mL
30min	3.6mL
1h50min	12.8mL

Note: the infusion rate used was 0.01 mL/kg/min for the first 30 min, followed by 0.02 mL/kg/min for the next 30 min and 0.03 mL/kg/day for another 30 minutes and ending with 0.06 mL/kg/min for the remainder of the dose (as recommended by the manufacturer). The recommended dose in neofax for isoimmune hemolytic disease is 0.5 to 1 g/kg/dose, which can be repeated in 12 hours AMD; neonatal alloimmune thrombocytopenia is 1 g/kg/dose IV every day for 2 doses and in measles exposure is 400 mg/kg/dose IV within 6 days of

Hematology Protocol:
Neonatal Allo-immune Thrombocytopenia (NAIT)

Context: Severe thrombocytopenia in an otherwise healthy term newborn is NAIT until proven otherwise.

Triggers for IVIG +/- steroids

Bleeding:
Platelet count < 50 x 10^9/L AND severe haemorrhage persists despite antigen-negative platelet transfusion.

Non-Bleeding:
Platelet count < 25 x 10^9/L (whether actively bleeding or not).

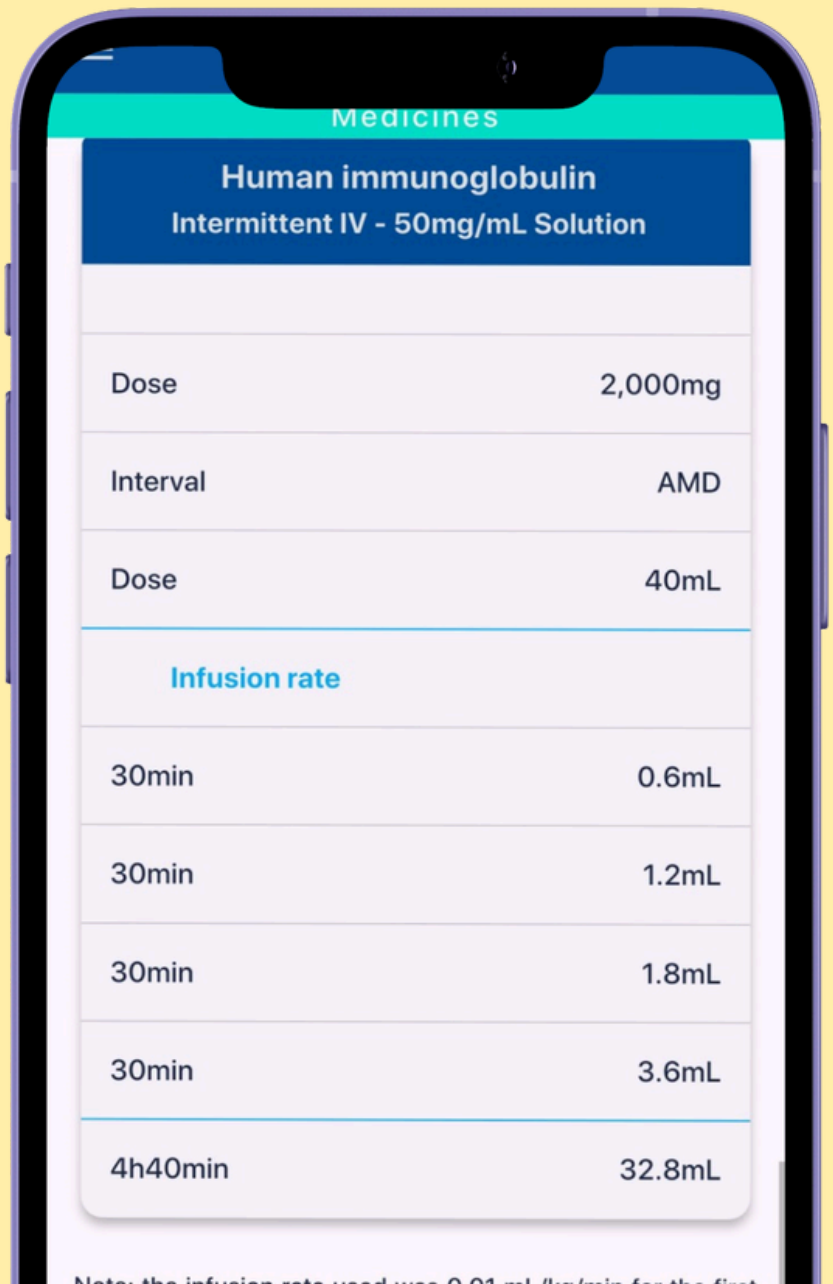
Dosing & Administration

1 g/kg/day

Route: IV

Duration: Once daily for 1 to 3 days.

Note: May require additional doses 2-4 weeks later due to persistence of maternal antibodies.



Infection Prophylaxis: Hepatitis B (HBIG)

HBIG must be administered within **24 hours** of **birth** (absolute maximum 7 days).

Given alongside Hep B Vaccine to:

- Low-birth-weight babies (<=1.5 kg) born to a Hep B positive mother (regardless of HBeAg status)
- Babies born to highly infectious mothers.

250 units IM

Procedural Note: Use 2 separate injection sites for the vaccine and HBIG. For LBW babies, the 250 unit HBIG dose can be divided into smaller amounts across different sites.

Infection Prophylaxis: Varicella Zoster (VZIG)

Exposure Type	Trigger	Timing	Dosing Box
Maternal Exposure	Mother develops chickenpox rash 7 days before to 7 days after birth.	Give ASAP (within 72 hours for antenatal exposure; within 10 days for postnatal).	**250 mg (~1.7 mL)** **Route: IV**
Non-Maternal Exposure	VZ IgG-negative babies exposed in the first 7 days, OR exposed babies requiring intensive/prolonged care (e.g., <28 weeks or <1 kg)	Give ASAP (within 10 days of exposure)	**Alternative Exception:** If VZIG is unavailable or IM is contraindicated, give 0.2 g/kg of standard IVIG (Note: this is less effective)

Synthesis:
The Bedside Immunoglobulin Matrix

	Indication	Product	Dose	Route	Timing / Duration
	Haemolytic Jaundice	Standard IVIG	500 mg/kg	IV (over 4 hrs)	Single dose (repeat >12h if needed)
	NAIT	Standard IVIG	1 g/kg/day	IV	Once daily for 1-3 days
	Hepatitis B Exposure	HBIG	250 units	IM	Within 24 hours of birth
	Varicella Exposure	VZIG	250 mg	IV	ASAP (within 72h to 10 days)

Crucial Aftercare & Follow-Up Protocols

Post-IVIG for Jaundice

- ✓ Mandatory ongoing neurodevelopmental follow-up.
- ✓ Audiology/Hearing test required.
- ✓ Check Hb every 2 weeks initially, and until 3 months of age (vital due to the risk of late anaemia).

Post-IVIG for NAIT

- ✓ Recheck platelet count 2 weeks post-discharge.
- ✓ Note: A subset of babies require a second course of IVIG if maternal antibodies persist.

Post-HBIG for Hep B

- ✓ Monitor babies <28 weeks' gestation for 72 hours post-administration.
- ✓ Strict respiratory monitoring required during this window to detect adverse cardiopulmonary events.

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