Louth: Antimicrobial Guidelines - Louth Hospitals: Antimicrobial Guidelines: Neonatal - Varicella Zoster Immunoglobulin (VZIG) IV

Neonatal - Varicella Zoster Immunoglobulin IV (Varitect® CP)

Human varicella-zoster immunoglobulin (VZIG) for intravenous use [1].

MEDICATION SAFETY ISSUES

- This monograph relates to VZIG for **intravenous** use (Varitect® CP) – the dose and administration of VZIG for intramuscular use is different, please check the product carefully.
- Varicella zoster immunoglobulin may be confused with varicella zoster live vaccine (Varivax®) [2].

USES

See NIAC Guidelines, Chapter on Varicella zoster, for definition of significant exposure to Varicella zoster virus and for full information on use of VZIG for post-exposure prophylaxis in neonates [3].

(https://www.rcpi.ie/Healthcare-Leadership/NIAC/Immunisation-Guidelines-for-Ireland).

VZIG is recommended for the following groups of neonates following significant exposure to varicella:

- Neonates who are exposed to varicella in mother from 7 days before to 7 days after delivery. Approximately half of these infants may develop varicella despite immunoprophylaxis, but the disease is usually modified. IV aciclovir treatment may occasionally be required. **These neonates must receive VZIG as early as possible in the incubation period, as neonatal mortality without VZIG is up to 30%.**
- VZ antibody-negative infants
  - exposed to varicella or zoster (other than in the mother) in the first 7 days of life.
  - of any age, exposed to varicella or zoster while requiring intensive or prolonged special care.

The NIAC Guidelines advise that the following infants may not have maternal antibodies despite a positive maternal history of varicella and should be tested to determine their VZ antibody status in the event of significant exposure to VZV – in the OLOL NICU, unless urgent testing can be performed, these infants should be given VZIG as soon as possible following discussion with parents:

- born at less than 28 weeks gestation
- weigh less than 1000g at birth
- infants 60 days of age or more still requiring intensive or prolonged special care nursing
- had repeated packed red cell infusions.

The NIAC Guidelines advise that immunocompromised contacts should be tested to determine their VZ antibody status in the event of significant exposure to VZV regardless of the history of varicella – in the OLOL NICU, unless urgent testing can be performed, these infants should be given VZIG as soon as possible following discussion with parents:

- Infants with immunodeficiency syndromes
- Infants receiving steroids
- Infants born to mothers receiving immunosuppressive treatment or therapeutic steroids (NOT including routine ante-natal steroids).

Other infants whose mothers have a positive history of varicella and/or VZV antibodies will usually have maternal antibodies and do not require VZIG.

VZIG is **not** indicated for full-term infants exposed to VZV (either varicella or zoster) more than 7 days after delivery or if exposure was more than 48 hours before onset of varicella or zoster rash in the index case.

People receiving monthly high-dose IV Human Normal Immunoglobulin (HNIG) are likely to be protected and may not need VZIG if they received the last dose of HNIG within three weeks before exposure.

PRESENTATION

Varitect® CP 25 units/mL solution for intravenous infusion [1].

DOSAGE [1,3]

Age	Dose	Frequency
Neonate	1mL/kg (25 units/kg)	STAT

ADMINISTRATION [1,3]

- Give by intravenous infusion at an initial rate of 0.1mL/kg/hour for 10 minutes.
- If well tolerated, the rate of administration may be gradually increased to a maximum of 1mL/kg/hour.
- Observe patient for infusion-related reactions during the infusion and for 1 hour after infusion.

SAMPLE CALCULATION

Newborn 3.2kg neonate exposed to varicella in the mother within 7 days before delivery.

Dose: 1mL/kg = 3.2mL. Give by IV infusion at initial rate of 0.32mL/hour for 10 minutes. If well tolerated, gradually increase rate of IV infusion to a maximum of 3.2mL/hour.

STORAGE [1]

Keep container in the outer carton. Store in a refrigerator between 2 ^{o} C and 8 ^{o} C.

MONITORING [1]

- Observe patient for infusion-related reactions – in the case of adverse reaction, either reduce the rate of administration or stop the infusion, depending on severity.
- Cases of acute renal failure have been reported in patients receiving IVIG therapy. Ensure adequate hydration prior to IVIG initiation, monitor renal function and avoid concomitant use of loop diuretics.

ADVERSE EFFECTS [1,3]

- N.B. - The efficacy of live virus vaccines may be impaired for up to 3 months.
- Adverse reactions such as chills, headache, fever, vomiting, allergic reactions, nausea, arthralgia, low blood pressure and moderate low back pain may occur occasionally.
- Rarely, a sudden fall in blood pressure and, in isolated cases, anaphylactic shock.
- Cases of reversible aseptic meningitis, isolated cases of reversible haemolytic anaemia/haemolysis and rare cases of transient cutaneous reactions, have been observed.
- Increase in serum creatinine level and/or acute renal failure have been observed.
- Very rare cases of thromboembolic reactions such as myocardial infarction, stroke, pulmonary embolism, deep vein thromboses have been observed.
- Cases of Transfusion Related Acute Lung Injury (TRALI).

REFERENCES

1. Biotest Pharma. Summary of Product Characteristics for Varitect® CP, October 2019. On file in Pharmacy Department, OLOL.
2. Varicella zoster immune globulin (human): Drug information. Available from www.uptodate.com , accessed 19/9/24.
3. National Immunisation Advisory Committee. Immunisation Guidelines for Ireland, Chapter 23, Varicella Zoster, updated Oct 2022. Available from https://www.rcpi.ie/Healthcare-Leadership/NIAC/Immunisation-Guidelines-for-Ireland .