Acknowledgement

This guideline was originally developed by KidzFirst, South Auckland Health and has been adapted for use at Starship Children's Hospital.

Introduction

Zoster Immunoglobulin (ZIG) is a high titre immunoglobulin extracted from donors. It is used in the passive prevention of varicella infection in high risk individuals.

The decision to whether to give ZIG or not is based on three factors:

1. The likelihood that the exposed person is susceptible to varicella.
2. The probability that a given exposure to varicella will result in infection.
3. The likelihood that complications will develop if the person is infected.

Significant Contact

1. Household contact – Infection is very likely to occur in a susceptible individual living with an infected contact.
2. Playmate contact - More than one hour of play indoors with infected individual.
3. Newborn infant contact – Mother of neonate develops chicken pox (not shingles) seven days before to seven days after delivery.
4. Hospital contact - In same two bed room or face to face contact >5 minutes.
Which Children are at Risk?

Susceptible individuals who are likely to develop serious varicella infection and complications include the following:

**Paediatric:**

1. Those receiving high dose corticosteroid therapy (>0.5 mg/kg/day of Prednisone or equivalent within the last three months).
2. Children receiving immunosuppressive therapy or chemotherapy.
3. Children with malignancy.
5. HIV positive without history of chickenpox.

**Neonatal:**

See the following Newborn Services Clinical Guidelines:

1. Neonates whose mothers develop chicken pox <7 days before or up to 7 days after delivery.
2. Preterm infants <28 weeks or <1000 g, regardless of maternal history.
3. Preterm infants >28 weeks whose mothers have not had chickenpox. If mother unsure of past history of chickenpox then serological testing should be done.
4. ZIG given to mother within five days of delivery may not protect the infant and the infant should be given ZIG on delivery. The child may also need to be treated with acyclovir.
5. Maternal varicella is not a contraindication to breast feeding. If a baby’s siblings have chickenpox, the baby should be given ZIG if the mother is non-immune, but the baby does not need to be separated from mother or siblings.

Non immune pregnant women and any immunocompromised adults and adolescents are also important risk groups who require prophylaxis when assessing contacts of a varicella case.
Administration of ZIG

ZIG should be given as soon as possible after exposure and can be given up to 10 days after exposure in a patient at high risk.

ZIG available from the New Zealand Blood Service is manufactured by CSL in Melbourne from New Zealand donors. It should be given IM, never IV.

Dosing:

<table>
<thead>
<tr>
<th>Weight of patient (kg)</th>
<th>Dose (IU)</th>
<th>No. of vials</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 10</td>
<td>125</td>
<td>1</td>
</tr>
<tr>
<td>10.1 – 20</td>
<td>250</td>
<td>2</td>
</tr>
<tr>
<td>20.1 – 30</td>
<td>375</td>
<td>2</td>
</tr>
<tr>
<td>30.1 – 40</td>
<td>500</td>
<td>3</td>
</tr>
<tr>
<td>Over 40</td>
<td>600</td>
<td>3</td>
</tr>
</tbody>
</table>

The duration for which ZIG recipients are protected against varicella is unknown. If a second exposure occurs more than three weeks after administration of ZIG in a recipient in whom varicella did not develop, another dose of ZIG should be given.

Obtaining ZIG at Starship Children’s Health

ZIG is available from the Blood Bank but must be discussed with the Haematologist on call. It can be requested by filling out a yellow request for blood products form. If not available (for supply reasons) intravenous immunoglobulin can be given (dose to be advised by haematologist on call for Blood Bank)

References


Burnett I. Immunoglobulin should be given if steroid dose was 0.5mg/kg/day in preceding three months. BMJ 1995;310:327.


Management of Perinatal Infections Guidelines from the Australasian Society of Infectious Diseases 2002