FAQs
Preventing measles in non-immune contacts with human normal immunoglobulin (HNIG)[1]

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What is human normal immunoglobulin (HNIG)?

Normal Human immunoglobulin (also called normal immune globulin*)* is a concentrated antibody-containing solution prepared from plasma obtained from normal donors. It consists primarily of the antibody Immunoglobulin G (IgG), although small amounts of IgA, IgM, and other serum proteins may be present. The plasma of the donors is treated to prevent transmission of viruses (e.g. hepatitis B or C, HIV). The product is stable for many months if stored at 4°C. A number of IG products are available which are given either intramuscularly (IM), subcutaneously (SC) or intravenously (IV). Because maximal serum antibody levels may not occur until about 48 hours after IM injection, if giving an IM or SC preparation IG must be given as soon after exposure as possible. The protection offered by HNIG lasts about 3 weeks.

When is human normal immunoglobulin used to prevent measles?

Immunoglobulins are special concentrated antibody preparations which provide immediate short-term protection against disease for individuals who are at high risk of experiencing severe disease or of developing serious complications from the disease.

HNIG can be used to provide rapid protection against measles for those individuals who do not already have antibodies to measles.

Does everyone need HNIG?

No- HNIG is only recommended for those individuals who are not already immune to measles (never had measles, never vaccinated) AND are at high risk of complications associated with measles infection.

What type of people need HNIG after a measles exposure? [1]

The following children and adults who come in to contact with measles should be considered for treatment with human normal immunoglobulin (HNIG):

1. Those with compromised immunity
2. Infants aged 5-12 months (those aged under 5 months will usually have maternal antibodies). MMR vaccine may be preferable for some children aged 6 months of age as it will provide longer term protection from measles than HNIG.
3. Infants of mothers who develop measles, as such infants will not have maternally derived antibodies
4. Non immune pregnant women. As most pregnant women are likely to be already immune to measles, measles IgG should be checked (serological testing) only if the woman has no previous history of measles infection and has not had two MMR vaccinations. HNIG can be offered to non-immune pregnant women. They should also be offered MMR vaccine after delivery, as least 3 months after receiving HNIG

When is HNIG given after measles exposure?

To prevent measles HNIG should be given as soon as possible after exposure (ideally within 72 hours post exposure but can be given within 6 days). After this time HNIG is unlikely to offer substantial benefit in immunocompetent individuals.

Can HNIG be given without laboratory conformation of measles in the index case?

Yes, but only after risk assessment.

Administration of HNIG should not wait for laboratory confirmation of measles in the index case, but a complete risk assessment should be undertaken prior to administration the HNIG.

Timing of administration of HNIG for intramuscular (IM) or subcutaneous use (SC), or IVIG

HNIG is most effective if given **within 72 hours** of exposure, but may still be effective if given within 6 days. Where exposure is recognised late, IVIG is likely to provide higher levels of measles antibodies more quickly than an intramuscular or subcutaneous product.

For immunosuppressed individuals, administration should not be delayed (e.g. whilst awaiting test results) beyond 3 days of exposure if at all possible. However, for this group, IVIG may still be considered beyond six days (up to 18 days after exposure) as it may attenuate infection. Discussion with the specialist caring for the individual should take place to guide management decisions.

Where a second exposure occurs more than three weeks after a first dose of HNIG, a further dose should be given.

What HNIG products are available in Ireland, and how do we order them?

HNIG products for intramuscular, subcutaneous or intravenous use are available in Ireland. The product used will be determined usually by product availability and the quantity that is required.

HNIG products for intramuscular administration

There are two HNIG products available in Ireland for SC or IM use in Ireland, **Subgam** (licensed in UK,SC or IM use) and **Subcuvia** (licensed in Ireland, SC recommended) either can be used for measles post exposure prophylaxis. These items are available with 24 hrs (working day). Clinicians are advised to contact their local hospital pharmacist to organise supply of this product, which must be maintained in the cold chain until administration. Although licensed, these products are not specifically licensed for use for measles prophylaxis.

Where can I find additional information relating to the HNIG products which are used in Ireland (for intramuscular administration)?

Detailed information relating to HNIG can be found for each product in the document Summary of Product Characteristics (SPCs), and can be obtained by clicking on the product name: **Subgam** or **Subcuvia.**

What is the difference between HNIG used for IM or SC administration and products only for intravenous (IV) administration ?

Although both products contain human normal immunoglobulin they are administered differently. The manufacturer's instructions on administration should be followed.

What dose of HNIG is recommended for measles prophylaxis?

Based on recent work done on products available in the UK it is now considered unlikely that the previously recommended doses of intramuscular HNIG are fully protective. The following doses of HNIG are now recommended in the UK and Ireland

- Infants under 1 year of age 0.6 ml/kg up to a maximum of 1 vial (5 ml)
- Pregnant women 2250 mg (3 vials; 15 mls)

If HNIG for IM or SC administration is not available an IVIG product may be used for high risk individuals (for those with immunocompromising conditions) and should be administered following manufacturer's guidance.

HNIG for Immunosuppressed patients:

The products should be administered by infusion according to manufacturer's instructions in the hospital setting. Consult the product literature for information about administration. Consult with the clinician caring for the patient.

The protective doses required for immunosuppressed patients will probably only be possible to administer by either intravenous or subcutaneous infusion. A minimum protective dose of approximately 11 IU/kg measles antibody, should there be achievable using the following doses of any available product

- 0.6 ml/kg of subcutaneous normal immunoglobulin or
- 0.15 g/kg of intravenous normal immunoglobulin (IVIG)

Subcutaneous or intravenous products should be procured through the hospital pharmacy.

The products should be administered by infusion according to manufacturer's instructions.

Do individuals on maintenance IVIG need HNIG following measles exposure?

Not usually - Individuals on maintenance IVIG who are contacts of a measles case do not need either HNIG or IVIG if they have been given IVIG within 3 weeks prior to exposure. Consultation with clinician looking after the patient is recommended.

References

1. Immunisation Guidelines for Ireland. 2008 Edition. Royal College of Physicians of Ireland. National Immunisation Advisory Committee
2. Post Exposure prophylaxis for measles: revised Guidance May 2009 HPA. Available at http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1238565307587