South Australian Perinatal Practice Guidelines

Measles and measles contacts in pregnancy

Note

This guideline provides advice of a general nature. This statewide guideline has been prepared to promote and facilitate standardisation and consistency of practice, using a multidisciplinary approach. The guideline is based on a review of published evidence and expert opinion.

Information in this statewide guideline is current at the time of publication.

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Health practitioners in the South Australian public health sector are expected to review specific details of each patient and professionally assess the applicability of the relevant guideline to that clinical situation.

If for good clinical reasons, a decision is made to depart from the guideline, the responsible clinician must document in the patient's medical record, the decision made, by whom, and detailed reasons for the departure from the guideline.

This statewide guideline does not address all the elements of clinical practice and assumes that the individual clinicians are responsible for discussing care with **consumers** in an environment that is culturally appropriate and which enables respectful confidential discussion. This includes:

- The use of interpreter services where necessary,
- Advising consumers of their choice and ensuring informed consent is obtained,
- Providing care within scope of practice, meeting all legislative requirements and maintaining standards of professional conduct, and
- Documenting all care in accordance with mandatory and local requirements

Measles

> The measles (rubeola) virus is a single-stranded RNA virus of the family Paramyxoviridae. Humans and monkeys are the only known hosts. There are no carrier states

> Measles is a highly infectious, acute viral illness that is notifiable

> The appropriate communicable disease notification form for report of notifiable disease or related death in South Australia may be downloaded and is available from SA Health website: http://www.health.sa.gov.au/pehs/PDF-files/2008-case-reporting-form.pdf

> This form is not to be sent by email for reasons of confidentiality

> Notification should be made to the Communicable Disease Control Branch as soon as practicable and at least within 3 days of suspicion of diagnosis: Telephone (08) 8226 7177 or Facsimile (08) 8226 7187 (Department of Health 2008)

Clinical features

Initially:

> Fever

> Cough

> Coryza (inflammation of the mucous membranes of the nose)

> Conjunctivitis

> Koplik's spots (white spots, each surrounded by a red ring, found on the buccal mucosa)

3 -5 days later:

> Maculopapular rash initially on face and upper neck, then becomes generalised (NHMRC 2008)

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Measles and measles contacts in pregnancy

Route of transmission

- Respiratory airborne droplet transmission
- Rarely by means of articles soiled with respiratory secretions

Incubation period

- The usual interval between exposure to measles and onset of first symptoms (prodome) is 10 to 14 days, with the rash occurring 2 to 4 days later (NHMRC 2008)

Period of infectivity

- Measles is infectious from the beginning of the prodromal period until 4 days after the onset of the rash (NHMRC 2008)

Infection precautions

- Additional precautions (single negative pressure room with own toilet facilities,dedicated equipment, N95 mask,) should be used when caring for a woman / baby suspected of measles infection
- Only staff with known measles immunity should care for women / babies with suspected or proven measles

Literature review

- Measles is the most communicable disease of childhood, which led to high levels of immunity in women of reproductive age in the pre-immunisation era
- Widespread childhood immunization programs (in 1999, 91 % of the general population aged between 12 – 18 years were immune) in Australia have further reduced the incidence of measles during pregnancy (NHMRC 2008)
- Women who contract measles during pregnancy have increased rates of:
    - Preterm labour
    - Spontaneous abortion
    - Fetal / neonatal loss
    - Maternal complications
    - Maternal mortality
    - (Walling 1998; Chiba et al. 2003)
- Measles is often a severe disease and may be complicated by otitis media (7 %) or bronchopneumonia (6 %) in the general population (NHMRC 2008)
- Acute encephalitis occurs in between 2 and 10 per 10,000 reported cases in the general population, with an associated mortality rate of 10 – 15 %. Around 15 – 40 % of survivors will have permanent brain damage (NHMRC 2008)

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Maternal exposure

> Exposure to measles includes any face-to-face contact with someone with measles during the contagious interval

Immunity

> Any non-immunocompromised individual with a definite positive history of measles disease, measles vaccination (MMR vaccine), or positive measles antibody test is considered to be immune

Prevention

> Since immunisation with live vaccines such as the Measles Mumps Rubella (MMR) vaccine is usually contraindicated in pregnancy, normal human immunoglobulin (NHIG) in a dose of 0.2 mL / kg may be administered by intramuscular injection to non-immune women exposed to measles up to 7 days following contact with measles

Maternal management

> Serology for measles antibody (perform before vaccination or administration of NHIG)

> Administer NHIG to measles antibody negative women who are immuno-compromised. If antibody testing is not available for 72 hours (weekend), administer before results are received

> Testing for measles antibody in immuno-compromised individuals should not be used to guide decisions, since neither previous vaccination nor probably previous infection guarantees immunity to measles. These individuals should be given NHIG

Postnatal care

> Women who develop measles in the postnatal period require additional precautions including:

> A single negative pressure room with own toilet facilities

> Dedicated equipment

> All staff should wear a N95 mask

> Babies of women who develop measles in the postnatal period should be isolated separately and given prophylactic NHIG

Management of contacts

Neonates or infants less than 12 months of age

> This group is at high risk of developing complications from measles infection if they have not acquired maternal antibodies from a measles-immune mother

> NHIG should be administered to infants of non-immune mothers as early as possible, and at the latest within 7 days of potential exposure

> NHIG should be administered to pre-term neonates (< 37 weeks) regardless of maternal history or antibody status

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Non-immunosuppressed non-vaccinated people over 1 year of age

> Consider MMR vaccination within 72 hours of exposure for all non-immune in-patient contacts

Individuals in whom protection is desirable, but live vaccination is contraindicated

> Pregnant women and immuno-compromised children (or adults) should not be administered live vaccine. Administer NHIG as early as possible and at least within 7 days of exposure

Care of in-hospital contacts

> Any contact not known to be immune, who is admitted or within the hospital during the potentially contagious period of measles (i.e. 10 to 19 days after exposure) should be cared for in single-room isolation

> NHIG may not always prevent measles but instead increase the severity of the disease, and increase the incubation period to 21 days. Therefore contacts given NHIG should be isolated from day 10 to day 21 if still within the hospital

Management of staff with suspected or proven measles

> Contact risk management services (where available)

> Staff should be excluded from work until they are no longer contagious, i.e. 4 days after the onset of the rash

Exposure to Measles

> Staff should advise Infection Control and Risk Management (where available) as soon as possible after exposure

> Ascertain the immune status of the staff member. A staff member is immune if she / he has a definite history of measles disease or of MMR vaccination, or is known to be positive for measles antibody

> If the immune status is unknown or uncertain, serology for measles antibody (IgG) should be obtained

Known immunity to measles

> No action is required

Measles non-immune staff

> Measles non-immune staff should be excluded from work for the potentially contagious period of measles (i.e. 10 to 19 days after exposure), and should advise risk management if they develop measles

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3. Walling AD. Seroprevalence of the rubeola antibody in pregnant women. Am Family Physician 1998; 57: 2233-34 (Level III-3).
4. Chiba ME, Saito M, Suzuki N, Honda Y, Yaegashi N. Measles infection in pregnancy 2003; 47: 40-44 (Level IV).
5. Rosa C. Rubella and rubeola. Seminars in Perinatology 1998; 22: 318-322 (Level IV).

Useful web sites:

SA Department of Health: You've got what – measles
http://www.dh.sa.gov.au/pehs/ygw/index.htm#M

Centers for disease control and prevention (CDC).
Available from URL:
http://www.cdc.gov/measles/about/overview.html

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Abbreviations

i.e.	That is
kg	Kilogram(s)
mg	Milligram(s)
mL	Millilitre(s)
MMR	Measles Mumps Rubella
NHIG	Normal human immunoglobulin
%	Percent
RNA	Ribonucleic acid

Version control and change history

PDS reference: OCE use only

Version	Date from	Date to	Amendment
1.0	26 July 04	03 Mar 09	Original version
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