South Australian Paediatric Clinical Guidelines

Coxsackie (hand, foot and mouth disease)

The 'Management of Perinatal Infections' guideline for Enterovirus in pregnancy by the Australasian Society for Infectious Diseases 2002, emendations 2006 has been used to inform this practice guideline.

Enteroviruses

- Enterovirus infections of multiple strains circulate in the community (Gilbert 2002)
- All human enteroviruses with complete or partial sequence data from the coding region fall into four clusters:
    - Poliovirus-like (C-cluster)
    - Enterovirus 70-like (D-cluster)
    - Coxsackievirus B-like (B-cluster)
    - Coxsackievirus A-like (A-cluster)
- The C-cluster includes coxsackieviruses A1, A11, A13, A15, A17 through A22, A24 and polioviruses 1 through 3
- The D-cluster contains enteroviruses 68 and 70
- The B-cluster contains coxsackieviruses A9, B1, B3 through B5, enterovirus 69, and echoviruses 1, 4,6,7,11,12, 27, and 30
- The A-cluster contains coxsackieviruses A2, A3, A5, A7, A8, A10, A12, A14, A16, and enterovirus 71 (Cherry 2011)

Coxsackievirus

- Coxsackievirus A16 infection is the usual cause of hand, foot and mouth disease

Clinical features

- Non-specific fever
- Exanthem
- Lymphonodular pharyngitis
- Epidemic conjunctivitis
    - Myositis

Incubation period

- 4 to 6 days from the time of the beginning of symptoms

Route of transmission

- Person to person by faecal – oral and possibly oral – oral (respiratory) routes
- Swimming and wading pools may serve as a means of spread in summer months
- Contaminated hands of health care personnel and transmission by fomites

Infection precautions

- Standard precautions
- In particular, enteric precautions

ISBN number: 978-1-74243-091-1
Endorsed by: South Australian Paediatric Clinical Guidelines Reference Committee. South Australian Child Health Clinical Network
Contact: South Australian Paediatric Clinical Guidelines Reference Committee: cywhs.paediatricclinicalguidelines@health.sa.gov.au

Government of South Australia
SA Health

Coxsackie (hand, foot and mouth disease)

Literature review

- Enteroviruses have a world-wide distribution with the incidence peaking in the spring / summer months in non-tropical or temperate regions of Australia (Palasanthiran et al. 2002)
- Perinatal transmission of enteroviruses is rare
- There is no definitive evidence for either ascending infection or contact infection with enteroviruses during birth (Cherry 2011)
- There are no available data on indicators of perinatal transmission risks or predictors of fetal or infant damage. However, abortion, congenital abnormalities, stillbirth, symptomatic infant and normal infant has been reported following enterovirus infections (Palasanthiran et al. 2002)

Maternal diagnosis

Features consistent with enterovirus infection

- Serology (very insensitive, very specific)
- Polymerase chain reaction (PCR) (variable sensitivity)
- Positive serology indicates infection. Negative results do not exclude infection due to poor sensitivity
- Viral culture (nasopharynx or throat swab and faeces) (varying sensitivity and specificity) [Virus isolation is no longer offered by SA Pathology (IMVS)]
- Sensitivity to viral culture varies depending on the sample obtained. Culture has a high specificity but due to prolonged shedding in faeces a positive enteroviral culture may be misleading and not indicate a current enteroviral infection

Maternal management

- Usually symptomatic treatment
- Educate about good hygiene practices to prevent faecal – oral transmission especially if in contact with a source case

Neonatal diagnosis and management

- Records of neonatal illnesses associated with coxsackieviruses A are rare (Cherry 2011)
- The major diagnostic problem is the differentiation of bacterial from viral disease (Cherry 2011)

Symptoms and signs of an infected infant

- Mild, non-specific febrile illness
- Vomiting and diarrhoea
- Vesicular lesions or rash illness have not been described in neonates with Coxsackievirus A16 (Cherry 2011)

ISBN number: 978-1-74243-091-1
Endorsed by: South Australian Paediatric Clinical Guidelines Reference Committee. South Australian Child Health Clinical Network
Contact: South Australian Paediatric Clinical Guidelines Reference Committee: cywhs.paediatricclinicalguidelines@health.sa.gov.au

Coxsackie (hand, foot and mouth disease)

Diagnosis

- The most important factors in clinical diagnosis are season of the year, geographic location, exposure, incubation period, and clinical symptoms
- Serology
- Polymerase chain reaction (PCR) (nasopharyngeal aspirate, throat, rectal swabs, faeces, blood, urine, CSF)
- Viral culture [Virus isolation is no longer offered by SA Pathology (IMVS)]

Management

- Supportive care
- Appropriate counselling for parents
- Polio vaccine, IVIG may be of benefit if < 6 weeks preterm (no supporting data)

Follow up

- As clinically indicated

References

1. Gilbert GL. Infections in pregnant women. MJA 2002; 176: 229-236.
2. Cherry JD. Enteroviruses. In Remington JS, Klein JO, Wilson CB, Nizet V, Maldonado, YA. editors. Infectious diseases of the fetus and newborn infant. 7th ed. Philadelphia: WB Saunders; 2011.
3. Palasanthiran P, Starr M, Jones C, editors. Management of perinatal infections. Sydney: Australasian Society for Infectious Diseases (ASID); 2002, emendations 2006.

Useful references

You've got what: Hand foot and mouth disease. Available from URL: http://www.dh.sa.gov.au/pehs/ygw/handfootmouthdisease-pehs-sahealth-2009.pdf

Centers for disease control and prevention (CDC).
Available from URL:
http://www.cdc.gov/ncidod/dvrd/revb/enterovirus/hfhf.htm

CDC questions and answers – Available from URL:
http://www.cdc.gov/ncidod/dvrd/revb/enterovirus/hfmd-qa.htm

ISBN number: 978-1-74243-091-1
Endorsed by: South Australian Paediatric Clinical Guidelines Reference Committee. South Australian Child Health Clinical Network
Contact: South Australian Paediatric Clinical Guidelines Reference Committee: cywhs.paediatricclinicalguidelines@health.sa.gov.au

Government of South Australia
SA Health

Coxsackie (hand, foot and mouth disease)

Abbreviations

ASID	Australasian Society for Infectious Diseases
CSF	Cerebrospinal fluid
et al.	And others
IVIG	Intravenous immune globulin
PCR	Polymerase chain reaction

Version control and change history

PDS reference: OCE use only

Version	Date from	Date to	Amendment
1.0	27 April 04	15 Dec 08	Original version
2.0	15 Dec 08	08 Jan 13	Reviewed
3.0	08 Jan 13	Current	

ISBN number: 978-1-74243-091-1
Endorsed by: South Australian Paediatric Clinical Guidelines Reference Committee. South Australian Child Health Clinical Network
Contact: South Australian Paediatric Clinical Guidelines Reference Committee: cywhs.paediatricclinicalguidelines@health.sa.gov.au

Government of South Australia
SA Health