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**INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

WS 588-2018

**Diagnosis for hand, foot and mouth disease
(English Translation)**

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- 50 MM MgCl₂ 1.5 μL

Foreword

Chapter 6 of this standard is mandatory and the rest are recommended.

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard was drafted. Beijing Ditan Hospital affiliated to Capital Medical University, China Center for Disease Control and Prevention, and affiliated to Capital Medical University Beijing Children's Hospital, China Center for Disease Control and Prevention, Institute of Viral Disease Prevention and Control.

1 Scope

This standard specifies the diagnosis basis, diagnosis principle, diagnosis and differential diagnosis of hand, foot and mouth disease.

This standard is applicable to the diagnosis of foot and mouth disease of various medical and health institutions at all levels and their medical staff.

2 Terms and definitions

The following terms and definitions apply to this document.

Hand, foot and mouth disease Acute infectious diseases caused by enteroviruses such as human enterovirus 71 (EV-A71) and coxsackievirus group A (CV-A16) are more common.

For preschool children. Severe cases are mostly caused by EV-A71 infection.

3 Abbreviations

The following abbreviations apply to this document.

CPE. cytopathic effect CV-A16. Coxsackievirus A group 16 (coxsackievirus A16) cDNA. Complementary DNA dNTP. deoxy-ribonucleotide triphosphate EDTA. ethylenediaminetetraacetic acid ELISA. enzyme-linked immunosorbent assay EV-A71. human enterovirus type 71 (human enterovirus A71) HEPES. 4-Hydroxyethylpiperazineethanesulfonic acid buffer Hep-2. human laryngeal carcinoma epithelial cells IgG. immunoglobulin G (immunoglobulin G) IgM. immunoglobulin M (immunoglobulin M) MEM. Eagle's minimum essential medium OPD. o-phenylenediamine RD. human rhabdomyosarcoma cells RT-PCR. reverse transcription-polymerase chain reaction TMB. 3,3',5,5'-tetramethylbenzidine Vero. African Green Monkey Kidney Cells

4.1 Epidemiological characteristics

It can be ill all year round and has seasonal distribution characteristics. The main peaks in spring and summer and the peaks in autumn and winter can occur in the south.

It is popular in summer and autumn, especially in summer. Enterovirus is highly contagious, has a large proportion of latent infections, has a complicated transmission route, and has a fast spread speed.

In the meantime, a wide range of epidemics can be caused. During the epidemic period, clustering or outbreaks can occur in kindergartens,, and families.

4.2 Clinical manifestations

The incubation period is generally 2 d to 10 d, with an average of 3 d to 5 d.

Acute onset, fever, maculopapular rash, herpes on the hands, feet and buttocks, scattered herpes in the oral mucosa or pharyngeal isthmus. May be accompanied by coughing, Flowing, loss of appetite, diarrhea and other symptoms.

Some cases are only manifested as rashes of the hands, feet and buttocks and/or herpes

of the pharynx. In a few cases, the rash is not typical, showing a small sand-like shape.

A rash, a single-site rash, or no rash.

A small number of cases can affect the central nervous system, manifested as meningitis, encephalitis, encephalomyelitis, and even pulmonary edema, pulmonary hemorrhage and/or Circulatory dysfunction, etc., the disease progresses rapidly and can cause death.

4.3.1.1 Blood routine

White blood cell counts are normal or decreased, and white blood cell counts can be elevated in severe and critical cases.

4.3.1.2 Blood sugar

Critical cases can be raised.

4.3.1.3 Cerebrospinal fluid

Central nervous system involvement often manifests as. clear appearance, increased pressure, increased white blood cell count, mostly mononuclear cells, protein Normal or mild increase, sugar and chloride are normal.

4.3.2 Serology and pathogen examination

4.3.2.1

Detection of enterovirus IgM antibodies such as EV-A71 or CV-A16 in serum or cerebrospinal fluid by ELISA or the like (see Appendix A).

4.3.2.2

ELISA, neutralization test and other methods to detect EV-A71 or CV-A16 and other enterovirus IgG antibodies in the serum, recovery period Serum was ≥ 4 fold higher than the acute phase or negative for acute phase antibody and positive for antibody during recovery.

4.3.2.3

From the patient's nasopharyngeal swab, anal swab, feces, herpes fluid, cerebrospinal fluid or corpse by RT-PCR, fluorescence quantitative RT-PCR, etc.

Enterovirus-specific nucleic acids such as EV-A71 or CV-A16 were detected in the specimens (see Appendix B).

4.3.2.4

Using nasopharyngeal swabs, anal swabs, feces, herpes fluid, cerebrospinal fluid or autopsy specimens with cell lines such as RD, HEp-2 or Vero for virus culture, enteroviruses such as EV-A71 or CV-A16 can be isolated (see Appendix C).

5 Diagnostic principles

5.1

Clinical diagnosis and classification can be made based on clinical manifestations and general laboratory findings. Epidemiological data can be used as a reference.

5.2

The diagnosis requires a positive result related to the etiology and serological tests of hand, foot and mouth disease.

6.1 Clinical diagnosis cases

Meets 4.2 and excludes other related diseases.

6.2 Confirmed cases

Clinically diagnosed cases and have one of 4.3.2.

6.3.1 Ordinary type

Hand, foot, buttocks rash, oral mucosal herpes, with or without fever.

6.3.2 Heavy duty

There are manifestations of central nervous system involvement, such as. mental disability, lethargy, convulsions,; headache, vomiting; limb shaking, myoclonus, Ocular tremor, ataxia, ocular dyskinesia; weakness or acute flaccid paralysis; convulsions. Visible meningeal irritation, reduced sputum reflex or disappear. Laboratory tests can have elevated white blood cells and blood sugar.

6.3.3 Critical

In severe cases, one of the following occurs.

- a) frequent central nervous system damage such as convulsions, coma, and cerebral palsy;
- b) respiratory dysfunction, bloody foam sputum, purpura and other respiratory dysfunction;
- c) Circulatory dysfunction such as skin spots, cold limbs, markedly increased heart rate, and marked rise or fall in blood pressure.

7.1 Other rash diseases

The common type of hand, foot and mouth disease should be differentiated from diseases such as papular urticaria, chickenpox, atypical measles, childhood acute rash, herpes zoster and rubella.