



APPENDIX

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่

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APPENDIX A

CDC Classification System for HIV Infection in Children

Redirected from 1994 Revised CDC Classification System for HIV Infection in Children

Due to the additional knowledge of the progression of HIV disease among children, a revised classification system for HIV infection in children was developed in 1994 and replaced the pediatric HIV classification system that was published in 1987. A child for the purposes of the CDC is an individual of less than 13 years of age. For this reason, standard anti-HIV IgG antibody tests cannot be used to reliably indicate a child's infection status before 18 months of age. So, viral antigen tests are used.

In the new system, HIV-infected children are classified into mutually exclusive categories according to three parameters:

- a) Infection status
- b) Clinical status
- c) Immunologic status

This classification system reflects the stage of the child's disease, establishes mutually exclusive classification categories, and balances simplicity and medical accuracy in the classification process. This document also describes revised pediatric definitions for two acquired immunodeficiency syndrome-defining conditions.

When an infant is born to an HIV-infected mother, diagnosis of an HIV-infection is complicated by the presence of maternal anti-HIV IgG antibody, which crosses the placenta to the fetus. Indeed, virtually all children born to HIV-infected mothers are HIV-antibody positive at birth, although only 15%-30% are actually infected.

CDC Classification System for HIV Infection in Children can be classified into 4 categories:

- 1 Category N: Not symptomatic
- 2 Category A: Mildly symptomatic
- 3 Category B: Moderately symptomatic

4 Category C: Severely symptomatic

Category N: Not symptomatic

Children who have no signs or symptoms considered to be the result of HIV infection or who have only one of the conditions listed in Category A.

Category A: Mildly symptomatic

Children with two or more of the conditions listed below but none of the conditions listed in Categories B and C.

- Lymphadenopathy (≥ 0.5 cm at more than two sites; bilateral = one site)
- Hepatomegaly
- Splenomegaly
- Dermatitis
- Parotitis
- Recurrent or persistent upper respiratory infection, sinusitis, or otitis media

Category B: Moderately symptomatic

Children who have symptomatic conditions other than those listed for Category A or C that are attributed to HIV infection. Examples of conditions in clinical Category B include but are not limited to:

- Anemia (< 8 gm/dL), neutropenia ($< 1,000/\text{mm}^3$), or thrombocytopenia ($< 100,000/\text{mm}^3$) persisting ≥ 30 days
- Bacterial meningitis, pneumonia, or sepsis (single episode)
- Candidiasis, oropharyngeal (thrush), persisting (> 2 months) in children > 6 months of age
- Cardiomyopathy
- Cytomegalovirus infection, with onset before 1 month of age
- Diarrhea, recurrent or chronic
- Hepatitis
- Herpes simplex virus (HSV) stomatitis, recurrent (more than two episodes within 1 year)

- HSV bronchitis, pneumonitis, or esophagitis with onset before 1 month of age
- Herpes zoster (shingles) involving at least two distinct episodes or more than one dermatome
- Leiomyosarcoma
- Lymphoid interstitial pneumonia (LIP) or pulmonary lymphoid hyperplasia complex
- Nephropathy
- Nocardiosis
- Persistent fever (lasting >1 month)
- Toxoplasmosis, onset before 1 month of age
- Varicella, disseminated (complicated chickenpox)

Category C: Severely symptomatic

Serious bacterial infections, multiple or recurrent (i.e., any combination of at least two culture-confirmed infections within a 2-year period), of the following types: septicemia, pneumonia, meningitis, bone or joint infection, or abscess of an internal organ or body cavity (excluding otitis media, superficial skin or mucosal abscesses, and indwelling catheter-related infections)

- Candidiasis, esophageal or pulmonary (bronchi, trachea, lungs)
- Coccidioidomycosis, disseminated (at site other than or in addition to lungs or cervical or hilar lymph nodes)
- Cryptococcosis, extrapulmonary
- Cryptosporidiosis or isosporiasis with diarrhea persisting >1 month
- Cytomegalovirus disease with onset of symptoms at age >1 month (at a site other than liver, spleen, or lymph nodes)
- Encephalopathy (at least one of the following progressive findings present for at least 2 months in the absence of a concurrent illness other than HIV infection that could explain the findings): a) failure to attain or loss of developmental milestones or loss of intellectual ability, verified by standard developmental scale or neuropsychological tests; b) impaired brain growth or acquired microcephaly demonstrated by head

circumference measurements or brain atrophy demonstrated by computerized tomography or magnetic resonance imaging (serial imaging is required for children <2 years of age); c)acquired symmetric motor deficit manifested by two or more of the following: paresis, pathologic reflexes, ataxia, or gait disturbance

- Herpes simplex virus infection causing a mucocutaneous ulcer that persists for >1 month; or bronchitis, pneumonitis, or esophagitis for any duration affecting a child >1 month of age
- Histoplasmosis, disseminated (at a site other than or in addition to lungs or cervical or hilar lymph nodes)
- Kaposi's sarcoma
- Lymphoma, primary, in brain
- Lymphoma, small, noncleaved cell (Burkitt's), or immunoblastic or large cell lymphoma of B-cell or unknown immunologic phenotype
- Mycobacterium tuberculosis, disseminated or extrapulmonary
- Mycobacterium, other species or unidentified species, disseminated (at a site other than or in addition to lungs, skin, or cervical or hilar lymph nodes)
- Mycobacterium avium complex or Mycobacterium kansasii, disseminated (at site other than or in addition to lungs, skin, or cervical or hilar lymph nodes)
- Pneumocystis carinii pneumonia
- Progressive multifocal leukoencephalopathy
- Salmonella (nontyphoid) septicemia, recurrent
- Toxoplasmosis of the brain with onset at >1 month of age
- Wasting syndrome in the absence of a concurrent illness other than HIV infection that could explain the following findings: a) persistent weight loss >10% of baseline or b) downward crossing of at least two of the following percentile lines on the weight-for-age chart (e.g., 95th, 75th, 50th, 25th, 5th) in a child ≥ 1 year of age or c) <5th percentile on weight-for-height chart on two consecutive measurements, ≥ 30 days apart plus a)

chronic diarrhea (i.e., at least two loose stools per day for >30 days) or b) documented fever (for ≥ 30 days, intermittent or constant)



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APPENDIX B

1. Conventional PCR amplification method

PCR Master Mix was prepared according to the follow table

Reagents	Stock conc.	Diluted to	Final conc.
PCR buffer	10 x	1 x	1 x
MgCl ₂	25 mM		1.5 mM
dNTP	1.25 mM		0.2 mM
CMV IE1 primer	25 pmol/μl	10 pmol/μl	0.6 μM
CMV IE3 primer	25 pmol/μl	10 pmol/μl	0.6 μM
<i>Taq</i> polymerase	50 U/μl		1.25 U
H ₂ O			

A part of the well-isolated transformed colony was added directly to the 50 μl of PCR master mix for each reaction. The PCR is performed under the following condition: After 10 minutes at 95°C, the samples are submitted to 40 cycles, with each cycle consisting of a step at 95°C for 30 second, 55°C for 30 second, and followed by a step at 72°C for 30 minutes. Then, PCR products were submitted to 72°C for 10 minutes and hold at 4°C.

2. PCR products detection by 2% agarose gel electrophoresis with the ethidium bromide staining.

The 10 μl of each PCR products were mixed with 2 μl of loading dye (6X), 50 bp in size. The mixtures were added into 2% agarose gel. Electrophoresis processes were run for 30 minutes. The electrophoresis gels were stained with the ethidium bromide for 15 minutes and destained by distilled water for 10 minutes. Finally, the pictures were taken.

CIRRICULUM VITAE

Name	Mr. Woottichai Khamduang
Date of birth	December 23, 1979
Place of birth	Mae Hong Son, Thailand
Education	
1997	High School Certificate, Mae La Noi Daroonsik School, Mae Hong Son. Thailand
2001	Bachelor degree of Science (Medical Technology), Faculty of Associated Medical Science, Chiang Mai University
Experiences	
2001 – 2004	Position; Laboratory technician, Working place; Perinatal HIV Prevention Trial (PHPT), Thailand

Research activities

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