p-ISSN 0030-9311
e-ISSN 2338-478x

Volume 54 • No. 4 (Supplement) • July 2014

Paediatrica Indonesiana

(The Indonesian Journal of Pediatrics and Perinatal Medicine)

Abstract of the 16th Indonesian Congress of Pediatrics,
Indonesian Pediatric Society,
Palembang, Indonesia,
August 25-28, 2014

Published by
Indonesian Pediatric Society

Poster: Indonesian College of Pediatrics

Posters: Infection & Tropical Diseases

Paediatrica Indonesiana

VOLUME 54 Supplement • 2014 NUMBER 4

Infection & Tropical Diseases

P-INF-005

Clinical profiles of patient with cytomegalovirus infection

Y Kurniawan, LD Prahmani, L Kartina, D Puspitasari, D Husada, PS Basuki, Ismoedijanto

Division of Infectious Diseases and Tropical Pediatrics, Department of Child Health, University of Airlangga Medical School/ Dr. Soetomo Hospital, Surabaya

Abstract

Background. Cytomegalovirus (CMV) is the most common congenital infection in humans. Congenital CMV infection can follow either a primary or recurrent maternal infection, but the likelihood of fetal infection and the risk of associated damage is higher after a primary infection. Approximately 90% of congenitally infected infants are asymptomatic at birth. Jaundice, petechiae, and hepatosplenomegaly are the most frequently noted clinical triad in symptomatic infants. More frequent and more severe sequelae occur in symptomatic infants, notably psychomotor hearing loss and retardation.

Objective. To document the clinical profiles in children with CMV infection.

Methods. A cross sectional study was conducted at Dr. Soetomo Hospital from 2011 to 2013. Characteristic the patient was describe. Subjects underwent head CT scan, ophthalmologic and audiologic examination. CMV infection assessed by CMV IgG or IgM antibodies serology.

Results. From 63 children with CMV infection, there were 50 completely medical records. The majority age of patients (60.8%) was between 0 to 6 months. Male to female ratio was 1.06:1. Around 54% term infant, 32% severe malnutrition, and 100% received brestfeeding. Common clinical and laboratory findings include fever 88%, jaundice 54%, anemia 44%, seizure 20%, microcephaly 69,7%, developmental delay 52%, hepatomegaly 56% and splenomegaly 18%. Most patients showed positive IgG CMV (97%) but only 48.5% positive IgM. Chorioretinitis (2%) and sensorineuronal hearing loss (10%) were observed.

Conclusion. The most common feature are fever, microcephaly, hepatomegaly, jaundice, and anemia.

Keywords: cytomegalovirus infection, developmental delayed, clinical profiles

P-INF-006

Growth and developmental status in children with human immunodeficiency virus exposed uninfected and infected

N Alami, R Maulina, L Kartina[1], D Puspitasari[1], D Husada[1], A Suryawan[2], PS Basuki[1], Ismoedijanto[1]

Division of Infectious Diseases and Tropical Pediatrics [1], Division of Growth and Development[2], Department of Child Health, University of Airlangga Medical School/Dr. Soetomo Hospital, Surabaya

Abstract

Background. Children who were born from human immunodeficiency virus (HIV) infected mother are susceptible for growth and developmental problems. It might be due to the HIV invade the developing central nervous system and cause widespread damage.

Objective. To compare growth and developmental status between children with HIV exposed uninfected (HEU) and HIV infected (HI) at Soetomo Hospital.

Methods. A cross-sectional study was done at Dr. Soetomo Hosiptal during 2006-2013 for all under 4 years old of children who were born from HIV-infected mother. They grouped into HUE and HIV infected children. The diagnosis of HUE and HIV was confirmed by polymerase chain reaction (PCR) and/or 3 serology methods. The anthropometric of the children was assessed using *CDC Growth Chart*. The developmental status was assessed using *Denver II*. Statistical analysis using chi square test, with $P<0.05$ was considered significant.

Results. A total of 39 children were enrolled in this study (28 HEU and 11 HIV infected children). The growth status in HUE group showed normal in 71.7% comparing 27.3% in HIV infected group ($P=0.01$). The developmental status in HUE group revealed suspected developmental delay in 7.14% comparing 90.9% in HIV infected group ($P=0.00$).

Conclusion. The HIV infected children have a lower growth and developmental status than HUE children.

Keywords: growth, development, children, HIV, HUE

Clinical Profile Patient With Cytomegalovirus Infection at dr. Soetomo Hospital

Y Kurniawan, LD. Prahmani, [1]Leny Kartina, [1]Dwiyanti Puspitasari, [1]Dominicus Husada, [1]S. Soegijanto, [1]Parwati S.B, [1]Ismoedijanto

[1]Division of Tropic Disease Department of Pediatrics

Faculty of Medicine, Airlangga University, dr. Soetomo Hospital Surabaya

ABSTRACT

Background: Cytomegalovirus (CMV) is the most common congenital infection in humans. Congenital CMV infection can follow either a primary or recurrent maternal infection, but the likelihood of fetal infection and the risk of associated damage is higher after a primary infection. Approximately 90% of congenitally infected infants are asymptomatic at birth. Jaundice, petechiae, and hepatosplenomegaly are the most frequently noted clinical triad in symptomatic infants. More frequent and more severe sequelae occur in symptomatic infants, notably psychomotor hearing loss and retardation.

Objective: To document the clinical profile in children with CMV infection

Methods: A cross sectional study was conducted at Soetomo Hospital from 2011 to 2013. Characteristic the patient was describe. Subjects underwent head CT scan, ophthalmologic and audiologic examination. CMV Infection assessed by CMV IgG or IgM antibodies serology.

Result: From 63 children with CMV infection, there were 50 completely medical records. The majority age of patients (60.8%) was between 0-6 months. Male to female ratio = 1,06:1. Around 54% term infant, 32% severe malnutrition, and 100% received brestfeeding. Common clinical and laboratory findings include fever 88%, jaundice 54%, anemia 44%, seizure 20%, microcephaly 60%, developmental delay 52%, hepatomegaly 56% and splenomegaly 18%. Most patients showed positive IgG CMV (97%) but only 48.5% positive IgM. Chorioretinitis (2%) and sensorineuronal hearing loss (10%) were observed.

Conclusion: The most common feature are fever, microcephaly, hepatomegaly, jaundice, and anemia.

Keywords: *cytomegalovirus infection, developmental delayed, clinical findings*

BACKGROUND

Cytomegalovirus (CMV) is the most common congenital infection in humans. Congenital CMV infection can follow either a primary or recurrent maternal infection, but the likelihood of fetal infection and the risk of associated damage is higher after a primary infection. Approximately 90% of congenitally infected infants are asymptomatic at birth. Jaundice, petechiae, and hepatosplenomegaly are the most frequently noted clinical triad in symptomatic infants. More frequent and more severe sequelae occur in symptomatic infants, notably psychomotor hearing loss and retardation.[1]

The reported incidence varies from 0.15 to 2% and the effects of congenital CMV infection vary, most cases being asymptomatic but others having single or multiple abnormalities of varying severity. Screening for CMV infection is based on maternal serology, i.e. the finding of IgG, IgM or a high IgGavidity. These serology tests, when positive, help to clarify the time of exposure. The finding of preconceptional CMVIgG with no IgM and no change in IgG titer is interpreted as there having been no recent infection. The protective effect of preconceptional immunity of the mother is reflected by the incidence of vertical transmission; 30–40% of primary maternal infections, but less than 1% of secondary maternal infections, result in congenital CMV infections.[2]

Only 10% of congenitally infected fetuses are symptomatic at birth. Clinical symptoms include microcephaly, growth restriction, hepatosplenomegaly, chorioretinitis, jaundice, petechiae, hearing impairment, thrombocytopenia, hyperbilirubinemia, and anemia. The risk for neurologic sequelae is increased when infection occurs in the first trimester. The majority of infants with symptomatic congenital CMV infection at birth have evidence of central nervous system (CNS) impairment. Of infants with asymptomatic congenital CMV infection at birth, 10% to 15% will go on to develop symptoms, typically manifested as SNHL.[3]

OBJECTIVE

To document the clinical profile in children with CMV infection

METHODS

A cross sectional study was conducted at Soetomo Hospital from 2011 to 2013. Characteristic the patient was describe. Clinical findings suggestive of congenital infection in the newborn period including petechiae, jaundice with conjugated hyperbilirubinemia , hepatosplenomegaly, thrombocytopenia, microcephaly, seizures, and chorioretinitis. time of initial evaluation of the patient. In addition, the presence of laboratory abnormalities such as an elevated alanine aminotransferase. Subjects underwent head CT scan, ophthalmologic and audiologic examination. CMV Infection assessed by CMV IgG or IgM antibodies serology.

RESULT

From 63 children with CMV infection, there were 50 completely medical records, consisting 28(56%) males and 22(44%) females (Figure 1). Male to female ratio = 1,06:1. The majority age of patients (60.8%) was between 0-6 months. The clinical characteristics of subjects are shown in table 1.

Figure 1. Gender distribution of the participants

Table 1. Clinical characteristics of subjects

Characteristics	Result
Age of the participants (mean±SD)	1.44± 0.501
Sex : Male, n (%) Female n (%)	 28 (56%) 22 (44%)
Range of age (month) 0-6, n (%) 7-12, n (%) 13-24, n (%) 25-36, n (%) >36 , n (%)	 31(62%) 9(18%) 7(14%) 2(4%) 1(2%)
Nutritional status : Severe malnutrition, n (%) Moderate malnutrition, n (%) good nutrition, n (%)	 16(32%) 13(26%) 21(42%)
Microcephaly : Yes n (%) No n (%)	 30(60%) 20(40%)
Jaundice : Yes , n (%) No, n (%)	 27(54%) 23(46%)
Seizure; Yes, n (%) No , n (%)	 10(20%) 40(80%)
Anemia Yes , n (%) No , n(%)	 22(44%) 28(56%)

Around 54% term infant, 32% severe malnutrition, and 100% received brestfeeding. Common clinical and laboratory findings include fever 88%, jaundice 54%, anemia 44%, seizure 20%, microcephaly 60%, developmental delay 52%, hepatomegaly 56% and splenomegaly 18%. Most patients showed positive IgG CMV (97%) but only 48.5% positive IgM. Chorioretinitis (2%) and sensorineuronal hearing loss (10%) were observed. (Figure 2)

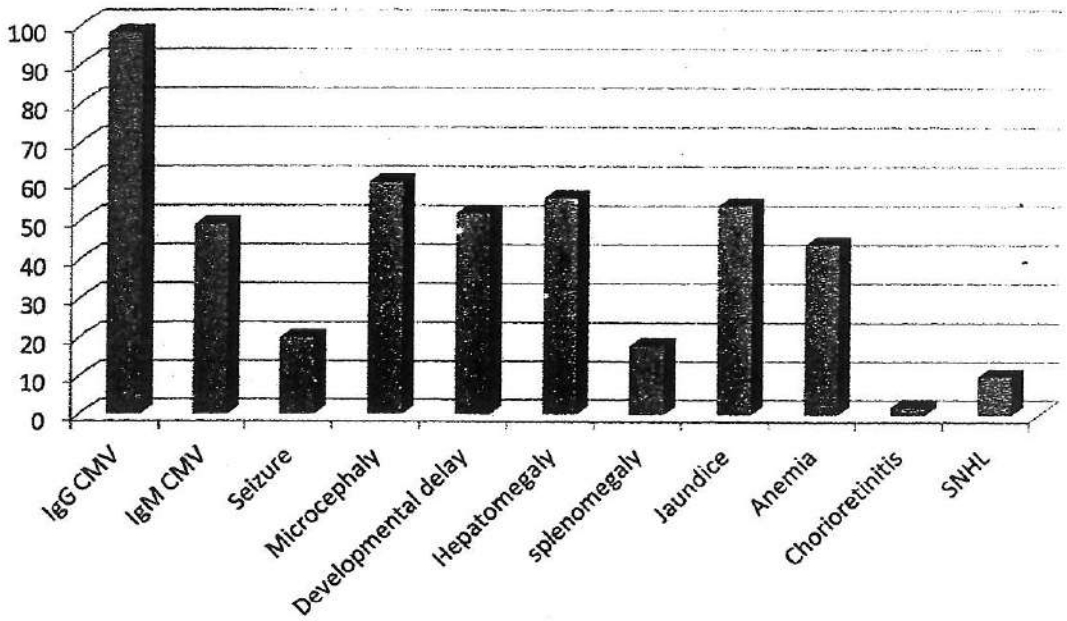

Figure 2. Distribution of CMV profile

DISCUSSION

Cytomegalovirus (CMV) infection is most frequent congenital infection worldwide and is diverse in its clinical manifestations. The fetus can be infected by either a newly acquired (primary) maternal infection or a recurrent (reactivated) maternal infection. The likelihood of fetal infection and the risk of associated age and sequelae is higher after a primary infecttion.[1,4]

In our study the diagnose of CMV infection by measuring IgG / Ig M CMV that we found 97% for IgG and 48.5% for IgM.

Screening for CMV infection is based on maternal serology, i.e. the finding of IgG, IgM or a high IgG avidity. These serology tests, when positive, help to clarify the time of exposure. The finding of preconceptional CMV IgG with no IgM and nochange in IgG titer is interpreted as there having been no recent infection. The protective effect of preconceptional immunity of the mother is reflected by the incidence of vertical transmission; 30–40% of primary maternal infections,but less than 1% of secondary maternal infections, resultin congenital CMV infections.[2,5]

In this study, we found common clinical and laboratory findings include fever 88%, jaundice 54%, anemia 44%, seizure 20%, microcephaly 60%, developmental delay 52%, hepatomegaly 56% and splenomegaly 18%. IgM Chorioretinitis (2%) and

sensorineuronal hearing loss (10%) were observed. The laboratory findings include thrombocytopenia (34%), thrombocytosis (2%), unconjugated bilirubin (56%), conjugated bilirubin (44%), anemia (40%), leukopenia (6%), leukocytosis (50%), increased ALT level (38%), increased AST level (42%) and high CRP (44%).

Only 10% of congenitally infected fetuses are symptomatic at birth. Clinical symptoms include microcephaly, growth restriction, hepatosplenomegaly, chorioretinitis, jaundice, petechiae, hearing impairment, thrombocytopenia, hyperbilirubinemia, And anemia.The risk for neurologic sequelae is increased when infection occurs in the first trimester.[3-6]

CONCLUSION

The most common feature are fever, microcephaly, hepatomegaly, jaundice, and anemia.

REFERENCES

1. Leung AKC, Sauve RS. Congenital Cytomegalovirus Infection. *J Natl Med Assoc.* 2003;95:213-8.
2. Zalel Y, Gilboa Y, M.Berkenshtat, Yoeli R, Auslander R, Achiron R, et al. Secondary cytomegalovirus infection can cause severe fetal sequelae despite maternal preconceptional immunity. *Ultrasound Obstet Gynecol* 2008;31:417-20.
3. Nyholm JL, Schleiss Mr. Prevention of maternal cytomegalovirus infection: current status and future prospects. *Intern J Women's Health* 2010;2:23-35.
4. Malm G, Engman M-L. Congenital cytomegalovirus infections. *Semin in Fetal and Neo Med* 2007;12:154-9.
5. Gandhoke I, Aggarwal R, Lal S, Kare S. Congenital CMV infection in symptomatic infants in delhi and surrounding area. *Indian J Pediatr* 2006:1095-97.
6. Peckham C, Tookey P, Logan S, Giaquinto C. Screening options for prevention of congenital cytomegalovirus infection. *J Med Screen* 2001;8:119-24.

Indonesian Medical Association

16th Indonesian Congress of Pediatrics

Indonesian Pediatrics Society

Palembang - Indonesia, August 25-28, 2014

Certificate of Attendance

This is to certify that

Dominicus Husada

has attended the 16th Indonesian Congress of Pediatrics (KONIKA XVI)
"Towards Global Equalities in Sustainable MDG's
Achievements Through Comprehensive Health Care, for All Indonesian Children"

as

PARTICIPANT

Badriul Hegar, Dr., PhD., Sp.A(K)
President of Indonesia Pediatrics Society

Kiagus Yangtjik, Dr., Sp.A(K)
Chairman of Indonesian Pediatrics Society
of South Sumatera

M. Nazir, Dr., Sp.A(K)
Chairman of the 16th KONIKA

This program has been accredited by Indonesian Medical Association (IMA/IDI) with maximal credit points of 30 (participant), 1 (speaker), and by Indonesian Pediatrics Society (IPS/IDAI) as category I and V CPD (No. 6754/CPD- I/Apl/2014 and 6755/CPD-V/Apl/2014) SK PB IDI No.1223/PB/A.4/08/2014: participant 15, speaker 12, moderator 4, committee 3.