



**DUTCH FOUNDATION
FOR POSTGRADUATE MEDICAL COURSES
IN INDONESIA 2019**

CERTIFICATE

THIS CERTIFICATION IS PROUDLY PRESENTED TO :

Ahmad Suryawan, MD, PhD

HAS ATTENDED AND SUCCESSFULLY COMPLETED AS :

SPEAKER

IDI JAWA TIMUR SYMPOSIUM Accreditation No. 137/PKB/IDI-WJ/2019
Participant : 8 SKP / Speaker : 8 SKP / Moderator : 2 SKP / Committee : 1 SKP
IDI JAWA TIMUR WORKSHOP Accreditation No. 138/PKB/IDI-WJ/2019
Participant : 2 SKP / Instructor : 8 SKP / Moderator : 2 SKP / Committee : 1 SKP

IN RECOGNITION OF HIS/HER VALUABLE PARTICIPATION IN THE SEMINAR & WORKSHOP ENTITLED
THE CONTINUUM OF CARE IN PRE ECLAMPSIA MOTHER-INFANT-CHILD
ON APRIL 8th-9th, 2019, AT MAIN HALL, FACULTY OF MEDICINE, UNIVERSITAS AIRLANGGA SURABAYA - INDONESIA



(PI) CHAIRMAN OF INDOONESIAN MEDICAL ASSOCIATION
SURABAYA BRANCH

Dr. Jongky Hendro Prajitno, SpPD-KEMD



DEAN OF FACULTY OF MEDICINE
UNIVERSITAS AIRLANGGA SURABAYA

Prof. Dr. Soetojo, dr., SpU(K)



Surabaya, 11 Maret 2019

Nomor : 1/DF-2019/III/2019
Lampiran : 1 (satu) berkas
Perihal : **Permohonan Kesediaan menjadi Narasumber dan Permohonan Daftar Riwayat Hidup**

Kepada Yth.

Dr. Ahmad Suryawan, dr., SpA(K)

di Tempat

Dengan hormat,

Sehubungan dengan pelaksanaan ***DUTCH FOUNDATION FOR POSTGRADUATE MEDICAL COURSES IN INDONESIA 2019*** dengan tema ***“The Continuum of care in pre eclampsia mother-infant-child”*** pada tanggal, 8-9 April 2019, maka dengan ini kami menyampaikan permohonan kesediaan Sejawat sebagai pembicara pada kegiatan tersebut dengan :

Topik / Materi : Long-term Developmental Outcome in Preterm Infants born with Preeclampsia
Tanggal / Jam : Selasa, 9 April 2019 / 13.10 – 13.30 WIB
Tempat : Aula Fakultas Kedokteran Universitas Airlangga

Demikian permohonan ini kami sampaikan, atas dukungan dan kerjasama yang baik, kami menyampaikan terima kasih.

Ketua Panitia

Dr. Risa Etika., dr, SpA (K)

Materi dapat diemail ke : sby.dutchfoundation@gmail.com

Mohon dikirim sebelum Jumat, 29 April 2019

CP : Kinan 0821-8578-6767

Lutvi 0856-5580-0187



DUTCH FOUNDATION COURSE ON MEDICAL EDUCATION
“The Continuum of care in pre eclampsia mother-infant-child”
Monday-Tuesday, 8-9 April 2019
Main Hall of Faculty of Medicine, Universitas Airlangga
Surabaya, Indonesia

PROGRAM

Sunday, April 7th 2019			
Time	Topics		Speaker
18.30-19.30	Cocktail Party (Majapahit Hotel)		
Monday, April 8th 2019			
08.00-08.30	Registration Press Conferences & Photosession		
08.30-09.00	Opening Ceremony by : 1. Welcome speech by Chairman 2. Welcome speech by Indonesian Dutch Foundation Representative 3. Welcome speech by Dean Faculty of Medicine, Universitas Airlangga		
Lecture 1st Session		Moderator : Ernawati Darmawan	
09.00-09.30	30'	Pregnancies induced hypertension and neonatal outcome	Prof. Christianne de Groot
09.30-09.50	20'	Cardiomyopathy related to preeclampsia	Prof. Erry Gumilar
09.50-10.10	20'	Q & A, Coffee break	
Lecture 2nd Session		Moderator : Muhammad Ilham Aldika Akbar	
10.10-10.40	30'	3rd topic	Prof. Eva Pajkrt
10.40-11.00	20'	Expectant Management of preterm preeclampsia in developing country, maternal outcomes, and perinatal survival	Ernawati Darmawan
11.00-11.20	20'	Q & A	
11.20-12.30		Lunch and Pray	
Lecture 3rd session		Moderator : Mahendra Tri Arif Sampurna	
12.30-13.00	30'	Surfactant replacement therapy	Prof. Anton van Kaam
13.00-13.20	20'	Neonatal Respiratory Outcome in pregnancy induced hypertension	Agus Harianto



Time		Topics	Speaker
13.20-13.50	30'	Nutrition management in surgical neonate	Prof J.B van Goudoever
13.50-14.10	20'	Breastfeeding topic	Risa Etika
14.10-14.30	20'	Q & A , Coffee break	
14.30-.16.30	120'	Workshop	The Netherlands speakers Bridging host: Prof. Erry Gumilar Ahmad Suryawan

***Speakers the Netherlands:**

Prof Christianne de Groot, MD, PhD, Obstetric and Gynecologist

Prof Eva Pajkrt, MD, PhD, Obstetric and Gynecologist

Prof J.B van Goudoever, MD, PhD, Neonatologist, (*Course Leader*)

Prof Anton van Kaam, MD, PhD, Neonatologist



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PROGRAM

Tuesday, April 9th 2019			
Time	Topics		Speaker
Lecture 1st Session		Moderator : Ernawati Darmawan	
09.00-09.30	30'	9th topic	Prof. Christianne de Groot
09.30-10.00	30'	Evidence based strategy to prevent mechanical ventilation	Prof. Anton van Kaam
10.00-10.20	20'	Q & A , Coffee break	
Lecture 2nd Session		Moderator : Mahendra Tri Arif Sampurna	
10.20 – 10.50	30'	11th topic	Prof. Eva Pajkrt
10.50 – 11.20	30'	Lung protective strategy conventional ventilation	Prof. Anton van Kaam
11.20 – 11.40	20'	Q & A	
11.40 – 12.40		Pray and Lunch	
Lecture 3rd Session		Moderator : Dina Angelika	
12.40 – 13.10	30'	Long-term outcome in preterm infant	Prof. J.B van Goudoever
13.10 – 13.30	20'	Long-term Developmental Outcome in Preterm Infants born with Preeclampsia	Ahmad Suryawan
13.30 – 13.50	20'	The Role of Physical Medicine and Rehabilitation in Improving Neonatal Respiratory Outcome	S.M. Mei Wulan
13.50 - 14.20	30'	16th topic	Prof. Eva Pajkrt
14.20 – 14.50	30'	17th topic	Prof. Christianne de Groot
14.50 – 15.20	20'	Q & A Coffee break	
15.20 - 16.00	40'	Expert Jam Session : “The Continuum of care in pre eclampsia mother-infant-child” Indonesia-Netherlands perspectives	
16.00 – 16.30		CLOSING CEREMONY	

Long-term Developmental Outcome in Preterm Infants born with Preeclampsia

Ahmad Suryawan

Division of Growth and Development, Department of Child Health
Soetomo Hospital/Faculty of Medicine, Universitas Airlangga
Surabaya – Indonesia

Increasing evidence has demonstrated that preeclampsia as the one of pregnancy-induced hypertensive disorders is correlated with an increased risk for developmental outcomes such as language development, and also behavior development such as ADHD or ASD. Fetal exposure to maternal preeclampsia appear to increased risk for altering anatomy and vascular of the brain during development. This can be used to explain the findings of various specific developmental disorders such as cognitive and behavioral in preterm-born children to preeclampsia mothers. Characterization of a preterm-born infant to preeclampsia “brain imaging signature” could help identify children who may need enhanced educational or medical support (Dang, 2016). And, given the potential for preeclampsia to disrupt mechanisms regulating fetal growth and development, a better understanding of the pathophysiology of the disorder may allow us to develop strategies to prevent morbidities from fetal through adult life (Backes et al., 2011). This review explores the impact of maternal preeclampsia upon the offspring’s long-term developmental outcomes include the development of behavior and cognitive.

Preeclampsia has been examined as a risk factor long-term developmental disorders, such as autism spectrum disorder (ASD), attention deficit hyperactive disorders (ADHD), and many forms of developmental delay (DD) in many investigations with varied conclusions. Preeclampsia may trigger various developmental disorders through maternal (vascular damage, enhanced systemic inflammation and insulin resistance), fetal (growth restriction and progressive hypoxemia), and placental (oxygen and nutrient transfer restriction and oxidative stress) mechanisms (Walker et al., 2015).

Preeclampsia is a heterogeneous disorder, therefore the long-term developmental outcomes of exposed infants are varied. One study showed that preeclampsia is associated with a decreased risk of cerebral palsy. These authors found a protective effect of maternal preeclampsia on cerebral palsy regardless of exposure to magnesium sulfate (Gray, 1998). Several studies concluded that magnesium sulfate, a commonly used medication for seizure prophylaxis in maternal preeclampsia, has been shown to have a neuroprotective effect on the preterm infant, such as it is associated with a decreased incidence of cerebral palsy among survivors exposed to the medication between 24 and 31 weeks gestation (Rouse et al., 2008). And also, a meta-analysis showed that antenatal magnesium sulfate given to women at risk for preterm birth decreased the incidence of cerebral palsy (RR 0.68, 95% CI 0.54–0.87) and gross motor dysfunction (RR 0.61, 95% CI 0.44–0.85) (Doyle, 2009).

Meanwhile, another study showed a result that infants born to mothers with preeclampsia have lower mental development index (MDI) scores at 24 months of age compared to infants without maternal preeclampsia ($P = 0.04$) (Cheng, 2004). However, in fact, the correlation between maternal preeclampsia and long-term worse developmental outcomes has been challenged with a study by Silveira et al., 2011, that suggesting infants exposed to preeclampsia have a higher scores on developmental score at 18 months corrected age (Silveira et al., 2011).

A study of Whitehouse AJ et al, 2012, showed that hypertensive diseases of pregnancy (gestational hypertension and pre-eclampsia) are related with neurocognitive outcomes in middle childhood which is verbal ability was assessed with the Peabody Picture Vocabulary Test – Revised (PPVT-R) at age 10 years. This study showed that offspring of pregnancies complicated by maternal hypertension (gestational hypertension or pre-eclampsia) had a mean PPVT-R score that was 1.83 ([95% confidence interval (CI) $-3.48, -0.17$], $P = 0.03$) points lower than children from normotensive pregnancies (Figure 1). Maternal hypertensive diseases of pregnancy are a risk factor for a small reduction in offspring verbal ability (Whitehouse et al., 2012).

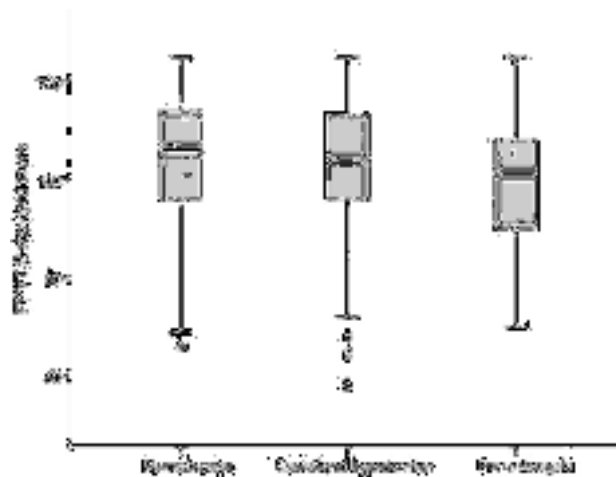


Figure 1. The score of the Peabody Picture Vocabulary Test – Revised (PPVT-R) at age 10 years of offspring from normotensive pregnancies and from pregnancies complicated by maternal gestational hypertension or pre-eclampsia (Whitehouse AJ, 2012)

Several key findings related to the offspring of preeclampsia pregnancies brain and cognition was summarized by Dang, 2016, such as lower IQ scores, smaller head circumferences at birth, higher rates of depression, reduced verbal ability, lower mean verbal IQ (VIQ) and lower full scale IQ (FSIQ), enlarged brain regional volumes in five regions (cerebellum, temporal lobe, brainstem and right and left amygdala), and deficits in working memory and visuospatial processing (Dang, 2016).

A study also revealed that newborns born growth restricted after pregnancies complicated by preeclampsia compared to growth-restricted babies without preeclampsia was no significant difference in the neurological exam score between groups after adjustment for gestational age. However, they have a lower IQ at the age of 3 years (85.5 in the preeclamptic group and 96.9 in the non-preeclamptic group, $p < 0.03$). (Many et al., 2003)

Experience at Soetomo Hospital Surabaya in 2012 showed that the assessment of general movements (GMs) quality may improve the sensitivity of head-USG examination to predict developmental disorders of preterm-infant who born from mother with severe preeclampsia (SN 0.80; SP 0.50; PPV 0.67; NPV 0.67; LLR 1.60) compared to head-USG only (SN 0.20; SP 1.0; PPV 1.0; NPV 0.5; LLR 5.0) (Rochmah, 2012).

In the one of meta-analysis, over 50 prenatal factors have been examined to study the association with autism risk, revealed that factors with the strongest evidence against a role in autism risk included previous fetal loss and maternal hypertension, proteinuria, preeclampsia, and swelling (Gardener, 2009).

Children with ASD were more than twice as likely to have been exposed in utero to preeclampsia as controls with typical development (aOR: 2.36; 95% CI, 1.18-4.68); risk increased with greater preeclampsia severity (test for trend $p=0.02$). Placental insufficiency appeared responsible for the increase in risk for developmental disorders associated with severe preeclampsia (aOR: 5.49; 95% CI, 2.06-14.64) (Walker, 2015).

Synthesizing from the many published literature in a systematic review and meta-analysis was conducted by Maher et al, 2018, revealed that exposure to hypertensive disorders of pregnancy may be associated with an increase in the risk of ASD with a pooled aOR 1.35 (95% CI, 1.11-1.64) and ADHD with a pooled aOR of 1.29 (95% CI, 1.22-1.36) in offspring (Maher *et al.*, 2018).

Those differences of several evidences above highlight the fact that preeclampsia represents a common endpoint for a number of adverse maternal conditions and that efforts to better characterize subtypes of preeclampsia may allow for a clearer understanding of the impact of preeclampsia on short and long-term neonatal outcomes. (Backes et al., 2011). These findings highlight the need for greater pediatric surveillance of infants exposed to preeclampsia to allow early intervention that may improve developmental outcomes.

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