average duration of oxygen therapy in experimental group was 37 days and in control group 27 days. Phototherapy lasted on the average 7 days in experimental group and 9 days in control. Vitamin E was administered longer in experimental than in control group.

Conclusion : According to our results, average maximum bilirubin level was lower in newborns with ROP, but this was not statistically significant. In our opinion, these kinds of studies deserve to be continued. This should bring the final proof of bilirubin antioxidative role in organism, as well as establish a protocol for hyperbilirubinemia treatment in prematurely born children.

FCO13

THE EFFECT OF NEONATAL RESUSCITATION TRAINING PROGRAM ON APGAR SCORE AS AN OUTCOME OF THE NEWBORN; A HOSPITAL BASED STUDY

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Background: Neonatal Resuscitation Training Program (NRP) based on American Association of Pediatric (AAP) has been introduced to pediatric resident in Padjadjaran University since 1998, to standardize knowledge and skills in order to reduce neonatal morbidity and mortality and increase successful resuscitation. The 5-minute Apgar score is the index of successful neonatal resuscitation and immediate postnatal outcome.

Objective: To evaluate the effect of NRP in Hasan Sadikin Hospital Bandung by examining Apgar score among the newborn.

Method: This is a retrospective two times period design (before training: year 1997 as group I, and after training: year 2000 as group II). The data was taken from hospital medical record and we include only newborn with normal birth weight and with abnormal presentation. We compared these two groups to find improvement on 5-minute Apgar score among severe asphyxiated newborns (1 minute Apgar score: 0-3) and we analyzed the data with $X2$ test, using SPSS 10.0 computer program.

Result: Group I had 84 subjects out of 1559 births, and group II had 107 subjects out of 2680 births. According to Apgar score, there was no significant difference in proportion of subjects between both groups ($p> 0.1$). From group I: there were 2 severe asphyxiated newborns and both of them showed improvement on 5-minute Apgar score (4-6). From group II: there were 7 severe asphyxiated newborns and 5-minute Apgar score are: 1 (14,3%) had low score (0-3), 3 (42,9%) had moderate score (4-6), and 3 (42,9%) had high score (7-10). All moderate asphyxiated subjects (group I, n=23; group II, n=22) improved on 5-minute Apgar score (7-10). These data showed no significant improvement on 5-minute Apgar score among severe asphyxiated subjects between both groups.

Conclusion: This study showed that training of NRP in our department did not improve the outcome of neonatal resuscitation yet. Evaluation on NRP should also be done in the Hospital outside the teaching Hospital.

FCO14

HOSPITAL NEONATAL HYPOTHERMIA: CHARACTERISTIC AND THE IMPACT OF NEONATAL RESUSCITATION TRAINING PROGRAM

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Backround: The newborn who was not thermally protected in the fist 10-20 minutes may loose body heat by 2-4∞C, and the baby would develop hypothermia. Risk factors to neonatal hypothermia were low birth weigh, prematurity, asphyxia, ill babies and babies delivered by mother with anesthetic drugs. It is assumed that proper and correct neonatal resuscitation will decrease the prevalence of neonatal hypothermia.

Objectives: To know the characteristic of neonatal hypothermia and to evaluate the impact of Neonatal

Resuscitation Training Program (NRP) on the prevalence neonatal hypothermia in Hasan Sadikin general hospital Bandung.

Methods: This was cross sectional study. The subjects were infant born in Hasan Sadikin hospital in January – February 2002. The axilla temperature were measured 10 minutes after delivery, body weight was measured by digital baby weighing and Dubowitz and Ballard score were used to estimate gestation age. The data was analyzed using chi-square test.

Results: From two hundred and four (204) newborn who delivered in Hasan Sadikin Hospital, only 112 newborn that were compared because babies delivered by cesarean section were excluded. Forty babies (35,4%) delivered by doctor who had NRP, 73 babies (64,6 %) delivered by doctors non NRP. Hypothermia babies whom were delivered by NRP 11 (35,5%) and by non NRP 20 (64,5%).

Conclusions: Low birth weight, prematurity, asphyxia tend to be the characteristic of hypothermia babies and the Neonatal Resuscitation Training Program give no impact hospital neonatal hypothermia in Hasan Sadikin General Hospital Bandung.

FCO15

CORD BLOOD IGF-1 AND IGFBP-3 LEVELS IN ASPHYXIATED NEWBORNS

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Objective: Determination and pathogenesis of perinatal asphyxia is still an important problem in NICU. Aim of this study was to evaluate relationship between serum IGF-1, IGFBP-3 levels and perinatal asphyxia.

Patients and Methods: Perinatal asphyxia was evaluated by means of APGAR scores in 1 and 5 minutes and umbilical cord artery gas analysis as pH, PO2, PCO2, HCO3, ABE and lactate. According to these criteria 12 term-newborn infants were defined as asphyxiated and 11 newborns as normal. Umbilical cord blood IGF-1 and IGFBP-3 levels were detected and searched for correlation with Apgar scores and blood gas parameters.

Results: Serum IGF-1 levels were lower in asphyxiated group than control subjects (27.2± 26.1, 60.5 ±28.2, p<0.01). Serum IGFBP-3 levels were also lower in asphyxiated group (1107.7±320.4, 1682.5±364.1, p<0.001). We demonstrated positive correlation between serum IGFBP-3 and Apgar scores (1 and 5 minute), pH, PCO2, ABE, HCO3, SO2, ctO2, and cord blood lactate levels. Cord blood IGF-1 levels were correlated with Apgar score at 1 minute, birth weight, and cord blood pH and HCO3 levels. Cord blood IGF-1 levels were correlated with birth weight and cord blood IGFBP-3 levels were correlated with cord blood HCO3 and ctO2 with stepwise regression analysis.

Conclusion: Umbilical cord IGF-1 and IGFBP-3 levels decreased in asphyxiated newborns like in experimental studies. Correlation was found between IGF-1, IGFBP-3 levels and blood gas parameters. Because IGF-1 has neuroprotective effect in experimental models of hypoxia and ischemia, serum IGF-1 and IGFBP-3 levels can be used for determination of asphyxia and may have possible protective effects when used as therapeutic agents.

FCO16

OPTIMIZATION OF THE DIAGNOSIS AND TREATMENT OF CEREBRAL DISORDERS IN NEWBORNS

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Newly born children, at the age 23-28 weeks are under a high risk of mortality and disablement. The difficulties of a final diagnosis of such cases are connected to diversity of CNS dysfunctions, the generalization of cerebral reactions, the dynamism of the process, and the changes of symptoms within several hours with the additional stress of the childbirth period.

120 newborns (age 1- 30 day) were investigated, together with a clinical investigation we used neuro-