Original Article

Early initiation of breastfeeding at Dustira Hospital

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Abstract

Background The infant mortality rate (IMR) in Indonesia is higher than that in other ASEAN countries. The highest rate of mortality occurs in the first 24 hours of life. Suboptimal breastfeeding initiation is a cause of high IMR. In an effort to decrease infant mortality, implementing early initiation of breastfeeding (EIB) has been encouraged.

Objective To assess the success rate and time needed for latching on in EIB implementation.

Methods We reviewed medical records of vaginal deliveries at Dustira Hospital, Cimahi, West Java, from June–November 2011.

Results From 305 vaginal deliveries, 174 infants received EIB, though only 159 medical records could be assessed. The results showed that 52 % did EIB with a 91.8% success rate (defined as good implementation by WHO) and a 8.2% fail rate. In terms of subjects' birth weights, the success rate of EIB implementation was 62.5% in the low birth weight (LBW) group, 94.9% in the normal birth weight (NBW) group, and 100% in the large birth weight or macrosomic group. The success rate of EIB implementation was 69.2% in the preterm group and 93.8% in the full term group. The success rate of EIB implementation was 71.4% in the LBW/fullterm group and 55.6% in the LBW/preterm group. The amount of time for infants to latch on was highest within the 30–44 minute group (52.7%).

Conclusion The EIB implementation at Dustira Hospital was classified as good and the amount of time to latch on was 30-44 minutes.[**Paediatr Indones. 2015;55:126-30.**].

Keywords: early initiation of breastfeeding, birth weight, gestational age

Each year, about four million newborns die before they are four weeks old, 98% of these deaths occur in developing countries. Newborn deaths now contribute to about 40% of all deaths in children under five years of age globally, and more than half of infant mortality.[1] In the neonatal period (the first 28 days of life), most deaths occur during the first 7 days. Mortality is very high in the first 24 hours after birth (25–45%).[2] Many causes of neonatal deaths are amenable to intervention, the majority can be prevented. A global analysis of 4 million neonatal deaths showed that infections (sepsis, pneumonia, tetanus, and diarrhea) caused 36% of deaths, and preterm birth an additional 27%.[2] The deleterious effects of both can be prevented or reduced by early initiation of breastfeeding (or human milk feeding) and exclusive breastfeeding. Neonatal mortality contributes to 38% of under five deaths and is the main barrier to achieving the *Millenium Development Goal 4* (MDG 4) for Child Health.[2] As reported by the *Global Strategy for Infant and Young Child Feeding*, two-thirds of under-five deaths occur in infancy, mostly related to poor feeding practices.[3]

In developing countries, as many as 1.45 million lives (117 million years of life) worldwide have been

lost due to suboptimal breastfeeding. *The Lancet Series on Child and Newborn Survival* in 2003 and 2004 recognized that exclusive breastfeeding for 0-6-month-olds can decrease child mortality by 13-15%.[2,3] The latest data from the Ministry of Health of Indonesia showed that 17 babies die every hour. The birth rate in Indonesia is about 4.5 million per year, accompanied by a high mortality rate of 1.5 million per year.[4]

Breastfeeding studies have demonstrated substantial benefits for child health and reducing the infant mortality rate.[4,5] The most comprehensive study from Ghana estimated that up to 22% and 16% of all neonatal deaths could be prevented with universal coverage of breastfeeding within 1 and 24 hours of birth, respectively.[5] The benefits of early initiation of breastfeeding (EIB) are particularly pronounced for preterm and low birth weight (LBW) infants.[6] Early initiation of breastfeeding comprises of the act of placing the baby against the mother's chest or abdomen soon after birth allowing the infant to latch on to the nipple and suckle until satisfied. This process lasts a minimum of one hour after the baby is born.[7-9] This initial contact and early breastfeeding has many benefits. Immediate interaction between mother and baby in the few minutes after birth has been closely linked to the success of breastfeeding and is a good alternative providing of formula early in life. Mothers who breastfed in the first hour after birth had a 2 to 8 times greater chance of exclusive breastfeeding for up to four months, compared with mothers who did not breastfeed in the first hour.[10] Early initiation of breastfeeding also benefits the baby in receiving colostrum, which contains a variety of factors that prevent infection.[11]

Although early breastfeeding (within the first hour) is very beneficial for babies, unfortunately, many mothers delay initiation of breastfeeding. The results of the *Indonesian Demographic and Health Survey* 2002-2003 showed that 95.9% of infants were breastfed, but only 38.7% were breastfed in the first hour after birth.[4,10] As such, we aimed to assess the success of EIB in Dustira Hospital which has implemented EIB since the *Baby-Friendly Hospital Initiative* (BFHI) was declared by the government. We hope to provide information on EIB and the success of its implementation, to enhance the implementation of the EIB, which in turn helps reducing IMR.

Methods

We reviewed medical record data on EIB in vaginal delivery cases at Dustira Hospital, Cimahi, West Java, from June to November 2011. Inclusion criteria were infants with good physical maturity (gestational age > 32 weeks), in good general condition, and whose mothers were willing to implement EIB. The exclusion criteria were infants with perinatal asphyxia, very low birth weight (<1500 g), incomplete medical records or whose mothers had a poor general condition.

Criteria for succeed EIB was if the baby could latch on the mother's nipple within the first hour of birth, and failed EIB if the baby couldn't latch on the mother's nipple within the first hour of birth.

Data were analyzed to assess for a possible relationship between variables, using Pearson's Chi-square test, with Kolmogorov-Smirnov test, and Fisher's exact test as alternatives.

Results

During the study period at Dustira Hospital, there were 305 vaginal deliveries, of which 174 (57%) implemented EIB, but only 159 medical records could be reviewed (**Table 1**). There were 146 infants (91.8%) who succeeded in EIB implementation and only 13 infants (8.2%) who failed in EIB implementation (**Table 2**). There were 16 low birth weight (LBW) infants, 136 normal birth weight (NBW) infants, and 7 infants with large birth weight or in the macrosomic group (**Table 3**).

From the data in **Table 3**, 10 out of 16 LBW infants and 94.9% (129 infants) of NBW infants succeeded in EIB implementation. All the macrosomic babies succeeded in EIB. Based on gestational age, 9

Table 1. Distribution of vaginal deliveries and EIB implementation from June to November 2011

Months	Number of vaginal deliveries	EIB	
		n	(%)
June	47	28	59.6
July	58	30	51.7
August	55	30	54.5
September	47	23	48.9
October	52	40	76.9
November	46	23	50
Total	305	174	57

Table 2. Success rate of EIB at Dustira Hospital during the study period

EIB	n	(%)
Succeeded	146	91.8
Failed	13	8.2
Total	159	100

Table 3. The success rate of EIB by birth weight groupings

Variables	EIB		Total	P value
	Succeeded	Failed	N	
	n	n		
Birth weight				0.05*
LBW	10	6	16	
NBW	129	7	136	
Macrosomic	7	0	7	
LBW and gestational age				0.451**
LBW < 37 weeks	5	4	9	
LBW 37-42 weeks	5	2	7	
Gestational age				0.013**
< 37 weeks	9	4	13	
37-42 weeks	137	9	146	
≥ 42 weeks	0	0	0	

*Kolmogorov Smirnov test; **Pearson's Chi-square and Fisher's exact test alternatives; LBW=low birth weight; NBW=normal birth weight

out of 13 preterm birth infants (<37 weeks gestation) succeeded in EIB implementation. Of 146 full term infants, 93.8% (137 infants) succeeded in EIB implementation.

In this study we grouped latching-on time into four categories as shown in **Table 4**. The longest time to latch on was more than 60 minutes in 8 infants (5.5%). Most infants (52.7%) took 30-44 minutes to latch on.

Table 4. Distribution of latching-on time

Latching-on time	n	(%)
15–29 min	39	26.7
30–44 min	77	52.7
45–59 min	22	15.1
≥60 min	8	5.5
Total	146	100

Discussion

The World Health Organization (WHO) recommends that newborns be put to the breast within one hour after birth and that exclusive breastfeeding continue for six months. Within the first hour, assistance with positioning and attachment should be given to mothers. Optimally, the baby should be breastfed before any routine procedures, such as bathing, weighing, umbilical cord care, or eye medication, are performed. Early breastfeeding enhances bonding, increases the chance of breastfeeding success, and lengthens the duration of breastfeeding.[1-3,8,9]

The WHO has rated hospitals on the percentage of breastfeeding initiation that occurs in their institution in the first hour after birth as poor (0–29%), fair (30–49%), good (50–89%), or very good (90–100%).[12] The implementation of the EIB at Dustira Hospital was performed by interns, midwives, general practitioners and lactation counselor in the Perinatology Ward. In our study, the overall percentage of breastfeeding initiation within the first hour was 52% (good), but still did not meet the target of 80% set by the Indonesian Ministry of Health. Similarly, a Brazilian study reported that the prevalence of breastfeeding initiation within the first hour of life was 52%. A Turkish study found that from 577 cases, 35.2% (fair) initiated breastfeeding within the first hour, while 72.8% of them initiated breastfeeding within the first two hours of birth.[13] Massachusetts state's overall breastfeeding initiation rate was 74.6%,[14] while that of Nigeria was reported to be 59.2% of mothers and their infants initiating breastfeeding within 1 hour of delivery.[15] In a Nepalese study, only 771 infants (3.4%) were breastfed within the first hour after birth, but breastfeeding within the first 24 (56.6%) or 48 (83.1%) hours was more common. Breastfeeding was established within 72

hours for 97.2% of breastfed infants in Nepal.[16] The breastfeeding initiation rate was 82% in a study done at Saint Carolus Hospital in 2008.[17]

Early initiation of breastfeeding has been listed in *Normal Delivery Care Reference Book* (NPCR) from the Ministry of Health as step 43 of 58 overall steps, and in the *Panduan Pelayanan Kesehatan Bayi Baru Lahir Berbasi Perlindungan Anak* (Child-protection-based Newborn Health Care Guidance) of the Ministry of Health Republic of Indonesia.[18] In reality, its implementation has not been done successfully, due to differing interpretations. Furthermore, EIB is not explicitly included in the policy. However, the regulations are a good start, to be a guideline for the individual, family, community, or institution.

In normal deliveries, every woman is expected to achieve EIB success. However, we found 13 infants who failed EIB. Two infants failed due to deterioration that required immediate assistance and one infant had labioschisis. The remaining 10 infants failed at EIB due to maternal bleeding and exhaustion after giving birth. The mothers preferred to rest rather than immediately breastfeed their newborns.

The Kolmogorov-Smirnov analysis revealed a significant relationship between birth weight and EIB success (P=0.05). In contrast, a Turkish study found no relationship between birth weight and EIB success (P=0.968).[12] This finding could have been due to the small LBW sample size in our study or the lowest gestational age being 35 weeks. In infants >32 weeks gestational age, sucking and swallowing reflex coordination has typically been established. Others have reported contrasting results.[18]

Fisher's exact test revealed a significant relationship between gestational age of 37-41 weeks and EIB success (P=0.013). Similarly, a Turkish study found that infants of younger gestational age (GA) had significantly lower rates of early breastfeeding than fullterm infants, (56.5%vs. 73.8%, respectively, P= 0.01).[13] These data are also consistent with the observations of Nakao *et al.* in Japan.[20] A cohort study (2004) in Pelotas, Brazil showed that 10.8% of newborns had late premature births and, in comparison with the full term newborns, were at greater risk of not being breastfed within the first hour after birth. It is worth commenting that, depending on birth weight, premature babies have peculiarities and specific characteristics related to their own immaturity. This immaturity limits the abilities needed for breastfeeding within the first hour of life, such as good coordination of the suction-deglutition-respiration cycle and the breast-seeking reflex, hypoglycemia, maternal adaptation to having a small infant and delayed lactogenesis.[9,11]

In this study we found that most infants succeeded in EIB implementation by latching on within 30-44 minutes. Similarly, Isnaini found this time to be an average of 38-42 minutes at RSI Sultan Agung, Semarang in 2009.[21] One of the components contributing to the EIB is the central component. Within the first 30 minutes of birth, healthy newborns experience a quiet alert stage, not moving and occasionally opening their eyes. This quiet period is an adjustment in the transition from inside to outside the womb.[12] Infants use sensory inputs and motor outputs to latch on, which can usually be achieved between 27 to 71 minutes.[12]

As there are obstacles to implementation of EIB and the *Baby Friendly Hospital Initiatives* (BFHI), these initiatives should be explicitly included in government and hospital policies. Mothers need ongoing encouragement and consistent support for EIB to succeed.[13-15] This requires multidisciplinary staff training and continuing support for the Baby Friendly Initiative (BFI) accreditation of maternity units.

As the conclusion, we find that the EIB implementation at Dustira Hospital is classified as good and the amount of time to latch on was 30-44 minutes.

Conflict of interest

None declared.

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