DAMPAK PEMBERIAN INISIASI MENYUSU DINI DAN AIR SUSU IBU EKSKLUSIF PADA PERTUMBUHAN BAYI USIA SATU SAMPAI ENAM BULAN

(Early Breastfeeding Initiation And Exclusive Breastfeeding Impact On Growth Of Baby From One To Six Months Of Age)

Lisa Pangemanan [1)],B.T. Ruddy Prabantoro [2)], Susan [3)]

ABSTRACT

Early breastfeeding initiation is provision of mother's breast milk to infant within one hour of birth. It is used to promote breastfeeding. Breastfeeding has many health benefit for infant because of its important nutritional contribution. Studies in developing countries has found that frequent breastfeeding is associated with greater linear growth. However, rate of exclusive breastfeeding is still low in many countries, among others, Indonesia (<40%). The low rate of exclusive breastfeeding may contribute to high malnutrition rate in children. This study aims to analyze early breastfeeding initiation and exclusive breastfeeding impact on growth of baby 1-6 months old. This is a prospective cohort study. No randomization was done. Body weight (BW), body length (BL) and head circumference (HC) were monitored and assessed monthly. Feeding options were asked monthly. Two groups available in this study were babies with early breastfeeding initiation continued with exclusive breastfeeding and babies without early breastfeeding initiation continued with exclusive breastfeeding. Sixty-seven samples were analyzed. No significant difference was found between babies who received early initiation of breastfeeding continued with exclusive breastfeeding in the 1st month in terms of BW (p=0.689), BL (p=0.810) and HC (p=0.820), 2nd month BW (p=0.644), BL (p=0.636) and HC (p=0.483), 3rd month BW (p=0.377), BL (p=0.973) and HC (p=0.580), 4th month BW (p=0.899), BL (p=0.269) and HC (p=0.534), 5th month BW (p=0.825), BL (p=0.264) and HC (p=0.454), 6th month BW (p=0.131), BL (p=0.914) and babies who did not receive that. The only significant different was found in terms of HC (p=0.036)between those group at 6th month observation. Early breastfeeding initiation continued with exclusive breastfeeding showed similar result with the other group in terms of BW, BL and HC for baby 1-6 months old except the HC in the sixth month.

Keywords: *Early breastfeeding initiation, Exclusive breastfeeding, Growth.*

ABSTRAK

Inisiasi Menyusu Dini (IMD) adalah bayi mulai menyusu sendiri dalam 1 jam setelah lahir. Inisiasi Menyusu Dini berperan meningkatkan pemberian Air Susu Ibu (ASI) eksklusif. Pemberian ASI merupakan nutrisi penting untuk kesehatan bayi. Studi di negara berkembang menemukan bahwa pemberian ASI berhubungan dengan pertumbuhan linier yang baik. Sayangnya angka pemberian ASI eksklusif masih rendah di banyak negara, antara lain Indonesia (40%). Rendahnya angka ASI eksklusif ini mungkin berperan pada tingginya angka malnutrisi pada anak. Penelitian ini bertujuan menganalisis dampak IMD dan ASI eksklusif pada pertumbuhan bayi 1-6 bulan. Desain penelitian ini adalah kohort prospektif, tidak dilakukan randomisasi. Setiap bulan dilakukan pengukuran dan penilaian berat badan (BB), panjang badan (PB) dan lingkar kepala (LK) serta pengumpulan data nutrisi yang diberikan. Terdapat 2 kelompok yaitu bayi dengan IMD dilanjutkan dengan ASI eksklusif dan bayi tanpaIMD dilanjutkan dengan ASI eksklusif. Terdapat 67 sampel yang dianalisis.Tidak didapatkan perbedaan bermakna antara kelompok yang mendapatkan IMD dilanjutkan dengan ASI eksklusif dan yang tidak dalam hal BB (p=0.689), PB (p=0.810) dan LK (p=0.820) pada bulan pertama, BB (p=0.644), PB (p=0.636) dan LK (p=0.483) pada bulan kedua, BB (p=0.377), PB (p=0.973) dan LK (p=0.580) pada bulan ketiga, BB (p=0.899), PB (p=0.269) dan LK (p=0.534) pada bulan keempat, BB (p=0.825), PB (p=0.264) dan LK (p=0.454) pada bulan kelima dan BB (p=0.131), PB (p=0.914) pada bulan keenam. Satu-satunya perbedaan yang bermakna adalah pada LK pada bulan keenam (p=0.036).Inisiasi menyusu dini yang diikuti pemberian ASI eksklusif tidak berbeda bermakna pada bayi usia 1-6 bulan kecuali untuk LK pada bulan keenam.

Kata Kunci: *Inisiasi Menyusu Dini, ASI Eksklusif, Pertumbuhan*

*1) Pediatric Department, Faculty of Medicine, Widya Mandala Catholic University, Surabaya, 2) Obstetric Gynecology Department, Faculty of Medicine, Widya Mandala Catholic University, Surabaya, 3) Medical Staff of Gotong Royong Hospital *Corresponding Author: Pediatric DeFaculty of Medicine, Widya Mandala Catholic University Surabaya, Jl. Raya Kalisari no. 1, Tower A Lt 6, Pakuwon City, Surabaya, 60265, Indonesia. Email: lisa-p@ukwms.ac.id*

INTRODUCTION

Early breastfeeding initiation is provision of mother's breast milk to infant within one hour of birth. It is used to promote breastfeeding (Roesli, 2008; WHO, 2019). Early breastfeeding initiation should be done for at least 1 hour, uninterrupted, because there are 5 stages of infant behavior needed to achieve successful first breastfeeding (Roesli, 2008).Implementation of early breastfeeding initiation promotes exclusive

breastfeeding and can prevent infant morbidity and mortality (Debes, 2013; Khan, 2015; WHO, 2019).Problem found in many countries is low rate of early breastfeeding initiation and exclusive breastfeeding, among others, Indonesia (<40% for initiation of breastfeeding and exclusive breastfeeding) (Insight, 2010; Kemenkes, 2014). Infants should be exclusively breastfed for the first six months of life to achieve optimal growth, development and health. Continued, frequent breastfeeding is associated with greater linear growth (WHO, 2019). This research aimed to see the impact of early breastfeeding initiation continued with exclusive breast feeding on growth for baby 1-6 months old.

METHODS

This is a prospective cohort, observational study. Inclusion criteria were well baby who was born in Gotong Royong hospital from July 2019-January 2020 and parents were willing to participate in this study. Exclusion criteria was baby with poor health or congenital anomaly. Drop out criteria were parents who did not want to participate in this study, loss of contact with parents, baby cannot be examined during the 6-month follow up or baby and or mother died during the 6-month follow up.

Early breastfeeding initiation means provision of mother's breast milk to infants within one hour of birth (WHO, 2019). Exclusive breastfeeding means the baby receives only breast milk, no other liquids or solids are given, not even water with the exception of oral rehydration solution or drops/syrups of vitamins, minerals or medicine (WHO, 2019). Growth was assessed by measuring body weight, body height and head circumference on monthly basis. The World Health Organization growth curves, which use the growth pattern of breastfed children as their standard were used to monitor growth. Information regarding nutrition was collected during those visits. Whenever there was a problem regarding growth problem arises, proper management was done by the research team. Two groups available in this study were babies with early breastfeeding initiation continued with exclusive breastfeeding and babies with/without early breastfeeding initiation and not continued with exclusive breastfeeding for a given period of observation. Appropriate-for age stimulation for optimal development was also given for both groups.

The COVID-19 pandemic has caused major disruption to this study because many parents did not want to be seen but still willingly contacted by phone calls. That was why, starting the 2nd month, not all baby was measured and assessed

directly (less than 67 samples) and data regarding nutrition was collected by phone calls (67 samples). Data analysis was done using SPSS. Analysis was done using t-test and Mann-Whitney.

RESULT

This research has been ethically approved by the Ethics Committee. The samples of this study were 70 babies born in Gotong Royong hospital from July 2019-January 2020 that met inclusion and exclusion criteria. There was no purposely grouping, all mothers were advised to exclusively breastfeeding. This research is a part of other research which aimed to seek the impact of early breastfeeding initiation on the health of mother and baby 0-6 months old. Because there were 3 drop out samples, only 67 samples were analyzed in this study. Due to COVID-19 pandemic, there was a constant decline in patients that were assessed directly from 67 samples in the 1st month, 66 samples in the 2nd month, 64 samples in the 3rd months, 55 samples in the 4th month, 43 samples in 5th month and 37 samples in the 6th month.

There was no significant difference in anthropometric measurement when the baby was born between those who got early breastfeeding initiation and those who did not get it (**Table 1**). There was a constant decline in number for baby who was given early breastfeeding initiation continued with exclusive breastfeeding from 20.89% in the 1st month to 13.51% in the 6th month (**Figure 1**).

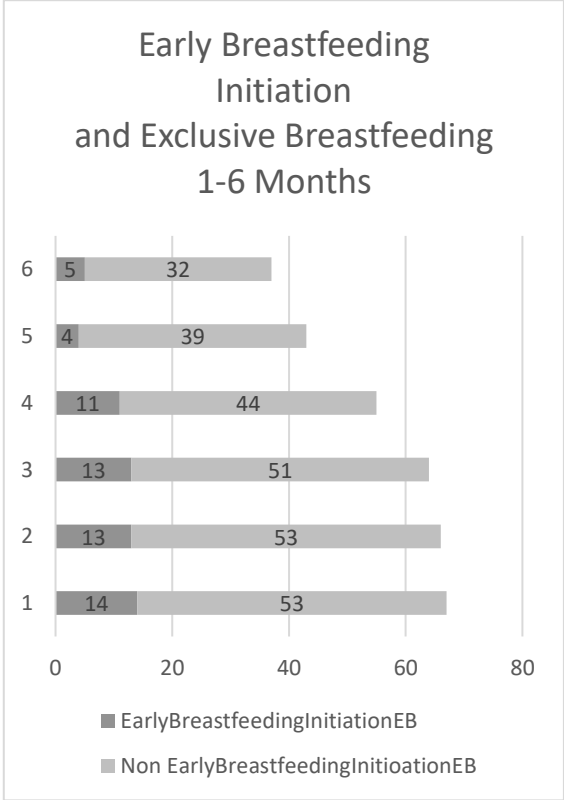

Figure 1. Rate of early breastfeeding initiation and exclusive breastfeeding from 1 to 6 month

Table 1. Baseline anthropometric measurement at birth between early initiation breastfeeding for 1 hour and the other.

At birth (n=67)	Early initiation of breastfeeding for 1 hour (n=19, 28.4%)	No early initiation of breastfeeding for 1 hour (n=48, 71.6%)	p value
Body weight (gram) mean ± SD	2.9266,3 (414.45)	3.042.7 (433.31)	0.899
Body length (cm) Mean ± SD	49.7 (1.62)	49.5 (1.94)	0.384
Head circumference (cm) mean ± SD	33.2 (1.68)	33.4 (1.58)	0.628

As summarized in table 2, no significant difference was found between babies who received early initiation of breastfeeding continued with exclusive breastfeeding in the 1st month in terms of BW (p=0.689), BL (p=0.810) and HC (p=0.820), 2nd month BW (p=0.644), BL (p=0.636) and HC (p=0.483), 3rd month BW (p=0.377), BL (p=0.973) and HC (p=0.580), 4th month BW (p=0.899), BL (p=0.269) and HC (p=0.534), 5th month BW (p=0.825), BL (p=0.264) and HC (p=0.454), 6th month BW (p=0.131), BL (p=0.914). The only significant difference found between those two groups was HC in the 6th month (p=0.036).

DISCUSSION

World Health Organization recommend to do early breastfeeding initiation. Early breastfeeding initiation is provision of mother's breast milk to infants within one hour of birth. Performing early breastfeeding initiation will provide colostrum for the newborn baby and also increase the likelihood of performing exclusive breastfeeding for 4-6 months and increase the duration of giving breastfeeding (WHO, 2019). Riset Kesehatan Dasar found that early breastfeeding initiation rate was 34.5% in 2013 (Kemenkes, 2014). In this study, only 19 (28.4%) samples have early breastfeeding initiation for 1 hour. The reason for this action among others are the medical team is busy with other chores, mother feels tired, baby has successfully latch on, baby is sleeping, and parents think early initiation of breastfeeding less than one hour is enough.

Body weight, body length and head circumference at birth do not differ between group with early breastfeeding initiation for 1 hour and group without early breastfeeding initiation for 1 hour (p=0.899; p=0.384 and p=0.628). It implies that at the beginning, those group have similar data regarding anthropometric measurement at birth.

Table 2. Baseline anthropometric measurement at 1 to 6 month between early initiation breastfeeding for 1 hour and the other.

	Early initiation of breastfeeding for 1 hour	No early initiation of breastfeeding for 1 hour	p value
First month (n=67)			
Body weight (gram) mean ± SD	4060.0 (552.28)	3988.1 (605.39)	0.689
Body length (cm) Mean ± SD	52.3 (1.87)	52.2 (2.43)	0.810
Head circumference (cm) mean ± SD	36.6 (1.58)	36.5 (1.50)	0.820
Second month (n=66)			
Body weight (gram) mean ± SD	5158.4 (683.93)	5061.1 (675.15)	0.644
Body length (cm) Mean ± SD	56.1 (1.99)	56.5 (2.49)	0.636
Head circumference (cm) mean ± SD	38.2 (1.30)	38.5 (1.28)	0.483
Third month(n=64)			
Body weight (gram) mean ± SD	6034.6 (766.86)	5828.4 (740.74)	0.377
Body length (cm) Mean ± SD	59.3 (1.88)	59.4 (2.33)	0.973
Head circumference (cm) mean ± SD	39.8 (1.80)	39.6 (1.32)	0.580
Forth month (n=55)			
Body weight (gram) mean ± SD	6502.7 (908.72)	6523.2 (847.62)	0.899
Body length (cm) Mean ± SD	61.6 (1.91)	62.4 (2.15)	0.269
Head circumference (cm) mean ± SD	41.0 (1.33)	40.7 (1.34)	0.534
Fifth month(n=43)			
Body weight (gram) mean ± SD	7222.5 (1475.81)	6919.2 (841.80)	0.825
Body length (cm) Mean ± SD	62.6 (2.86)	64.0 (2.42)	0.264
Head circumference (cm) mean ± SD	41.5 (1.73)	41.8 (1.24)	0.454
Sixth month (n=37)			
Body weight (gram) mean ± SD	7896.0 (1165.79)	7204.0 (894.25)	0.131
Body length (cm) Mean ± SD	65.4 (2.30)	65.6 (2.58)	0.914
Head circumference (cm) mean ± SD	44.3 (1.48)	42.6 (1.42)	0.036

Early breastfeeding initiation followed by exclusive breastfeeding shows consistent decline in number of exclusively breastfed baby as time goes by from 20.89% in the 1st month to 13.51% in the 6th month (figure 1). In this study, mother was always advised and supported to give exclusive breastfeeding and educated about timely appropriate feeding for baby. Despite all the effort, rate of exclusive breastfeeding for 6 months is 29.9% (20 from 67 samples). Berhanu found that non-exclusive breastfeeding rate was found to be 47% (Berhanu, 2015). Survei Demografi dan

Kesehatan Indonesia (SDKI) found that exclusively breastfed baby at 6-month old was only 42% in 2012 (Kemenkes, 2014). While Muldiasman found that early breastfeeding alone contributes to stunting prevention in children 6-59 months old, breastfeeding has bigger impact for achieving optimal growth in children (Muldiasman, 2018; Giugliani, 2019).

This study found no significant different in babies who received early initiation of breastfeeding for 1 hours continued with exclusive breastfeeding and babies who did not received it in the 1st month in terms of BW (p=0.689), BL (p=0.810) and HC (p=0.820), 2nd month BW (p=0.644), BL (p=0.636) and HC (p=0.483), 3rd month BW (p=0.377), BL (p=0.973) and HC (p=0.580), 4th month BW (p=0.899), BL (p=0.269) and HC (p=0.534), 5th month BW (p=0.825), BL (p=0.264) and HC (p=0.454), 6th month BW (p=0.131), BL (p=0,914). Exclusively breastfed infants show differentiated growth when compared to formula fed infants. Formula fed infants gain weight and increase their BMI more rapidly in the first 3-6 months of life than infants in exclusive or predominant breastfeeding (Giugliani, 2019). Exclusive breastfeeding of infants under 6 months is associated with higher mean length-for age and weight-for-age. Promotion of exclusive breastfeeding in low-income countries is important in preventing growth retardation (Kuchenbecker, 2015). This study showed different result. The growth of both group is similar in terms of body weight and body length. It can be caused by the small sample size or by the intervention given by the research team to achieve optimal growth for both groups.

The only significant different was found between babies who received early breastfeeding initiation for 1 hour continued with exclusive breastfeeding in the 6th month in terms of HC (p=0,033), despite intervention given by the research team to achieve optimal growth for both groups. Early breastfeeding initiation for 1 hour continued with exclusive breastfeeding group has a bigger head circumference in the 6th month observation compares to the other group. Several other studies show that exclusive breastfeeding ≥4 months decrease the risk of head circumference deficit. Exclusive breastfed infants do have better head circumference compared to formula fed infants (Jaldin, 2011; Ferreira, 2013; Ananta, 2016; Malekzadeh, 2019)

CONCLUSION

Early breastfeeding initiation followed by exclusive breastfeeding for 6 months is the best for all baby. Whenever early breastfeeding initiation and exclusive breastfeeding for 6 months cannot be done, every attempt need to be done to achieve

optimal growth for those babies by providing optimal nutrition and continuous monitoring. Anthropometric assessment in this study shows similar result between 2 groups except for head circumference in 6 months.

REFERENCES

1. Ananta Y, Gandaputra E, Waiman E, Partiwi IGN, Marzuki NS, Yohmi E, et al. Exclusive breastfeeding rate and factors associated with infant feeding practices in Indonesia. Paediatrica Indonesiana. 2016; 56(1):24-31.
2. Berhanu M, Zemene W, Mekonnen M. Breastfeeding to infants within the first 6 months in Gondar Town, Northwest Ethiopia, 2014. Advances in nursing. 2015.Article ID 142319,7 pages. http://dx.doi.org/10.1155/2015/142319.
3. CDC. CDC releases 2018 breastfeeding report card.2018; https://www.cdc.gov/media/releases/2018/p0820-breastfeeding-report-card.html#:~:text=Highlights%20from%20the%202018%20Breastfeeding%20Report%20Card%20show%3A&text=Almost%20half%20(46.9%20percent)%20were,provide%20worksite%20lactation%20support%20programs.Accessed Sept 1st 2020.
4. Debes AK, Kohli A, Walker N, Edmon K, Mullany LC. Time to initiation of breastfeeding and neonatal mortality and morbidity: a systematic review. BMC Public Health. 2013;13(3):S19.
5. Donma MM and Donma O. The influence of feeding patterns on head circumference among Turkish infants during the first 6 months of life. Brain&Dev.1997;19:393-7.
6. Ferreira HdS, Junior AFSX, de Assuncao ML, dos Santos EA, Horta BL. Effect of breastfeeding on head circumference of children from impoverished communities. Breastfeeding Med. 2013;8(3):294-301. DOI 10.1089/bfm.2012.0105
7. Giugliani ERJ. Growth in exclusively breastfed infants. J de Pediatria. 2019;95(1):79-84.
8. Jaldin MdGM, Pinheiro FS., dos Santos AM, Muniz NC, Brito LMO. Head circumference growth of exclusively breastfed infants during the first six months of life. Rev Paul Pediatr. 2011;29(4):509-14.
9. Insight. Impact of early initiation of exclusice breastfeeding on newborn deaths.2010;https://www.tensteps.org/pdf/impact-of-early-initiation.pdf. Accessed: April 10th 2019.

10. Kementerian Kesehatan RI. Situasi dan analisis ASI eksklusif. 2014;pusdatin.kemkes.go.id. Accessed: April 9th 2019.
11. Khan J, Vesel L, Bahl R, Martines JC. Timing of breastfeeding initiation and exclusivity of breastfeeding during the first month of life: effects on neonatal mortality and morbidity-a systematic review and meta-analysis. Matern Child Health J. 2015;19(3):468-79.
12. Kuchenbecker J, Jordan I, Reinbott A, Herrmann J, Jeremias T, Kennedy G, et al.Exclusive breastfeeding and its effect on growth of Malawian infants: result from a cross-sectional study. Paediatr Int Child Helath. 2015; 35(1):14-23
13. Malekzadeh J, Synaii S, Koor BE, Falsafian G, Nakhaie M. Growth indices of exclusively breastfed until 6 months age and formula-fed infants in Southwest Iran. Int J Prev Med.2019;10:207.DOI10.4103/ijpvm.IJPVM_36_18:10.4103/ijpvm.IJPVM_36_18
14. Muldiasman, Kusharisupeni, Laksminingsih E, Besral. Can early initiation of breastfeeding prevent stunting in 6-59 months old children? J of Health Resrch. 2018; 32(5):334-41.DOI10.1108/JHR-08-2018-038.
15. Roesli U. Inisiasi Menyusu Dini plus ASI eksklusif. Jakarta: Pustaka Bunda.2008;. page 1-70
16. WHO. Early initiation of breastfeeding to promote exclusive breastfeeding.2019;https://www.who.int/elena/titles/early_breastfeeding/en/. Accessed: April 9th 2019.
17. WHO. Continued breastfeeding for healthy growth and development of children.2019;https://www.who.int/elena/titles/continued_breastfeeding/en/. Accessed: September 1st 2020

…

…

,,,

.
…