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Postpartum Long-Acting Reversible Contraception Use in Adolescent at Maharat Nakhon Ratchasima Hospital

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ABSTRACT

Objective: To determine the intention and using of long-acting reversible contraception (LARC) in adolescents in the postpartum period.

Material and Method: A prospective cohort study was conducted at Maharat Nakhon Ratchasima hospital, from June 2014 to November 2014. Postpartum adolescents under the age of 20 who willing to participate were enrolled in this study. A structured interview questionnaire was used to determine the intention of contraceptive use prior to discharge. Then, phone interviewed at 12 weeks postpartum to determine contraceptive use and reasons.

Results: Three hundred and ninety eight of 456 adolescents had a documented postpartum visit at 12 weeks, giving an overall response rate of 87.3%. 336 adolescents (73.7%) intended to use LARC prior to discharge and 209 adolescents (56.9%) had used LARC within 12 weeks postpartum. The most common reason of LARC use was convenience. Injectable contraception was the most common LARC used that included 54.77% of participants. Intended birth interval and pregnancy desire were significant factor of choosing LARC at postpartum ward. Significant factors associated with using LARC at 12 weeks postpartum were intended birth interval and previous contraception.

Conclusions: The intention to use LARC was 73.7% and the using rate of LARC at 12 weeks postpartum was 56.9%. Convenience was the most common reason of LARC use at 12 weeks postpartum.

Keywords: long-acting reversible contraception, adolescent pregnancy, postpartum

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Introduction

Adolescent pregnancy is one of the most important problems in many countries, including Thailand. Complication during pregnancy and childbirth are the second cause of death for 15-19 year-old girls globally[1]. Newborns born to adolescent mothers are also more likely to have low birth weight, with the risk of long-term effects. Additionally, unintended pregnancy may cause unsafe abortion, child abandonment, negative social and economic effects on girls, their

families and communities in the future[1-2].

Adolescent birth rate is one of the Millennium development goal (MDGs) indicators[2]. World Health Organization (WHO) data in 2014 indicates that the global adolescent birth rate is 49 per 1000 girls[2]. In Thailand, the adolescent birth rate is 53.8 per 1,000 girls, which has been an increasing trend over the past 10 years[3]. The data demonstrates that, the prevention of adolescent pregnancy is not effective[3]. Long acting reversible contraception (LARC) has been one of the most effective contraception to reduce adolescent pregnancy due to the long action and continuation[4].

Long acting reversible contraception (LARC), the method of birth control that requires administration less than once per cycle or month, refers to the progestin-only implant (Implant), Levonogestrel intrauterine device (LNG-IUD), copper intrauterine device (Cu-IUD), and the progestin-only injection (Injection)[5]. LARCs are considered as the most effective contraceptive methods with low failure rates in typical use over the first year as 0.05%, 0.1%, 0.8% and 3% when using Implant, LNG-IUD, Cu-IUD, and Injection respectively[6].

In 2013, the study in Maharat Nakhon Ratchasima hospital revealed 97.9% of postpartum adolescences intended to use contraception prior to discharge[7]. However, there was no evidence of actual use. Rapidly increasing adolescent pregnancy and ineffective contraceptive methods, this study aims to determine the intended of LARC use prior to discharge and actual LARC use at 12 weeks postpartum. The results of the study could be used to know the real situation of our adolescence and planning to overcome the increasing adolescent pregnancy.

Materials and Methods

A prospective cohort study was conducted at Maharat Nakhon Ratchasima hospital from June 1, 2014 to November 30, 2014. The study was approved by the Ethics committee of Maharat Nakhon Ratchasima Hospital.

We consecutively enrolled 456 postpartum adolescents under the age of 20 who participate in the study. The participants who requested sterilization and those who could not be contacted within 7 days at 12 weeks postpartum were excluded.

The participants were interviewed on the day after delivery, using structured interview questionnaires on basic demographics, gravida, education, occupation, family income per month, prenatal care, gestational age at delivery, route of delivery, previous contraception, pregnancy intentions, marital relationship and intended birth interval.

Then the researcher provided information of contraception as well as risk and benefit of each method. This study used individual counselling of 15 minutes for each session, not including their partners and parents. The processes carried out by the same researcher throughout the study. On the day of the hospital discharge, the participants were interviewed at postpartum adolescent clinic for contraceptive intention. Next, the researcher phone calls at 12 weeks postpartum to determine postpartum contraception use and reasons for using their methods. If could not be contacted within 7 days after 12 weeks postpartum period, the participants were be group of lost follow-up. LARC in the study included injectable contraception, implant and IUDs, but non-LARC were classified as oral contraceptive pills and condom. Adolescents who were not start using contraception not included in non-LARC group.

Sample size estimation was calculated using (Estimating a single proportion) $N= Z^2 \alpha/2 \times P (1-P) / \Delta^2$ where N was the required sample size, P was the expected proportion (0.54)[7] and Δ^2 was width of confidence interval $(0.05)^2$, then N = 382 and plus 15% loss = 58 total sample size required was 440 postpartum adolescents.

Data was analyzed with chi square test and the effects were summarized using 95% confidence interval (CI), $p<0.05$ was considered statistically significant. Stata statistical software version 12 was used for data analysis.

Results

Five hundred consecutive eligible postpartum adolescents were asked for willing of participation to the study. Fourteen adolescents refused to participate, 4 adolescents refused to use all types of birth control,

26 adolescents requested sterilization. Data of 456 adolescents were obtained prior to discharge. Three hundred and ninety-eight out of 456 (87.3%) were interviewed by telephone at 12 weeks postpartum. Fifty-eight adolescents were excluded due to being lost to follow-up. At 12 weeks postpartum, thirty-one adolescents (7.8%) did not start using contraception, 367 adolescents had used contraception. In fact, 209 adolescents (56.9%) used LARC method and 158 adolescents (43.1%) used non-LARC method.

Maternal characteristics of our study were shown in Table 1. Half of the participants were late adolescents (51.4%). The mean age was 17.5 ± 1.4 years. Most were primiparous (86.2%), 75.2% were undesired pregnancies and 61.2% had history of previous contraception use. The results of the study revealed that 336 adolescents (73.7%) intended to use LARC prior to discharge and 209 adolescents (56.9%) used LARC at 12 weeks postpartum.

Table 1. Maternal characteristics.

Adolescent pregnancy	**N (%) = 456**
Age, (Mean age ± SD) years	17.5 ± 1.4
< 14	4 (0.9)
14-18	216 (47.4)
>18	236 (51.7)
Parity	
Primiparous	393 (86.2)
Multiparous	63 (13.8)
Education	
No education	2 (0.4)
Primary School	33 (7.2)
Secondary School	376 (82.5)
Vocational college or higher	45 (9.9)
Occupation	
Student	103 (22.6)
Others	353 (77.4)
Family income per month (baht)	
≤ 5,000	76 (16.7)
5,001-10,000	268 (58.8)
10,001-15,000	69 (15.1)
15,001-20,000	31 (6.8)
> 20,000	12 (2.6)
Antenatal care	
No ANC	13 (2.9)
Early ANC (<12 weeks)	153 (33.5)
Late ANC (≥12 weeks)	290 (63.6)
Gestational age at delivery	
<34 weeks	34 (7.5)
34 - 37 weeks	59 (12.9)

Table 1. Maternal characteristics. (Cont.)

Adolescent pregnancy	N (%) = 456
> 37 weeks	363 (79.6)
Route of delivery	
Vagina	313 (68.6)
Cesarean section	143 (31.4)
Previous contraception	
No	177 (38.8)
Yes	279 (61.2)
Pregnancy desire	
Undesired	343 (75.2)
Desired	113 (24.8)
Marital relationship	
Stay together	426 (93.4)
Not stay together	30 (6.6)
Intended birth interval	
> 5 years	133 (29.2)
≤ 5 years	165 (36.2)
Not sure	158 (34.6)

Table 2. Characteristic of adolescence and intention to use LARC.

Adolescent pregnancy	Intended to use LARC N (%) =336	Intended to use non- LARC N (%) =120	Odds ratio (95% CI)	P
Age, years				
≤18	170 (50.6)	50 (41.7)	1.43 (0.92-2.24)	0.093
>18	166 (49.4)	70 (58.3)	1	
Parity				
Primiparous	283 (84.2)	110 (91.7)	0.48 (0.21-1.01)	0.061
Multiparous	53 (15.8)	10 (8.3)	1	
Education				
< Vocational college	299 (89)	112 (93.3)	0.58 (0.23-1.31)	0.171
≥ Vocational college	37 (11)	8 (6.7)	1	
Occupation				
Student	81 (24.1)	22 (18.3)	1.42 (0.82-2.52)	0.194
Others	255 (75.9)	98 (81.7)	1	
Family income per month				
< 10,000	260 (77.4)	84 (70)	1.47 (0.89-2.39)	0.107
≥ 10,000	76 (22.6)	36 (30)	1	

Table 2. Characteristic of adolescence and intention to use LARC. (Cont.)

Adolescent pregnancy	Intended to use LARC N (%) =336	Intended to use non- LARC N (%) =120	Odds ratio (95% CI)	P
Antenatal care				
No or late ANC	223 (66.4)	80 (66.7)	0.98 (0.62-1.57)	0.953
Early ANC (<12wks)	113 (33.6)	40 (33.3)	1	
Gestational age at delivery				
< 37 weeks	70 (20.8)	23 (19.2)	1.11 (0.64-1.97)	0.697
≥ 37 weeks	266 (79.2)	97 (80.8)	1	
Route of delivery				
Vagina	230 (68.4)	83 (69.2)	0.97 (0.60-1.55)	0.880
Cesarean section	106 (31.6)	37 (30.8)	1	
Previous contraception				
No	121 (36)	56 (46.7)	0.643 (0.41-1.00)	0.0398
Yes	215 (64)	64 (53.3)	1	
Pregnancy desire				
Undesired	268 (79.8)	75 (62.5)	2.36 (1.46-3.82)	0.0002*
Desired	68 (20.2)	45 (37.5)	1	
Marital relationship				
Stay together	319 (94.9)	107 (89.2)	2.28 (0.98-5.16)	0.029
Not stay together	17 (5.1)	13 (10.8)	1	
Intended birth interval				
> 5 years	102 (30.4)	17 (14.2)	3.8 (2.02-7.39)	< 0.001*
≤ 5 years	101 (30.1)	64 (53.3)	1	
Not sure	133 (39.5)	39 (32.5)	-	

*p ≤ 0.05

Table 3. Factors associated with using or non-using LARC within 12 weeks postpartum.

Adolescent pregnancy	LARC used N (%)=209	Non-LARC used N (%)=158	Odds ratio (95% CI)	P
Age, years				
≤ 18	107 (51.2)	69 (43.7)	1.35 (0.87-2.09)	0.153
> 18	102 (48.8)	89 (56.3)	1	
Parity				
Primiparous	176 (84.2)	142 (89.8)	0.60 (0.30-1.18)	0.114
Multiparous	33 (15.8)	16 (10.2)	1	
Education				
< Vocational college	186 (89)	142 (89.9)	0.91 (0.43-1.88)	0.787
≥ Vocational college	23 (11)	16 (10.1)	1	

Table 3. Factors associated with using or non-using LARC within 12 weeks postpartum. (Cont.)

Adolescent pregnancy	LARC used N (%)=209	Non-LARC used N (%)=158	Odds ratio (95% CI)	P
Occupation				
Student	159 (76.1)	122 (77.2)	0.94 (0.56-1.57)	0.799
Others	50 (23.9)	36 (22.8)	1	
Family income per month				
≤ 10,000	163 (78)	113 (71.5)	1.41 (0.85-2.33)	0.155
> 10,000	46 (22)	45 (28.5)	1	
Antenatal care				
No or late ANC	144 (68.9)	102 (64.6)	1.22 (0.77-1.93)	0.381
Early ANC (< 12weeks)	65 (31.1)	56 (35.4)	1	
Gestational age at delivery				
< 37 weeks	46 (22)	29 (18.4)	1.26 (0.77-2.20)	0.390
≥ 37 weeks	163 (78)	129 (81.6)	1	
Route of delivery				
Vagina	143 (68.4)	108 (68.4)	1.02 (0.64-1.63)	0.919
Cesarean section	66 (31.6)	50 (31.6)	1	
Previous contraception				
No	74 (35.4)	73 (46.2)	0.64 (0.41-0.99)	0.036*
Yes	135 (64.6)	85 (53.8)	1	
Pregnancy desire				
Undesired	163 (78)	110 (69.6)	1.55 (0.94-2.55)	0.069
Desired	46 (22)	48 (30.4)	1	
Marital relationship				
Stay together	200 (95.7)	148 (93.6)	1.50 (0.53-4.29)	0.386
Not stay together	9 (4.3)	10 (6.4)	1	
Intended birth interval				
> 5 years	59 (28.2)	34 (21.5)	1.79 (1.01-3.18)	0.034*
≤ 5 years	67 (32.1)	69 (43.7)	1	
Not sure	83 (39.7)	55 (34.8)	-	

*p ≤ 0.05

Table 4. Reasons for LARC use at 12 weeks postpartum.

Reasons	N (%)
Convenience	87 (41.6)
Poor compliance for oral pills	79 (37.8)
Long duration of contraception	33 (15.8)
Suggested by relatives	7 (3.4)
No effect on breast feeding	3 (1.4)
Total	209 (100%)

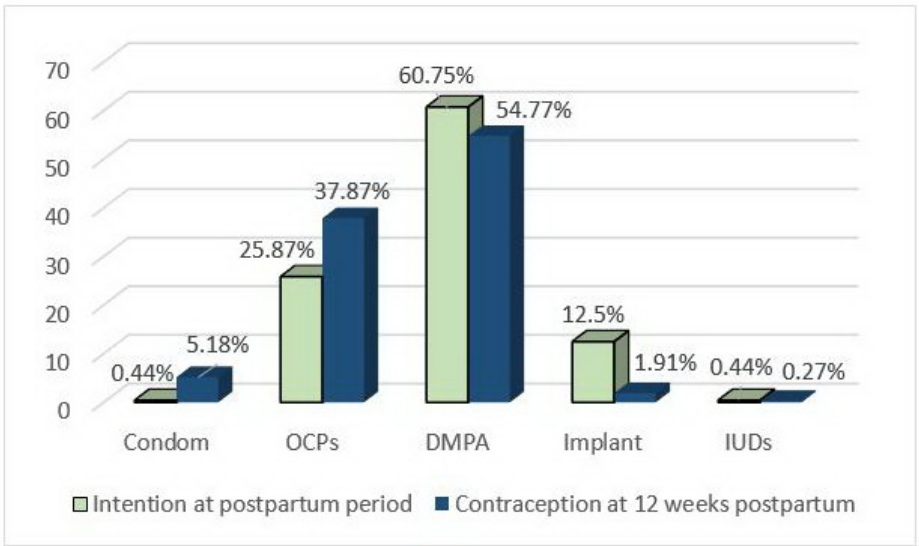

Fig. 1. Types of contraceptive intention at postpartum ward and contraception at 12 weeks postpartum.

Discussion

In the study, 73.7% of the postpartum adolescents intended to use LARC, comparing to the previous study in Maharat Nakhon Ratchasima Hospital which indicated that the rate of intention to use LARC was only 53.6%[7]. The difference in percentage would be from difference in contraceptive counselling method. This study used individual counselling instead of group counselling, allowing the researcher to clarify common myths and misconceptions about contraception[10]. The rate of actual LARC used at 12 weeks postpartum was 56.9%.

Our findings are similar to the study by the University of Colorado that assessed the rate of LARC desire at the 3rd trimester and the rate of actual LARC used within 3 months postpartum were 65% and 50% respectively[11]. The difference in percentage of actual LARC use in two studies may be due to including the injectable contraception as LARC in our study.

The findings from the study in Ramathibodi hospital differed from our findings. The rate of intention to use LARC and actual LARC use were 36% and 32.1% respectively[12], the difference in percentage would be from the different age interval of the sample group.

Percentage of the intended birth interval of greater than 5 years was significantly higher in LARC group than in non-LARC group for both LARC desired and actual LARC used at 12 weeks postpartum. It appears that women with an intended birth interval of greater than 5 years were likely to choose LARCs because they need a longer period of time before their next pregnancy and LARC appears the most suitable method for them[13].

Furthermore, the study found that percentage of pregnancy desire had a significant impact on LARC desire prior to discharge. In fact, the undesired pregnancy group used LARC 2.36 times more than the desired group. However, at 12 weeks postpartum, there appears no difference in percentage between both groups. The reason lies in the fact that teenagers are vulnerable, emotionally unstable, and indecisive[14]. The initiation of contraception in the postpartum period offers the advantage of high patient motivation and has a profound effect on contraceptive desires[15]. Nevertheless, after a period of time, the LARC use rate dropped because of the adolescents trended to switch back to their old habit and stop using birth control.

Percentage of previous contraception in LARC desire group prior to discharge was not different significantly. However, percentage of previous contraception in LARC use group at 12 weeks

postpartum was higher than non-LARC significantly. It appears that the group that had a history of contraception used were likely to choose LARC. Prior to pregnancy, the most common use contraceptive method were male condom and oral contraceptive pill[9], on which they became pregnant unintentionally. From those experiences, they were then worried about repeated pregnancy and likely to choose more effective contraception.

Percentage of educational level was not different significantly between LARC and non-LARC group. The results was similar to the previous study in Maharat Nakhon Ratchasima hospital. Nonetheless, the findings of the study were different from that of in Ramathibodi hospital that showed that occupation was a significant factor[12] due to the different age interval of sample group.

It is interesting that there were important reasons for less number of adolescents finally deciding to use LARC than they initially intended to do so. Adolescents who choose LARC methods for postpartum contraception often face barriers to initiation, including financial problems, and difficult to received LARC device[16]. In the study we were not able to offer free implant at that time. For most adolescents who had low household income, they then perceived barrier to obtaining contraception. Lastly, adolescents may not be comfortable with some contraceptive procedures, for example, adolescents may feel IUDs invasive and painful[17, 18].

Injectable contraception was the most common method of LARC used at 12 weeks postpartum. It could be convenience, low price, and no effect on breast-feeding. Our findings were also the same with Ministry of public health data, that injectable contraception was the most popular LARC used in Thailand[3].

A strengths of our study was its relatively large population with 456 adolescent mothers enrolled and a response rate of 87.3%.

Limitations of our study were that interviews were not focused on side effects of LARC, the effects of LARCs on breastfeeding, the use of condoms for dual protection or the first sexual intercourse postpartum.

In conclusion, in Maharat Nakhon Ratchasima hospital, LARC is highly desired and use at 12 weeks postpartum in adolescents. Percentage of intended birth interval and pregnancy intention in the group that intended to use LARC prior to discharge is higher than non LARC significantly. Percentage of intended birth interval and previous contraception in LARC used group is higher than non LARC group significantly. Convenience was the most common reason for LARC utilization at 12 weeks postpartum.

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การศึกษาการเลือกใช้การคุมกำเนิดแบบออกฤทธิ์นานในสตรีวัยรุ่นหลังคลอดบุตรที่โรงพยาบาลมหาราชนครราชสีมา

ลลิตา ทรงสถาพร, สิรยา กิติโยดม

วัตถุประสงค์ *: เพื่อศึกษาอัตราสตรีวัยรุ่นที่ตั้งใจจะใช้วิธีคุมกำเนิดชนิดที่ออกฤทธิ์นานในช่วงที่อยู่โรงพยาบาลหลังคลอดและอัตราการใช้วิธีคุมกำเนิดดังกล่าวภายในระยะเวลา 12 สัปดาห์หลังคลอด ในสตรีวัยรุ่นหลังคลอดที่โรงพยาบาลมหาราชนครราชสีมา*

วิธีการ *: การศึกษาแบบ prospective cohort study ศึกษาที่ภาควิชาสูติศาสตร์นรีเวชวิทยา โรงพยาบาลมหาราชนครราชสีมา ตั้งแต่เดือนมิถุนายน พ.ศ.2557 ถึง พฤศจิกายน พ.ศ.2557 ศึกษาในสตรีวัยรุ่นหลังคลอดที่มีอายุน้อยกว่า 20 ปี และยินยอมเข้าร่วมการวิจัย โดยทำการสัมภาษณ์ตามแบบสัมภาษณ์ที่หอผู้ป่วยหลังคลอด โดยสัมภาษณ์ถึงความตั้งใจที่จะคุมกำเนิดและวิธีที่จะใช้คุมกำเนิด และสัมภาษณ์อีกครั้งในระยะเวลา 12 สัปดาห์หลังคลอด ถึงวิธีการคุมกำเนิดที่ได้ใช้จริงพร้อมเหตุผลที่เลือกใช้*

ผลการศึกษา *: มีผู้เข้าร่วมทั้งหมด 456 คน ติดตามได้ภายใน 12 สัปดาห์หลังคลอด 398 คน (87.3%) พบว่า 336 คน (73.7%) มีความตั้งใจจะใช้วิธีคุมกำเนิดชนิดที่ออกฤทธิ์นานในช่วงที่อยู่ที่หอผู้ป่วยหลังคลอด และ 209 คน (56.9%) ได้ใช้วิธีดังกล่าวภายในระยะเวลา 12 สัปดาห์หลังคลอด วิธีคุมกำเนิดใช้มากที่สุดที่ 12 สัปดาห์หลังคลอด คือยาฉีดคุมกำเนิด 54.77% เหตุผลที่เลือกใช้คือ สะดวก กลัวลืมรับประทานยาเม็ดคุมกำเนิด และต้องการคุมกำเนิดระยะนาน ปัจจัยที่มีผลต่อความตั้งใจที่จะใช้ LARC ในช่วงที่อยู่ที่หอผู้ป่วยหลังคลอด คือระยะเวลาที่ต้องการเว้นการมีบุตร และความตั้งใจในการตั้งครรภ์ครั้งนี้ กลุ่มที่ต้องการเว้นการมีบุตรนานมากกว่า 5 ปี เลือกใช้ LARC มากกว่า 3.8 เท่า (2.02-7.39) P < 0.001 กลุ่มที่ไม่ได้ตั้งใจตั้งครรภ์ครั้งนี้เลือกใช้ LARC มากกว่า 2.36 เท่า (1.46-3.82) P = 0.0002 และปัจจัยที่มีผลต่อการใช้ LARC จริงเมื่อ 12 สัปดาห์หลังคลอด คือ ระยะเวลาที่ต้องการเว้นการมีบุตร และประวัติการคุมกำเนิดมาก่อน กลุ่มที่ต้องการเว้นการมีบุตรนานมากกว่า 5 ปี เลือกใช้ LARC มากกว่า 1.79 เท่า (1.01-3.18) P = 0.034 และกลุ่มที่ไม่เคยคุมกำเนิดมาก่อนเลือกใช้ LARC น้อยกว่า 0.64 เท่า (0.41-0.99) P = 0.036*

สรุป *: ร้อยละ 73.7 ของสตรีวัยรุ่นตั้งใจจะใช้วิธีคุมกำเนิดชนิดที่ออกฤทธิ์นานในช่วงที่อยู่ที่หอผู้ป่วยหลังคลอด และเพียงร้อยละ 56.9 ใช้วิธีคุมกำเนิดที่ออกฤทธิ์นานภายในระยะเวลา 12 สัปดาห์หลังคลอด ซึ่งเหตุผลหลักที่เลือกใช้คือสะดวก*