ORIGINAL ARTICLE

Contraception method among pregnant women with HIV delivered in Cipto Mangunkusumo General Hospital, Jakarta, Indonesia

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ABSTRACT

Objectives: The aim of this study was to describe characteristics of contraceptive methods among women with HIV infection who delivered in a tertiary hospital.

Materials and Methods: This was a cross-sectional study. The inclusion criteria were pregnant women with HIV infection who delivered in Cipto Mangunkusumo General Hospital (RSCM), Jakarta, Indonesia, from January 2016 to December 2020. Data were retrieved from medical records, registered HIV and laboratory result. The included data were demographic data, obstetric data, mode of delivery, contraception method, ARV history, and laboratory history of the mothers.

Results: From January 2016 to December 2020 there were 119 HIV patients who delivered at the RSCM. Most of the subjects were 35 years old (84%), had low education (52.9%) and worked as housewives (76.5%). A total of 79.8% of the subjects were gravida ≥2 and most of the subjects delivered by caesarean section (87.3%). The choice of contraceptive methods were IUD (72.4%), tubectomy (26.8%) and implants (0.8%). There was a statistically significant relationship between contraceptive method with age (p 0.040), gravida (p 0.016) and delivery method (p 0.049)

Conclusion: The most common contraceptive method was IUD. The choice of this method of contraception was related to age, gravida and method of delivery.

Keywords: Contraception; post-partum; HIV; IUD; gravida; method of delivery

ABSTRAK

Tujuan: Tujuan dari penelitian ini adalah untuk mendeskripsikan karakteristik metode kontrasepsi pada wanita dengan infeksi HIV yang melahirkan di sebuah rumah sakit tersier.

Bahan dan Metode: Penelitian ini merupakan penelitian *cross-sectional*. Kriteria inklusi adalah ibu hamil dengan infeksi HIV yang melahirkan di Rumah Sakit Cipto Mangunkusumo (RSCM), Jakarta, Indonesia, dari Januari 2016 sampai Desember 2020. Data diambil dari rekam medis, status HIV dan hasil laboratorium. Data yang disertakan adalah data demografi, data obstetri, metode persalinan, metode kontrasepsi, riwayat ARV, dan riwayat laboratorium pada ibu.

Hasil: Sejak Januari 2016 hingga Desember 2020 terdapat 119 pasien HIV yang melahirkan di RSCM. Sebagian besar subjek berusia ≤35 tahun (84%), berpendidikan rendah (52,9%) dan bekerja sebagai ibu rumah tangga (76,5%). Sejumlah 79.8% subjek adalah gravida ≥2 dan sebagian besar subjek melahirkan melalui operasi caesar (87,3%). Pemilihan metode kontrasepsi adalah IUD (72,4%), tubektomi (26,8%) dan implan (0,8%). Terdapat hubungan bermakna secara statistik antara metode kontrasepsi dengan umur (p 0.040), gravida (p 0.016) dan metode persalinan (p 0.049)

Simpulan: Metode kontrasepsi yang terbanyak adalah IUD. Pemilihan metode kontrasepsi ini berhubungan dengan usia, gravida dan metode persalinan.

Kata Kunci: Kontrasepsi; post-partum; HIV; IUD; gravida; metode persalinan

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INTRODUCTION

In Indonesia, the number of people with HIV infection has also increased and also attacks young people. Until 2016, the number of HIV cases was 191,073 and AIDS 77,940.[1] There are more than 15 million pregnant women with HIV infection in developing countries and more than 500,000 HIV-infected babies were born every year. Based on previous studies, it was found that 2.5% of 21,103 pregnant women were diagnosed with HIV positive in 2011 in Indonesia.[2] Based on data in Cipto Mangunkusumo General Hospital (RSCM), Jakarta, Indonesia, in 2015-2019 there were 5.596 deliveries.[3] There were 20, 29, 21, 26 and 25 pregnant women diagnosed with HIV positive in those respective years with a total of 111 (1.9%) from 5.596 deliveries. In this study we observed data from 2016-2020 in which there were 119 HIV positive pregnancy deliveries.

In order to reduce HIV transmission from HIV positive mothers to their children, it is necessary to strengthen family planning programs and better integrate family planning and HIV services.[4] WHO sets the Medical Eligibility Criteria (MEC) category 1, in which there is no limit on the use of contraceptive methods, on the use of hormonal contraceptives, such as combined oral pills, combined contraceptive injection, patch, ring, pill and progestogen injection, as well as levonorgestrel and etonogestrel. Meanwhile, the use of LNG-IUD (levonor-gestrel-intrauterine device) in HIV-positive women is classified as MEC category 2, which means that the benefits obtained are higher than the disadvantages of using contraception. Despite having lower MEC value, intrauterine devices (IUDs) is widely used in women with HIV positive cases, reaching 2.9% in women who are not infected with HIV.[5] HIV patients must use family planning to reduce the number of children.

MATERIALS AND METHODS

This study design was a cross-sectional study. The population of the study was all pregnant and in labor women with HIV infection at RSCM from January 2016 up to December 2020. The inclusion criteria were pregnant women with HIV infection delivered at RSCM. The exclusion criteria were pregnant women with HIV infection who came to RSCM but did not deliver at RSCM. Respondents were recruited with total sampling method. Primary outcome of this study was contraception used by patients typically referred to our hospital due to their obstetric problem and/or their HIV status. Once the patients give birth, the obstetric care in coordination with HIV integrated service, especially for HIV, as well as co-morbidity and ARV treatment, offer the patients with some contraceptive methods. The aim of this study was to observe the choice of contraception methods and the characteristic of each methods.

In the proccess of the study, we retrieved the registration book of pregnant patients who delivered in the delivery room. From these data, we obtained data on pregnant patients with HIV. The data was retrieved from medical records, HIV registry and laboratory results. Maternal demographic status observed consisting of age, education, and employment. The obstetric status comprised contraceptive method, the parity, gestational age at admission, delivery method, and neonatal outcome. HIV status of the mothers consisted of ARV consumption, CD4 level and viral load level. The collected data were presented as distribution and displayed in tables as number and percentage. Statistical analysis was performed using SPSS 23. Multiple Anova test was used for multiple variables. The level of significance was set to $p<0.05$ This study had been approved by Ethical Committee of Faculty of Medicine Universitas Indonesia. No.: KET-169/UN2.F1/ETIK/ PPM.00.02/2021

RESULTS AND DISCUSSION

There were a total of 119 pregnant women with HIV who delivered at RSCM from January 2016 to December 2020. Demographic data showed that most women were at ≤35 years old (n=100, 84%). Most of the subjects' last education was junior high school (n=55, 46.2%). Ninety-one pregnant women worked as housewife (76.5%).

On the obstetric status, most subjects had a history of multigravida ≥2 (n=95, 79.8%). They usually came at third trimester, with gestational age >36 weeks (n=93, 78.2%) and delivered by cesarean section (n=104, 87.3%). For the contraception method, there were 86 subjects (72.4%) using IUD, 32 subjects (26.8%) underwent tubectomy during cesarean section and 1 subject (0.8%) using implant as contraception method. Among all babies born from the observed mothers, 118 were alive. Detailed data on distribution of maternal obstetric status can be seen on Table 1. From 104 cesarean section, 31 (29.8%) patient used tubectomy as contraception method, while from 15 patient with vaginal delivery only 1 patient used tubectomy.

Ninety subjects (75.6%) had received ARV therapy, while 29 subjects (24.4%) had not received ARV. Unfortunately, data on the husbands' HIV status, maternal CD4 level and viral load were mostly not available (74.9%, 58% and 73%). Distribution of maternal HIV status can be seen on Table 2.

Table 1. Distribution of maternal characteristic (2016-2020) (n=119)

Characteristic of subjects	n (%)
Age	
≤35 years	100 (84)
>35 years	19 (16)
Education	
Elementary	8 (6.7)
Junior high school	55 (46.2)
Senior high school	49 (41.2)
S1/Diploma	7 (5.9)
Employement	
Housewife	91 (76.5)
Employee	20 (16.8)
Self-employee	3 (2.5)
Others	5 (4.2)
Mode of delivery	
Vaginal delivery	15 (12.7)
Cesarean section	104 (87.3)
Contraception Method	
Implant	1 (0.8)
IUD	86 (72.4)
Tubectomy	32 (26.8)
Gravida	
1	24 (20.2)
≥ 2	95 (79.8)
Gestational age	
<32 weeks	3 (2.5)
32-36 weeks	23 (19.3)
>36 weeks	93 (78.2)
Neonatal outcome	
Live	118 (99.2)
IUFD	1 (0.8)

Table 2. Distribution of HIV status of the mothers

Characteristic of subjects	n (%)
ARV medication	
- On ARV	90 (75.6)
- Not yet therapy	29 (24.4)
Husband HIV status	
- Positive	11 (9,2)
- Negative	19 (15.9)
- No data	89 (74.9)
Mother's CD4 level	
- < 400 sel/uL	30 (25.2)
- ≥ 400 sel/uL	31 (26.1)
- N/A	58 (48.7)
Mother's viral load level	
<1000 copies/mL	36 (30.2)
>1000 copies/mL	10 (8.4)
N/A	73 (61.4)

From 100 subjects aged ≤ 35 years, 76 chose IUD, 23 used tubectomy and 1 subject used implant. Meanwhile, in subjects aged 35 years, 10 subjects chose to use IUD and 9 chose tubectomy. The relation between age of the subjects and the choice of family planning was statistically significant (P 0.04)

From 24 subjects with gravida one, 23 chose IUD and 1 used tubectomy, while in subjects with ≥ 2 gravida, 63 subjects chose IUD, 31 chose tubectomy and 1 used implant. The relation between gravida and the choice of family planning was statistically significant (P 0.016).

From 104 patient with caesarian section delivery, 73 chose IUD and 31 used tubectomy. Meanwhile, in subjects with vaginal delivery, 13 subjects chose IUD, 1 chose tubectomy and 1 used implant. The relation between methods of delivery and the choice of family planning was statistically significant (P 0.049).

Table 3. The relationship between age, gravida and delivery methods with family planning choice

		Contraception methods			
		IUD	Tubectomy	Implant	P Value
Age	≤35	76	23	1	0.040
	>35	10	9	0	
Gravida	1	23	1	0	0.016
	≥2	63	31	1	
Methods of Delivery	SC	73	31	0	0.049
	PV	13	1	1	

Contraception use in women living with HIV plays a critical role in preventing mother to child transmission of HIV as it averts unintended births. Contraception plays a role in ending the epidemics of AIDS related to the Sustainable Development Goals 3.3.[6] Based on the WHO MEC for contraceptive use, women living with asymptomatic, mild, severe, or advanced HIV clinical disease may use COCs, CICs, contraceptive rings and patches, POPs, progesterone only-injections, and levonorgestrel and etonogestrel implants as those in MEC category 1. This means that there is no restrictions of its usage. In pregnant women with HIV, the contraceptive that must be used should be long-term family planning so that compliance is higher. Oral contraceptives are not suggested because they have the potential not to be routinely consumed. Meanwhile, levonorgestrel-IUD use in HIV positive women must be reconsidered as there is an increased risk of pelvic inflammation due to high rate of STI infection after the first 21 days of insertion (MEC category 2, category 3 in individuals with advanced HIV disease).[5] However, decision-making for contraceptive methods, moreover in women with HIV, is a complex process that require discussion on the trade-offs among the different methods, STI risk, and vary heavily on the biopsychosocial aspects of each individual and the environment they live in.

Dr. Cipto Mangunkusumo Hospital is a tertiary, national referral hospital in Jakarta, Indonesia. The hospital's 5-year data showed 72.4% (n=86) of all patients chose IUD as the most common contraceptive method. Most patients chose the IUD because it has long-term but reversible characteristics, so there is still the possibility of getting pregnant in the future. Different results were found on a referral hospital in Ethiopia, that 28.4%

preferred IUD because most participants were well informed that hormonal methods were expected to have some reactions in ART medication.[7] Another study in three referral hospitals in Amhara, Ethiopia, found that the most commonly used contraceptive method was injections (42.8%) because all study participants were ART users that may increase pill burdens if they chose COCs.[8] In Thailand, participants preferred male condom (n:179, 79.9%) as a single contraception method among women living with HIV due to the risk of transmitting the virus. Many of the study participants (n:118, 34.3%) also used two or more contraception method. This might be because most of them had lived with HIV for more than a year and had received family planning education and referral services as part of their HIV service package. The most common practice of dual contraception were condom and sterilization (n:78, 66.1%).[9] Women living with HIV in India, based on the Integrated Counseling dan Testing Centers in their tertiary hospitals in Mumbai, relied on condom only method (71.7%) due to the transmission risk of HIV, while the other 25.3% did not use any contraception. Despite that number of condom use, only half of the study population believed that condom could give 100% protection from pregnancy and they did not use other methods due to the misconceptions that modern spacing methods of contraception are harmful because of their HIV status.[10]

Moving to a developed country, a large clinical trial in the US showed the most common contraceptive methods reported at baseline were permanent contraception (37%), which was because most of the respondents (80.9%) did not desire children in the future, despite the relatively young age of the population. The use of more effective contraception (permanent, injection, pills, patch, diaphragm) and dual methods was only associated with older age and parity. Use of effective contraception methods also did not change with ART initiation or CD4 T cell count.[11] Oral contraception pills were also commonly used in the U.S for they are often the first hormonal method used by young women for regulation and treatment of painful menstruation. As they become more sexually active, many women remain satisfied using OCs for decades.[12] IUDs popularity in the US has just only increased in the past decade, as they are long-acting and reversible with minimum effects on sexual activity.[13]

A prospective cohort study in St. Petersburg, Russia, conducted contraceptive counseling before participants chose their preferred contraceptive method. The participants did not use ART at enrollment, mostly chose COCs (n:183, 42.95%), followed by condom (n:123, 28.87%), while participants using ART at enrollment mostly chose condom (n:27, 35.06%) followed by COCs (n:24, 31.16%).[14] Their initial study also found that condom alone was the most preferred method (43.9%), followed by its combination with COCs (33.5%). They stated that most women were most likely to choose a contraceptive method that was highly effective during typical usage and a female-controlled method, such as condom, was used inconsistently, affected by their partners.[15]

After comparing contraception use in women living with HIV in our center with those in other countries, we found that condom use was deemed essential in either developed or developing countries, suggesting the women with HIV generally understand the importance of preventing HIV transmission to their offspring. Condoms alone were more preferred compared to single modern contraceptive, as seen in studies in Thailand, Brazil, and India.[7,8,9,10,16] The right practice to use condoms may also pose as problem, especially in developing countries as most developing countries chose to use condom-only contraception.[7-10] It is presumed that their educational level contributes to their preferred method of contraception, as well as the government support to ensure more effective contraceptions that are widely available and promoted. Misconceptions about other more long-term contraception also needs to be corrected to prevent unintended pregnancy in HIV women more effectively, pushing the importance of good counseling before, during and after pregnancy in every health centers.

More effective and long-term contraception method usage were found in developed countries,[12-16] suggesting that higher educational level contributes to such decision, as well as sufficient governmental or health care support in giving counseling prior to choosing their contraception method. Women with better education also contributes to better compliance and are associated with using dual contraception method, as seen from studies in Brazil, Uganda and the US.[16,17] Our study presented IUD and tubectomy as preferred contraception, although our research subjects had low education, most of them wanted to use IUD because they have been educated on early arrival during antenatal care in obstetric clinic (bookcased) or during admission in emergency room (non-bookcased). Most of our participants had a relatively low educational status which translated to potential low compliance, as seen in other developing countries.[7-10] Most of our participants (75.6%) were also on ART therapy, which might increase pill burden if COCs were chosen. Those might be the reasons why longer-term contraception were more preferred in our study. Multigravida (79.8%) and delivery method of Cesarean section (87.3%) might also support the participants decision on choosing IUD and tubectomy. HIV positive women also had more

frequent contact with health care providers which allowed more frequent counseling and encouragement to select more effective and long-term method to minimize unintended pregnancy.

Our study had several limitations. Other baseline characteristics that may affect participant's decision such as health status, condom use and other available contraceptions, desired future pregnancy, family income, culture and ethnicity, relationship or marital status, sexual activity, et cetera were not available to be analyzed. More detailed factors affecting women with HIV in selecting contraception method should have been better obtained from large qualitative study. Population of our study were exclusive from patients registered in RSCM and could not be applied to larger population such as Jakarta or Indonesia in general.

CONCLUSION

In this five-year cross-sectional study, we found that most women living with HIV chose to use IUDs as method of contraception. Most participants were on ART treatment, had low educational, history of multigravida, and delivery method of Cesarean section, which might explain their decisions to choose more long-term, practical and effective contraception. There was a statistically significant relationship between contra-ceptive method with age (p 0.040), gravida (p 0.016) and delivery method (p 0.049). Frequent counseling is important in encouraging women with HIV to choose more effective and long-term contraception. Each visit of women with HIV that has desire to future pregnancy may be used as an opportunity to give or review information regarding the best contraception for the individual. Further studies are required to better explain factors involved in selecting contraception method in HIV-positive mothers.

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CONFLICT OF INTEREST

All authors have no conflict of interest.

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