



Adverse Drug Reaction of Medroxyprogesterone Acetate Injectable Contraceptive on Acceptor Family Planning Programme

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ABSTRACT

The government's family planning strategy for population balance is using contraception for couples of reproductive age. According to the 2018 Basic Health Research, the most common contraceptive is medroxyprogesterone acetate depot injection. The acceptor may experience complaints as a result of using these contraceptives. This study aims to determine the side effects of using depot medroxyprogesterone acetate injectable contraceptives on family planning acceptors in Jungai village, Rambang Kapak Tengah district, Prabumulih city in 2020. This study used a cross-sectional design, with data collected by interviews and a validated questionnaire. Purposive sampling was used to select 97 respondents who met the inclusion criteria. Univariate analysis was used to examine data from interviews. The percentage of adverse events experienced by acceptors of depot medroxyprogesterone acetate injectable contraceptive was 80% emotional changes, 75% menstrual disorders, 66% headaches, 66% weight changes, and 40% bone pain. Health professionals can use the findings of this study to provide counseling to family planning acceptors.

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Kata kunci:

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ABSTRAK

Salah satu program keluarga berencana yang dilakukan oleh pemerintah untuk menyeimbangkan jumlah penduduk adalah dengan penggunaan kontrasepsi pada pasangan usia subur. Berdasarkan Riset Kesehatan Dasar tahun 2018, diketahui bahwa penggunaan alat kontrasepsi terbanyak adalah suntik depot medroksiprogesteron asetat. Penggunaan alat kontrasepsi tersebut dapat menimbulkan keluhan dan efek samping bagi akseptor. Penelitian ini bertujuan untuk mengetahui efek samping dari penggunaan kontrasepsi suntik depot medroksiprogesteron asetat pada akseptor keluarga berencana di desa Jungai, Kecamatan Rambang Kapak Tengah, Kota Prabumulih Tahun 2020. Desain penelitian ini adalah cross sectional dengan pengumpulan data melalui wawancara menggunakan kuesioner yang tervalidasi. Pengambilan sampel secara purposive sampling terhadap 97 responden yang memenuhi kriteria inklusi. Data hasil wawancara dianalisis secara univariat. Hasil penelitian menunjukkan persentase kejadian efek samping yang dialami akseptor kontrasepsi suntik depot medroksiprogesteron asetat adalah perubahan emosi 80%, gangguan menstruasi 75%, sakit kepala 66%, perubahan berat badan 66% dan nyeri tulang 40%. Hasil penelitian ini dapat digunakan sebagai informasi bagi petugas kesehatan untuk memberikan konseling bagi akseptor keluarga berencana.

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INTRODUCTION

Family planning is a government program that aims to balance the population (Irianto, 2014). One of the family planning programs is to use contraception for the reproductive couple. Contraceptives used can be hormonal or non-hormonal contraceptives. Hormonal contraceptives include pill contraceptives, 3-month injections, 1-month injections, and implants, while non-hormonal contraceptives include condoms and non-hormonal IUD (Intra Uterine Device) (Ali, 2002). The 2018 Basic Health Research conducted by the Indonesian Ministry of Health showed that the most common contraceptive use was 3-month contraceptive injections. The proportion of contraceptive use after delivery in women aged 10-54 years by type of contraception in Indonesia on 2018 includes male sterilization 0,2%, male condoms 1,1%, female sterilization 3,1%, implants 4,7%, 1-month injection 6,1%, IUD 6,6%, pill 8,5%, 3-month injection 42,4% and not using contraceptive 27,1% (Kemenkes RI, 2018). The 3-month injection contains Depot Medroxyprogesterone Acetate (DMPA), so the other name is DMPA injectable contraceptive. The acceptor may experience complaints as a result of using these contraceptives. Injectable contraceptives cause higher health problems (10,7%) compared to other hormonal contraceptives such as pills (5,5%) and implants (10,6%). The adverse drug reaction of DMPA injectable contraceptives are menstrual disorder, body weight changes, headache, bone pain, acne, changes in libido, mood swings, vaginal discharge, and hair loss (Jitowiyono & Rouf, 2009).

METHODS

Research design

The design of this study is observational analytic with a cross-sectional approach. This study is to document characteristic acceptor DMPA injectable contraceptives and the adverse drug reaction experienced by acceptors. This study was conducted in Jungai village, Rambang Kapak Tengah district, Prabumulih city, South Sumatera Province in 2020.

Sampling procedures

The population in this study were women who lived in Jungai Village, Rambang Kapak Tengah district, Prabumulih city, South Sumatera Province in 2020. Purposive sampling used to select respondents consisted of inclusion and exclusion criteria. Inclusion criteria included respondents who had used DMPA injectable contraceptives for at least three months, and respondents aged 20-45 years old and willing to be included as samples in the study. The exclusion criteria were respondents who could not communicate and respondents who did not complete the answer to the questionnaire.

Sample size, power, and precision

Calculation of the number of samples refers to the Guideline Sample Size Determination in Health Studies WHO (Lemeshow & Lwanga, 1990) using the following formula :

$$N = Z^2_{1-\alpha/2} P (1-P)/d^2$$

Using p = proportion of cases to the population by 50% and d = degree of deviation by 10%. The sample obtained is at least 97 acceptors.

Measures and covariates

Collecting data was carried out using a questionnaire tested for validity and reliability. The questionnaire was adopted from Rahmawati (2017). The questionnaire consists of a combination of closed and open questions. The questions consist of the description of the acceptor (age, parity, education, profession, and duration of use of DMPA injectable contraceptive) and a description of the adverse drug reactions felt by the acceptor while using DMPA injectable contraceptive.

Data analysis

Data were analyzed univariate using descriptive statistics to assess the description of adverse drug reactions on DMPA injectable contraceptive acceptor. Adverse drug reactions documented are menstrual disorder, headache, bone pain, emotional changes, libido changes, and body weight changes.

RESULTS AND DISCUSSION

The most proportion of DMPA injectable contraceptive acceptors are 20-35 years old (55%), parity ≤ 2 (58%), intermediate education (43%), medical workers (100%), and using DMPA injectable contraceptive during ≤ 1 year.

Table 1. Descriptive of DMPA injectable contraceptive acceptors

Descriptive	Frequency (n=97)
Age	
20 – 35 years old	53 (55%)
36 – 45 years old	44 (45%)
Parity	
≤ 2 children	56 (58%)
> 2 children	41 (42%)
Education	
Primary	31 (32%)
Intermediate	42 (43%)
High	24 (25%)
Profession	
Medical worker	0 (0%)
Non-Medical worker	97 (100%)
Duration of use	
≤ 1 year	37 (38%)
$>1 - 2$ years	17 (17%)
$> 2 - 3$ years	19 (20%)
> 3 years	24 (25%)

Subjects of this research are reproductive women who are DMPA injectable contraceptive acceptors. Most of the subjects are women aged 20-35 years old. This study is in line with Rahmawati (2017), who found that the proportion of injectable contraceptive acceptors aged 20-35 is higher than women aged 36-45.

Using contraception on reproductive women is to prevent pregnancy. Female fertility reaches the top when women are about 20 years old, and slowly decreases until women reach the age of 35. After that, fertility declines rapidly, until it ends in menopause. Menopause is the cessation of the cycle of menstruation that occurs as a result of the loss of ovarian follicles and hormones produced by the ovaries. The average

age of menopause is between 50-52 years old, although it can occur at 40-50 years old (OpenStax College, 2013).

The number of respondents with a parity of ≤ 2 children (58%) is higher than respondents with a parity of > 2 children (42%). This finding is in line with Dewiyanti (2020), that found a significant relationship between parity and the use of contraceptive methods. The proportion of respondents who use non-long term contraceptive methods with ≤ 2 children is 56,4%, while respondents with > 2 children are 43,6%. DMPA injectable contraceptive is one of the non-long term contraceptive methods (Dewiyanti, 2020).

In this study, the level of education category intermediate (43%) is the highest proportion compared with primary (32%) and high education (25%). These findings are consistent with a health survey in Indonesia which found that most injectable contraceptive acceptors had education in senior high school and below (Depkes RI, 2013).

Duration of use of DMPA injectable contraceptives correlates with adverse drug reactions experienced by the acceptor. The use of DMPA injectable contraceptives for more than three months shows significant weight gain acceptors (Faiqah, 2014). Decreased bone mass density is significant in acceptors who use DMPA injectable contraceptives for more than two years (Shaarawy, 2006).

Adverse Drug Reaction of DMPA Injectable Contraceptive

Adverse drug reaction to DMPA injectable contraceptive experienced by acceptors is mood swing (80%), menstrual disorder (75%), changes in libido (73%), headache (66%), weight gain (66%), and bone pain (40%). Descriptive of adverse drug reaction from DMPA injectable contraceptive shown in Table 2.

Table 2. Acceptor's reported adverse drug reaction of DMPA injectable contraceptive

Adverse Drug Reaction of DMPA injectable contraceptive	Frequency (n=97)
1. Menstrual Disorder	
Occur	73 (75%)
Not Occur	24 (25%)
2. Headache	
Occur	64 (66%)
Not Occur	33 (34%)
3. Bone Pain	
Occur	39 (40%)
Not Occur	58 (60%)
4. Mood swing	
Occur	78 (80%)
Not Occur	19 (20%)
5. Changes in libido	
Occur	71 (73%)
Not Occur	26 (27%)
6. Weight Gain	
Occur	64 (66%)
Not Occur	33 (34%)
7. No Reported Adverse Drug Reaction	0 (0%)

Most of the respondents experience mood swings (80%). This finding is consistent with the theory of Jitowiyono and Rouf (2019) progesterone causes vitamin B6 deficiency. It causes the body feels weak, lethargic, and feel depressed. Progesterone participates in controlling opioidergic, serotonergic and cholinergic systems. The mechanism of contraception affects emotions due to the suppressive effect

of several neuroactive steroids that affect the expression and activity of gamma-aminobutyric acid receptors and decrease the concentration of free testosterone (Jitowiyono and Rouf, 2019).

Seventy-five percent of respondents experience the menstrual disorder. The menstrual disorder can be amenorrhea, menorrhagia, metrorrhagia, and spotting (Jitowiyono and Rouf, 2019). DMPA inhibits ovulation by affecting antigonadotropins. This condition alters cervical secretions and causes atrophy of the endometrium (Sarfati, 2009). DMPA also reduces endometrial vascular density and endometrial atrophy. It causes irregular bleeding, especially spotting (Simbar, 2007).

The respondent who reports experiencing changes in libido is 73%. Vaginal dryness due to the effect of progesterone possibly causes degradation of libido. DMPA can disrupt the balance of the hormones estrogen and progesterone. It can result in cell changes to abnormal cells (Saifuddin, 2003).

This research found that 66% of respondents experienced a headache. Symptoms like dizziness, nausea, vomiting, and nervousness can appear. These symptoms are caused by vasodilation, muscle contraction, or psychological stress. It arises as a result of the body's reaction to progesterone (MacGregor, 2007).

This study documented that 66% of respondents experience body weight gain. Changing body weight on acceptor DMPA injectable contraceptive can be a weight gain or weight loss. Weight gain ranged from 2,3 – 2,9 kg dan weight loss ranged from 1,6 – 1,9 kg. Body weight change could be due to the hormones progesterone facilitating the conversion of carbohydrates into fat. Progesterone also increases appetite resulting in weight gain (Norman, 2004).

Forty percent of respondents report bone pain. Progesterone receptors are also known to be present on osteoblasts and osteoclasts. Long-term use of progesterone increases alkylates phosphatase (ALP). ALP is a differential marker of osteoblast. DMPA is related to decreased bone mass due to suppression of gonadotropin secretion. It lowers the production of estrogen in ovaries. Significant degradation of bone mass density occurred in women who used DMPA for more than two years. The mechanism of occurrence of bone pain can be a symptom of decreased bone mass density caused by a lack of calcium (Sharaawy, 2006).

CONCLUSIONS AND SUGGESTIONS

Adverse drug reaction of DMPA injectable contraceptive experienced by acceptors in Jungai Village, Rambang Kapak Tengah District, Prabumulih City, South Sumatera Province in 2020 is mood swings (80%), menstrual disorder (75%), changes in libido (73%), headache (66%), weight gain (66%), and bone pain (40%).

ETHICAL CONSIDERATIONS

No funds, grants, or other support was received.

Conflict of Interest Statement

There is no potential conflict of interest in this study.

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