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Full Length Research Paper

Depo-Provera and depression In Iranian women

Hajar Salmalian[1], Farzan Khirkhah[2], Roshanak Saghebi[3], Fatemeh Nasiri Amiri[4], Mahmoud Hajiahmadi[5] and Hajar Pasha[1]*

[1]Fatemeh Zahra Fertility @ Infertility Health Research Center, Babol University of Medical Sciences, Babol, Iran.
[2]Psychology Department, Babol University of Medical Sciences, Babol, Iran.
[3]Student of Iranian Traditional Medicine, Babol University of Medical Sciences, Babol, Iran.
[4]Nursing and Midwifery Department (phD student of Reproductive Health), Babol University of Medical Sciences, Babol, Iran.
[5]Faculty of Social Medicine, Babol University of Medical Sciences, Babol, Iran.

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Depression in women can cause crucial physical, psychological and social reactions. Different studies showed controversial effects of Depo-Provera on incidence and intensifying depression or else wise not being effective on the mood. A total of 64 women aged 18 to 45 participated in a 12 weeks Depo-Provera injection intervention. Assessments were made before and 12 weeks after Depo-Provera injection in an urban and rural Primary Healthcare Center (PHCs) of Babol, Mazandaran, Iran. The subjects were selected using a clustering random sampling technique. The questionnaire used included depressive symptoms, obstetrics and delivery, socio-demographic and psychosocial factors. A standard questionnaire named Beck questionnaire was used to assess depressive symptom. Fisher exact test and Wilcoxon was used to analyze data. Mean depression symptoms was 6.5 ± 8.2 at base line, and 4.5 ± 6.6 at 12 weeks after Depo-Provera injection (p = 0.001). There was a significant difference between depression before to Depo-Provera administration and being content with spouse's family (p = 0.034) and a history of depressed mood (p = 0.026), whereas a sense of loosing independency had a significant difference before (p = 0.001) and after (p = 0.024) Depo-Provera administration. As there was no relation between Depo-Provera administration and depression symptoms in this study, we can increase the use of this product by proper consultation before contraception.

Key words: Depression, Depo-Provera (depo-medroxy progesterone acetate), Beck test.

INTRODUCTION

Family planning is not only known as the key intervention for health improvement of women and children, but also it is considered a human right. The fast population growth rate in recent century is a threat to mankind, and family planning has played an important role in family health. It is expected that global population is to be steady at 12 to 13 billion people in 2150 with fertility rate of 2.1 offspring per one woman. Nearly 95% of the population growth happens in the developing countries (Leon and Marc, 2005). Iranian population with growth rate of 1.24% would reach 90 million by the year 2021, and if there is no timely intervention for population control, there is poverty, hunger and misery in sight (Omidvar and Salmalian, 2004).

There are several different methods of contraception at hand. One of the effective and reversible methods of contraception is the injection of Depo-Provera which has been administered in 130 developing and developed countries and more than 9 million women throughout the word (Kaunitz, 2001). Each contraceptive method has its own advantages and disadvantages. Complications due to Depo-Provera in brief consists of common (such as menstrual irregularities and weight gain) and uncommon ones (insomnia, depression, breast tenderness, headache and dizziness, decreased libido, abdominal flatulence and delay in fertility return) (Cunningham et al., 2010; Aktun et al., 2005; Walsh et al., 2010; Freeman

*Corresponding author. E-mail: hajarpasha@yahoo.com. Tel: 00981112199595.

and Shulman, 2010; Cremer et al., 2011; Bonny et al., 2011) with secondary amenorrhea to be the most common. The contraceptive failure rate in women using this method is low (Ojule et al., 2010). Immediate initiation of Depo-Provera increases continuity and decreases pregnancies compared to conventional (next menstrual period) initiation (Estes et al., 2008; Madden and Westhoff, 2009). There is no evidence of an association between HIV infection and injectable contraceptives (Kleinschmidt et al., 2007). 1 to 10% of Depo-Provera administrators experience CNS symptoms such as headache, vertigo and depression (Sharts-Hopko, 1993). Depression, fatigue and decreased libido have been reported in Depo-Provera administrators in western communities (Archer et al., 1997; Fraser and Dennerstein, 1994; Prilepskaia et al., 1995); although, it is hard to put the blame on Depo-Provera because such complaints are very common in those not using this product as well (Leon and Marc, 2005). In in-depth researches, there was no increased depression symptom incidence even in women complaining from it before Depo-Provera administration (Leon and Marc, 2005). Different factors should be noted in this case such as pregnancy and delivery rates, post partum condition and recent sexual activity (Richard et al., 2000). Recently, studies have shown that there is no increase in depression symptoms after one year administration of Depo-Provera (Kaunitz, 1999). Therefore, new information on advantages and disadvantages of this methods seems necessary for women consultants and clinical trials on the effects of Depo-Provera is still being carried on (Kaunitz, 2001; Sangi-Haghpeykar et al., 1996). A proper consult before administration and suitable management of complications increases administrator content (Nelson, 1996). On the other hand, some researches show that depressed patients have more functional, physical and social dysfunction than the others. It also affects on the mortality rate and health care services as it is twice for depressed patients (Bager, 1998).

Therefore, we decided to determine depression incidence in Depo-Provera administrators, and thus play an important role in health improvement of women of our community.

MATERIALS AND METHODS

In this study, 64 women attending urban and rural primary healthcare centers (PHCs) of Babol, Mazandaran, Iran participated. In order to gather data, 5 urban and 3 rural centers form different regions (due to geographical distribution and cultural level difference) were chosen as clusters. Then with admitting to each of those centers, simple accidental sampling was provided within 18 months. All procedures were performed in accordance with the Helsinki Declaration of 1975. The study protocol and procedures were approved by Babol University Ethics Committee. Informed written consent was obtained from all subjects in the study.

The questionnaire used includes depressive symptoms, obstetrics and delivery, socio-demographic and psychosocial factors. A standard questionnaire named Beck questionnaire was used to assess depressive symptom. Data was gathered using a questionnaire includes depressive symptoms, obstetrics and delivery, socio-demographic and psychosocial factors. In this study, a standard questionnaire named Beck questionnaire was used; its validity and reliability have been assessed by Beck et al. (1996). Also, it was shown that this questionnaire is both reliable and valid in subjects in Iran. The BDI used was a translated and validated Persian version, which reported that the BDI Persian had high internal consistency (Cranach's alpha = 0.87) and acceptable test- retest reliability (r = 0.74); a full 21-item BDI was administered (Ghasemzadeh et al., 2005).

A socio-demographic questionnaire was used to obtain information regarding age and education. Other factors that were assessed included obstetric and delivery characteristics (e.g., pregnancy rate, recent pregnancy outcome, and history of abortion) and psychosocial factors (e.g., satisfaction with husband's occupation, husband being helpful at home pregnancy not planned, social support from partner or family, marriage satisfaction, contended with marital life, family status, family outcome adequacy, satisfaction with parent relationship during childhood, satisfaction with the relationship with one's own family or friends and relatives, parents and relative support, worrying accidents during the last year, spouse's family, history of depressed mood and sense of loosing independency).

The Beck questionnaire was used in assessing an individual's depression. It consists of a list of 21-question multiple-choice self-report inventory. When the test was scored, a value of 0 to 3 was assigned for each answer and then the total score is compared to a key to determine the depression's severity. The standard cut-offs were as follows: 0 to 9 considered as minimal depression, 10 to 18 as mild, 19 to 29 as moderate, and 30 to 63 as severe (Beck et al., 1996). The sample group was studied in 2 sections: first and before Depo-Provera injection, each individual received a family planning consultation and in case of Depo-Provera indication and tendency to participate in the study, demographic data record form and Beck standard test were completed. Three months after Depo-Provera injection, Beck standard test was once again completed for each person.

Statistical analysis

Statistical Package for the Social Sciences (SPSS Inc, version 15.0) was used for all of the analysis. As we could not provide independency test, we used chi-square statistical test instead, and therefore divided depression into two groups: depressed and non-depressed groups. Data was then analyzed using descriptive statistics (Wilcoxon and fisher exact tests) and $p < 0.05$ was considered significant.

RESULTS

Sixty four women with a mean age of 27.2 ± 5.5 years old (ranging 18 to 45) were studied. Housewives consisted of 98.4% of the cases, 56.3% lived in rural areas and most educational level frequency was among 6 to 12 grades (32.8%). Mean depression symptoms was 6.5 ± 8.2 (71.9 non-depressed and 28.1 depressed) before Depo-Provera injection and 4.5 ± 6.6 (84.4 non-depressed and 15.6 depressed) afterwards, which was significant based on Wilcoxon test ($p = 0.001$) (Table 1). Based on Fisher Exact test, there was no significant difference between

Table 1. Frequency distribution of depression symptoms before and after Depo-Provera administration.

Symptom	Before Depo-Provera administration number (%)	After Depo-Provera administration number (%)
Not depressed	46 (71.9)	54(84.4)
Depressed	18 (28.1)	10(15.6)
Total	64 (100)	64(100)

P = 0.001.

Table 2. The relation between some demographic characteristics and depression symptoms before and after Depo-provera administration.

Characteristics	Before Depo-provera administration		P-value	After Depo-provera administration		P-value
	Not depressed number (%)	Depressed number (%)		Not depressed number (%)	Depressed number (%)	
History of depressed mood			0.026			NS*
yes	(52.9) 9	(47.1)8		(82.4) 14	(17.6) 3	
No	(82.2) 37	(17.8) 8		(88.9) 40	(11.1) 5	
Sense of loosing independency			0.024			0.001
yes	(40) 4	(60) 6		(40.4) 4	(60) 6	
No	(77.8) 42	(22.2) 12		(92.6) 50	(7.4) 4	
Contended with marital life			NS*			NS*
Satisfied	(75) 39	(25) 13		(88.5) 46	(11.5) 6	
Not Satisfied	(54.5) 6	(45.5) 5		(63.6) 7	(36.4) 4	
Content with spouse's family			0.034			NS*
yes	(76.8) 43	(23.2) 13		(85.7) 48	(14.3) 8	
No	(37.5) 3	(62.5) 5		(75) 6	(25) 2	
Parents and relative support			NS*			NS*
yes	(73.2) 41	(26.8) 15		(85.7) 48	(14.3) 8	
No	(62.5) 5	(37.5) 3		(75) 6	(25) 2	

NS*: not significant

depression before or post Depo-Provera administration and age, education, pregnancy rate, recent pregnancy outcome, history of abortion, satisfaction with husband's occupation, husband being helpful at home, marriage satisfaction, contended with marital life, family status, family outcome adequacy (which was due to individual's own mind about adequacy), satisfaction with parent relationship during childhood, satisfaction with the relationship with one's own family or friends and relatives, parents and relative support and worrying accidents during the last year. On the other hand, there was a significant difference between depression before Depo-Provera administration and being content with spouse's family (p = 0.034) and a history of depressed mood (p = 0.026), whereas a sense of loosing independency had a significant difference before (p = 0.001) and post (p

=0.024) Depo-Provera administration (Table 2).

DISCUSSION

In this study, it was shown that Depo-Provera injection not only did not increase depression symptoms, but also decreased the symptoms in the studied cases [the mean depression symptoms before administration was 6.5 ± 8.2 (71.9% non-depressed and 28.1% depressed), whereas post injection was 4.5 ± 6.6 (84.4% non-depressed and 15.6% depressed)]. The results of Beck test in baseline and one year afterwards in Cupta and colleagues' study also showed that Depo-Provera administration had no effect on depression symptoms ($p = 0.02$) (Cupta et al., 2001). Also in Westhoff and colleagues' research, the depression symptoms in women continuing the method was 7.4 at the baseline and 6.7 one year later whereas in women cutting the method it was 8 at first with no change later. Also, there was no evidence of increased symptoms in women continuing the method for more than one year, as women experiencing bad mood before Depo-Provera administration, did not experience it during the year of administration (Westhoff et al., 1998).

In 2008, Berenson and co-workers studied their cases for two years (evaluation every 6 months) and the results showed that symptoms of depression and mood fluctuations were less in Depo-Provera administrators compared to others not using any hormonal contraception ($p < 0.05$) (Berenson et al., 2008). In Westhoff's study, symptoms of depression and mood fluctuation was less in Depo-Provera administrators compared to other hormonal methods (Westhoff, 2003). In Tsai and Schaffir (2010) study, the mean EPDS score for patients who received immediate postpartum Depo-Provera was 5.02, while the comparison group had a mean score of 6.17. This difference was not statistically significant ($p = 0.16$). In addition, six (10.9%) of the 55 patients who received immediate Depo-Provera were diagnosed with PPD based on EPDS scores greater than or equal to 13, while 27 (14.1%) of the 192 patients in the comparison group had PPD. This difference was again not statistically significant ($p = 0.88$) (Tsai and Schaffir, 2010).

Although Civic and colleagues found a relation between Depo-Provera administration and depressive symptoms, they recommended more researches for a better and complete evaluation because their data may not be just enough (Civic et al., 2000).

In our study there was no significant difference between age, education, pregnancy rate, history of abortion and recent pregnancy outcome and depression grades before and post Depo-Provera injection, whereas in Westhoff's study though depression grades had no relationship with age and delivery rate but it was a littlehigher in women with less education and unwanted recent pregnancy outcome (Westhoff et al., 1995).

There was no significant difference between depression before or post depo-provera administration and satisfaction with husband's occupation, husband being helpful at home, marriage satisfaction, being content with marital life, family status, family outcome adequacy, satisfaction with parent relationship during childhood, satisfaction with the relationship with one's own family or friends and relatives, parents and relative support and worrying accidents during the last year; on the other hand, there was a significant difference between depression before Depo-Provera administration and being content with spouse's family ($p = 0.034$) and a history of depressed mood ($p = 0.026$), whereas a sense of loosing independency had a significant difference before ($p = 0.001$) and post ($p = 0.024$) Depo-Provera administration. According to Kistner, there is a relationship between the incidence of depression and quality of sex in a marriage and this part being weak would be a ground factor for depression. Also, a non-supportive husband accompanies with increased depression intensity (Caruso, 1999). In our study though, women who were satisfied with their marriage showed less depression incidence within 3 months after Depo-Provera injection which of course was not significant.

Werner identifies tension factors as accidents, internal or external situations which potentially cause crucial physical, psychological and social reactions (Warner, 1997). In our study, women who were supported by their parents and relatives had a less depression rate within 3 months after Depo-Provera injection ($p = 0.027$). Mcgrath and colleagues also indicate that women with stressful and chaotic life and no support are more prone to depression symptoms (MCGrath et al., 1990). Spiroff stated that in precise studies, there was no sign of increased incidence of depression symptoms even in those with a noticeable complain before treatment (Leon and Marc, 2005).

It should be noted that although recent studies show no reverse effect of Depo-Provera on the mood, many physicians consider depression and anxiety as side effects of this contraception; as a study in healthcare workers of England revealed that 77% believed that Depo-Provera causes mood fluctuation (Wellings et al., 2007). Although contraceptive prevalence rates in the developed world are high, unintended pregnancy is common (Richard, 2004). Many factors influence contraceptive choice and attitudes towards methods are complex and may be difficult to change (Glasier et al., 2008).

As healthcare workers play an important role in contraception acceptance by the consultants, their negative view could decrease the women' approval of the method. It is to be noted that in our study, conditions such as the support of parents and relatives, satisfaction of marital life and adequate recourses to cover life expenses were effective in post injection depression decrease.

On the other hand, another probable cause of reduced depression in research subjects could be the high contraceptive efficacy of this method (equivalent to sterility) (Leon and Marc, 2005). Regarding that all research subjects were using natural method or condom as their contraceptive method before Depo-Provera administration, which the first two come with a high failure rate, therefore using Depo-Provera reduced their worries about unwanted pregnancy which can be a cause for reduced depression rate.

Also in our research all subjects received consultation before to the first injection and the study was based on their acceptance of the method, and as we know consultation and supporting the patients have an effect in managing depression and fatigue in Depo-Provera administrators (Richard et al., 2000).

Altogether and considering the results of this study (which showed no relation between Depo-Provera and depression symptoms within 3 months after injection); this method can be recommended as a contraception compared to compound pills in women with estrogen contraindication. On the other hand, with good consultation before this contraceptive method, we could improve its acceptance and prevent population growth which is accompanied with fast increase of poverty, decrease of health condition and resources. As there was no relation between Depo-Provera administration and depression symptoms in this study, we can increase the use of this product by proper consultation before contraception.

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