Minireview Article

Implanon contraceptive method: factors associated with discontinuation of use

ABSTRACT

Background: Implanon (Etonogestrel) is a reversible contraceptive of prolonged action (LARC), presenting as a single rod of second generation, containing only progestogen and a clinical failure rate less than 1%. Although there have been significant improvements in the effectiveness, safety, accessibility and affordable price of Implanon, discontinuation of the method has become a concern, with more than half of users discontinuing its use before the recommended 3-year term.
Methods: This study aimed to conduct a systematic review of the literature using the PubMed, Scielo, Science Direct and BVS databases, using the following search strategy: "Implanon" AND "discontinuation" AND "factors".
Results: The search resulted in the identification of 482 publications, being 362 excluded because they deal with duplicate publications and 115 discarded because they are narrative/systematic/editorial reviews or incomplete studies, articles to be included for the construction of the qualitative synthesis of the present work.
Conclusion: According to the publications analyzed, it is demonstrated that the discontinuation of the contraceptive method is essentially associated with the occurrence of adverse effects according to its use.

Keywords: Implanon, contraceptive, discontinuation, contraceptive methods, factors.

1. INTRODUCTION

Contraception is an important public health strategy that promotes women in preventing unintended and/or unwanted pregnancies, and the negative consequences of unsafe abortions, through adequate spacing and timing of birth [1; 2]. Implanon (Etonogestrel) is a second-generation, single-progestin, long-acting reversible contraceptive (LARC) with a clinical failure rate of less than 1% [3; 4]. Its main mode of action is the suppression of ovulation, which is aided by increased viscosity of cervical mucus, which prevents sperm from passing through the endometrial lining [5]. Its effectiveness in preventing pregnancy is high compared to other short-acting contraceptives. Since Implanon does not contain estrogen, it has minimal contraindications and has been used by more than 4.5 million women worldwide [6; 7].

Over the past four decades, global and national efforts have made significant progress in increasing the availability and use of family planning-related services (FP), especially provision of LARCs, to reduce needs as well as unmet pregnancies [8; 9]. Although the effectiveness, safety, accessibility, accessibility and use of Implanon have

greatly improved, its discontinuation has become a problem, with more than half of users discontinuing the method before the recommended deadline (3 years) [5;10]. Discontinuation of Implanon is defined as the exchange or termination of the method within 2.5 years after insertion. The term "early discontinuation of Implanon" refers to discontinuation of the method within 12 months after insertion [11; 12].

Menstrual abnormalities, such as menorrhagia or irregular vaginal bleeding, weight gain, local swelling, pain at the insertion site and generalized fatigue, are the most common reasons related to the method for discontinuation of Implanon [13; 14]. In addition, the lack of pre-insertion counseling, the absence of post-insertion follow-up, poor quality of service and customer dissatisfaction contributed to premature discontinuation [15;16].

Thus, the present systematic review of the literature sought to analyze and synthesize reasons and aggravating factors that permeate the discontinuation of the contraceptive method in question, paying attention to both the profile of users and socioeconomic characteristics, as side effects and personal reasons and beliefs that could influence the use of the device.

2. METHODOLOGY

This systematic review of the literature aimed to identify, select and synthesize the relevant evidence available in the literature on the aforementioned theme, based on clear selection and eligibility criteria. In this sense, this systematic review followed the PRISMA guidelines and used the PICOS strategy for the relationship between the events "use of Implanon contraceptive" and "factors associated with discontinuation" [17]. The components of the PICOS anagram are described in Table 1.

Abbreviation	Description	Components
P	Population	Patients who use contraceptive Implanon
I	Intervention/exposition	All epidemiological, demographic, clinical, laboratory, managerial and results data will be reviewed
C	Comparation	The controls will be chosen by different exposures, treatments and results

O	Outcome	Discontinuation
S	Study type	Experimental and observational

Table 1. Survey question components based on the PICOS strategy.

The search was based on scientific evidence available in the databases PubMed, Scielo, Science Direct and BVS, using the terminology MeSH (Medical Subject Headings). For this, the following search strategy was used: "Implanon" AND "discontinuation" AND "factors". The type of document (clinical or observational studies) without year restriction was selected as an additional filter. The studies were pre-selected by reading their titles and abstracts for further analysis and data extraction.

All studies were analyzed for eligibility according to the following criteria: (i) concise approach to factors associated with discontinuation of the contraceptive method Implanon, (ii) clinical or observational studies. The following publications were excluded from this review: letters, case reports, reviews and meta-analyses, conference summaries, studies related to other types of pathologies. The selection and eligibility process was carried out independently by two researchers and in the absence of agreement between the reviewers, a third reviewer was consulted. References considered as "potentially eligible" advanced to the second phase, which consisted in evaluating the full text to confirm their eligibility. Due to the review approach adopted in this paper, there was no need to submit or obtain approval from an ethics committee in research.

3. RESULTS AND DISCUSSION

Searching the databases resulted in the identification of 482 publications. Of these, 362 were excluded because they were duplicate publications and 115 were discarded because they were narrative/systematic/editorial reviews or incomplete studies. Therefore, 5 articles were selected to be included for the construction of the qualitative synthesis of this work.

Thus, we sought to clarify the treatment of each of the works that were selected. Thus, the numbers of patients included in each study are illustrated, as well as their main findings and conclusions in Table 2

Reference	Main findings	Conclusions
Grunloh *et al.* (2013)	Discontinuation of the use of Implanon in the first six months is associated with a profile of dropouts of single women with no stable sex life, black, or with a history of previous sexually transmitted disease. There is, however, no relationship with the age of the users. The main reason is irregular and, in some cases, continuous bleeding during the period of use of the implant.	The study made it possible to analyze different racial and socioeconomic classifications according to the discontinuation of the contraceptive method. It was observed that dropout rates exist, even in small numbers. Among the various reasons, irregular bleeding is the most prominent, even with medical advice and attempt to implement techniques to adjust this symptom.
Nega *et al.* (2021)	Most women withdrew the method before 2.5 years of use, the main reasons being side effects (the main cause of discontinuation in the first 6 months of use), desire to become pregnant, desire to change contraceptive method, misconceptions, peer pressure or partner opposition. The lack of information before the installation of the method was also related to the discontinuation.	Family planning programs should seek to improve their services so that the continuation of the method among those in need occurs. Thus, informing users about the adverse effects, resolving their possible doubts and calming them in the face of the anguishes associated with the use can be decisive in not discontinuing the use of the contraceptive method.
Abraha *et al.* (2022)	Unplanned discontinuation is one that is not due to a previous desire to try to become pregnant. Still, when it is not associated with the beginning use of another contraceptive method there is a risk of an unplanned pregnancy. The reasons are for not understanding the method and belief in false myths related to it, influence of the partner or contraceptive failure.	Most women gave up the use of the implant because of, mainly, discomfort with side effects and peer pressure. The shortest time of use, in general, was only three months. Users who have never used other contraceptive methods tend to give up before the three-year period.

HINES *et al.* (2023)	The highest rate of withdrawal from implant use occurs within the first year. They stand out as a profile of dropouts being white and young people under 24 years. The statistic is that one in ten women will give up in that time, and have as main reason the adverse effects.	The study noted that the rates of continuation in the use of Implanon are lower than the historical rates of studies related to other methods. Of the total patients analyzed, 92% discontinued use at 1 year or less due to adverse effects. Side effects of irregular and neurological bleeding, such as mood dysregulation, directly impact discontinuation rates.
Chekole et al. 2023	In this study, the determinants of discontinuation of Implanon were as follows: women who had no formal education, who had no children, who had no counseling about side effects, who had no discussion with their partner, who had no follow-up visit, and who had side effects.	The educational level of women, the absence of children during the insertion of Implanon, the lack of counseling on the side effects of insertion, the absence of follow-up visits, experience of side effects and lack of discussion with a partner were identified as determining factors for the discontinuation of Implanon. Therefore, it is crucial that health professionals and other stakeholders in the health sector offer and reinforce pre-insertion counseling as well as follow-up consultations in order to increase Implanon retention rates.

Table 2. Description of the findings in the studies selected in this review.

The study by Grunloh et al. (2013) [18] showed that out of a total of 5,928 participants; 5,495 (93%) were using their method at 6 months and 433 (7%) had discontinued, with Implanon discontinuation rates being 6.9% - lower than the rates of 7,3%, 8.0% of the intrauterine system of levonorgestrel and copper IUD, respectively. The study showed that single and divorced/separated women and widows were slightly more likely to discontinue compared to married women, with no other baseline characteristics, including younger age (14-19 years)was associated with early discontinuation. The work shows that the most common reason given for discontinuation was irregular or frequent bleeding among Implanon users.

The work of Nega et al. (2021) [19], a cross-sectional study, showed that almost a quarter of the study participants discontinued the use of contraceptive implants before the expiration date. The predominant reasons for discontinuation of use are centered on side effects, being the only factor mentioned in all cases (100%) in the first six months and responsible for 48.2% of all other causes of early discontinuation over the 30 months of use. Therefore, it is crucial that public health initiatives focus on disseminating adequate information to family planning users, as well as empowering health professionals through training that addresses effective counseling services, with special emphasis on side effects and the dissipation of misconceptions.

Abraha et al. (2022) [20] conducted the study to determine the incidence and predictors of unplanned discontinuation of Implanon during the first year. The authors demonstrated that the overall incidence rate was 16.3 discontinuations per 1000 women, with 18.2%n unplanned discontinuation rate. The age of the participants, the educational level of the partner and previous exposure to contraceptives were statistically significant predictors of unplanned discontinuation of Implanon during the first year. Thus, it is evident that it is necessary to elucidate the understanding of the reasons about the discontinuation of the use of the contraceptive method, in order to overcome the barriers identified. Also, the authors highlight the need for the system and health service providers to pay attention to patients with lower educational status or still little informed about the insertion and effects that may accompany the use, especially in the first months.

The study by Hines et al. (2023) [21] consisted of a review of the records of patients who received etonogestrel implant between January 1, 2015 and December 31, 2017, in offices in a network of university hospitals. Therefore, the authors show that the discontinuation rate can vary greatly between populations, and in the present study early discontinuation in our study was associated with adverse effects reported by the patient. A total of 92.6% of patients in the subanalysis group discontinued use in one year or less due to side effects. Analyzing the reported side effects, the main side effect was abnormal uterine bleeding, reported by 53% of patients. Neurological and/or psychiatric adverse effects emerged as the second most frequent type of reporting by patients in the subpopulation, demonstrating a significant association with early discontinuation. These effects covered a variety of symptoms, such as mood disorders (anxiety, depression, and suicidal ideation), headaches, decreased libido, and numbness or tingling sensations in the arm.

Finally, the study by Chekole et al. (2023) [22], a case-control study that included 312 participants, demonstrated that the main variables found when analyzing the discontinuation of the use of Implanon were the educational level of the users, the absence

of children, the the history of miscarriage, lack of pre-insertion counseling about side effects, discussion with a partner, and experience of side effects. Thus, the authors illustrate that women without formal education, without children, who did not receive any pre-insertion counseling on possible side effects, who had side effects, who did not have post-follow-upinsertion and who did not discuss with their partners before insertion were statistically more likely to discontinue Implanon. The authors also discuss in the development of the work that women without formal education may not have the necessary autonomy to decide on contraceptive issues and may have less knowledge and awareness of long-acting contraceptive methods, such as Implanon. Still, rumors and misconceptions about prolonged-acting contraceptive methods can lead to discontinuation. On the other hand, women with higher levels of education are less likely to stop using Implanon, possibly due to a more comprehensive understanding of information provided by service providers or other sources when facing side effects.

4. CONCLUSION

Despite being a highly effective form of birth control, Implanon has important side effects that directly impact the discontinuation of the contraceptive method by patients. In addition, factors such as lack of information, insecurity and other secondary factors such as the desire to become pregnant, desire to exchange contraceptives, misconceptions, and even peer pressure or opposition are also significant factors regarding discontinuation.

Thus, prior information about the effects that may be associated, as well as the elucidation of doubts and relief of possible anxieties that may be associated with the use are measures that may prevent discontinuation of use, in order to maintain birth control, and promote the well-being of patients. In this scenario, the training of the multidisciplinary team in the instruction of patients can also be a determining factor in the non-disruption of the method by patients.

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