

Levonorgestrel, Emergency Contraception: What the Users Know and Need

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Abstract

Introduction: This study was an analysis of the use of Levonorgestrel (LNG) as emergency contraception (EC) in the province of Santa Cruz de Tenerife.

Methods: A total of 144 women users of EC were interviewed in 15 pharmacies in order to identify their profile, their knowledge of the LNG and their needs in pharmaceutical care.

Results: 49% of the users were women between 18 and 25 years old, and that 68% of women requesting dispensation of LNG were going to use the drug for the first time. The dispensation for first time use for those under the age of 18 was 80%. In addition, in the case of minors who had previously used EC, two out of every three users said they had used it before between 3 and 6 months prior to the time of this dispensation. It should be noted that 64% of dispensations of the LNG occur in the first 24h after an unprotected sexual intercourse. LNG has been repeatedly used by 16% of the women. In addition, 80% of dispensations are for women using another method of birth control and 24% of them are already being treated with other drugs.

Discussion: The above underlines the need to improve the users' knowledge of EC with LNG and the need to deliver personalized information about LNG during dispensation at the pharmacy. The safe and effective use of this emergency contraceptive drug should be promoted with health education with the objective of achieving the best possible outcome of this emergency contraception method.

Keywords: Levonorgestrel (LNG); Emergency Contraception (EC); Pharmacy; Pharmaceutical Care; Health Education

Introduction

Medication is the most frequent intervention within healthcare systems worldwide. Achieving the best possible outcome of medication for the quality of life of patients should be the primary aim of all health professionals involved in the medication chain, as well as carers and patients depending on their abilities and capacities [1].

The pharmacist, a health professional who is an expert in medication, has a direct relationship with the patient which allows problems to be solved during the safe and effective use of drugs, improved knowledge about treatments and optimization of the expected therapeutic results. During dispensation, the pharmacist checks the need to use the drug and provides health education for its effective and safe use by giving personalized medication information (PMI).

Pharmaceutical Care (PC) is the responsible provision of drug therapy for the purpose of achieving definite outcomes that improve a patient's quality of life [1,2]. The generalization of Pharmaceutical Care in Spain constitutes a commonly declared objective of the profession. However, its implementation has suffered delays for a number of reasons, including a lack of unity in the messages generated by the experts and the institutions [2].

Pharmaceutical Care is the active participation of the pharmacist in ensuring improved patient quality of life, through dispensing, OTC prescription and pharmacotherapy follow-up. Such participation implies cooperation with the physician and other health care professionals in order to secure outcomes that improve patient quality of life, as well as pharmacist intervention in activities that offer good health and avoid the development of diseases [2].

Dispensing is the professional service of the pharmacist destined to ensure – following individual evaluation – that the patients receive and use their medicines adequately in relation to their clinical needs, at the precise doses indicated for their individual necessities, during the adequate period of time, with information for correct use, and in abidance with current legislation [2].

Spanish law on Guarantees and Rational Use of Drugs [3], ratifies, in article 84, the consideration of pharmacy offices as private health establishments of public interest, and states that *“pharmacists, as they are responsible for dispensing medicines to citizens, will ensure compliance with the guidelines established by the physician responsible for the patient in the prescription, and cooperate with them in the follow-up of the treatment through pharmaceutical care procedures, helping to ensure their efficacy and safety. They will also participate in carrying out the set of activities aimed at the rational use of medicines, in particular through the provision of information to the patient”*.

Pharmacists share the mission of ensuring the safe, effective and efficient use of medicines with patients, physicians, other health professionals, and health authorities. In this multidisciplinary environment, the pharmacist should provide specific knowledge and skills to improve the patients' quality of life in relation to pharmacotherapy and its objectives. A proactive attitude in dispensation and pharmaceutical indication is rooted in the professional practice of the pharmacist.

In the last few years, the number of unplanned pregnancies has increased, especially in young women. Among other measures, emergency contraception (EC) has been introduced by the different Health Departments to reduce unwanted pregnancies. Unintended pregnancy is a complex phenomenon which raise to take an emergency decision [4].

Emergency contraception (EC), Emergency Hormonal Contraception (EHC), Emergency Contraceptive Pill (ECP), Morning After Pills (MAP) and Next Day Pills (NDP) refer to methods of emergency postcoital contraception that can be used to prevent pregnancy after sexual intercourse. These EC methods are used in order to impede fertilizing after unprotected sexual intercourse and are recommended for use within 5 days (120h) but are more effective the sooner they are used after the act of intercourse [5,6]. Timely access to EC can contribute to reducing the number of unwanted pregnancies, and ultimately, the number of unsafe abortions and maternal fatalities [7]. This reduction in access time is statistically and therefore clinically significant, representing a potential 10% increase in the prevention of unintended pregnancies [8]. Oral emergency contraceptives are a safe and effective form of long-term birth control but not as effective as some other methods [9].

Methods of emergency contraception are the copper-bearing intrauterine devices (IUDs) and the emergency contraceptive pills (ECPs). The emergency contraceptive pill regimens recommended by WHO are ulipristal acetate, levonorgestrel, or combined oral contraceptives (COCs) consisting of ethinyl estradiol plus levonorgestrel [5]. Among these, the more used EC methods consist in the use of hormonal contraceptives with estrogen and progestin, the use of progestin alone (levonorgestrel) or the use of copper intrauterine device (IUD) [6].

EC is usually used in the following situations: unprotected intercourse, concerns about possible contraceptive failure, incorrect use of contraceptives, and sexual assault if without contraception coverage [5]. Emergency contraception should be a specific and not a regular therapeutic resource to be used in the event of failure of a standard contraceptive method or unprotected sexual intercourse. In no case

does it interrupt an already started pregnancy, and, therefore, Levonorgestrel (LNG) is not an abortive drug. More recently, the Zika virus epidemic has shined a spotlight on the importance of providing timely access to EC in Latin America. This public health emergency offers a window of opportunity to advance national policies and practices to ensure that women have access to a full range of reproductive health services [10].

Pharmacists can play a critical role in the access to emergency contraception (EC) and are often the front-line health care providers for women seeking EC [11]. Pharmacists have reported that one of the main benefits of being involved in the supply of EC is that it widens access. There is no evidence to suggest that pharmacy supply of EC compromises contraceptive practice or sexual behaviour. Access to EC can be significantly improved by allowing community pharmacists to use a PGD to provide free EHC to young women and increased access could help women avoid unwanted pregnancy [8]. Nevertheless, many misconceptions and controversies about EC still exist. Research does not support that increased access to EC increases sexual risk-taking behavior [12].

Furthermore, requests for supply of the emergency contraceptive pill through community pharmacies require consideration of a range of factors and the application of professional judgment. Ongoing training and pharmaceutical care protocols are required to enhance the skills, competence, and confidence of pharmacy staff in managing requests for EC [13]. As reported, correct information about EC was the most important predictor of pharmacists' dispensing EC in Florida. To expand availability of EC, pharmacists will have to become better informed [14]. Some pharmacists felt conflicted in their dual roles as health care and customer service provider when counselling about and selling EC, and many felt uncomfortable discussing body weight [11]. In Brazil, in general, pharmacy representatives did not ask questions or provide our client with information about EC [10].

In Spain, the Ministry of Health and Social Policy modified the conditions for dispensing EC on 28th September 2009, and a medical prescription was no longer necessary for the acquisition of LNG marketed in Spain. The aim of the modification was and still is to reduce the number of unwanted pregnancies in young people, as well as the number of voluntary interruptions of pregnancy.

Increasing access to EC by eliminating prescription requirement resulted in increased EC use in France. Nevertheless, this increase in EC access and use did not result in increased proportions of women who had ever had intercourse, or in a decrease in the age at first intercourse, or in an increase in the proportion of women at risk for unintended pregnancy. Among women at risk for unintended pregnancy, there was no decrease in the use of contraception and no decrease in the use of the most effective methods [15].

Community pharmacies in the United Kingdom (UK) provide sexual and reproductive health (SRH) services such as emergency contraception (EC), although there is scope for provision of additional services [16]. In North Yorkshire (UK), community pharmacies had become the largest provider of EC [17]. A pilot observational study in South London found that women who went to a pharmacy had more rapid access to EC compared to those who chose to attend a clinical service. Other aspects of provision and client satisfaction seem to favor attendance at a clinical setting over a pharmacy as a venue for obtaining EC [18]. Since 2008, EC has been available free of charge without restriction in pharmacies throughout Scotland but Neither availability from the pharmacy nor removal of a charge for EC has increased its use among women having an abortion in Scotland [19].

After years of complex regulatory changes, levonorgestrel (LNG) emergency contraception is approved for unrestricted sale in the United States [20]. In February 2014, the Food and Drug Administration updated its regulations to make all single-dose levonorgestrel-only emergency contraception available over the counter [21].

In Brazil, since 1999, dedicated progestin-only emergency contraceptive pills have been available with a prescription. However, utilization of EC has been limited [10].

Little is known about Levonorgestrel's pharmacokinetics and optimal dose for use [4]. Levonorgestrel (LNG) acts on the mucous cells of the cervix by altering their secretions in a way that renders it very viscous to the point of totally suppressing the progress of the sperm

through the cervical mucus. LNG, administered at the indicated doses as an EC, does not produce changes in the endometrium that are sufficiently strong to interfere with implantation. It is suggested that interference of LNG with the mechanisms initiating the LH preovulatory surge depends on the stage of follicle development. Thus, anovulation results from disrupting the normal development and/or the hormonal activity of the growing follicle only when LNG is given preovulatory. Peri- and post-ovulatory administration of LNG does not impair corpus luteum function or endometrial morphology [22-25]. Moreover, LNG has no ability to alter sperm function at doses used *in vivo* and has limited ability to suppress ovulation [26].

The use of LNG should be as soon as possible after sexual intercourse, since its effectiveness is linked to time, which is 95% in the first 24h falling to 58% between 48 and 72h [25]. The earlier the treatment is given, the more effective it seems to be [4]. Annual pregnancy rates in women using pericoital levonorgestrel 150 mcg to 1 mg range from 4.9% to 8.9% [9].

A single dose of LNG 1.5 mg for EC supports its safety and efficacy profile. If two doses of LNG 0.75 mg are intended for administration, the second dose can positively be taken 12 - 24h after the first dose without compromising its contraceptive efficacy. EC regimen of single-dose LNG is not inferior in efficacy to the two-dose regimen [4].

According to data from the Spanish Society of Contraception [27], 14.1% of women between the ages of 14 and 50 have used the EC at some point, which in 77.7% of cases was related to problems with the use of condoms. Easy access to EC is considered its most outstanding aspect (52.6%), ahead of confidentiality or cost.

With this background in mind, the objectives of this study are to analyze the use of Levonorgestrel in the province of Santa Cruz de Tenerife (Spain) as well as the patient's previous knowledge about LNG and their needs, to identify and limit the risks involved in its use and to know what is the level of satisfaction of LNG users with pharmaceutical care received in the community pharmacy.

Material and Method

This is a descriptive multicenter observational study that has been performed in 15 urban and semi-urban community pharmacies in Santa Cruz de Tenerife. The sample is made up of 144 patients, users of the pharmacies participating in the study, who have requested dispensation of a pharmaceutical product based on Levonorgestrel.

The data collection was carried out using a questionnaire specifically designed by the Working Group on Pharmaceutical Care (PC) of the OPA of the province of Santa Cruz de Tenerife during the months of October 2010 to February 2011. A total of 15 variables were the object of study with an estimated time of 5 -10 minutes per survey. Prior to the development phase of the study, a pilot test was carried out in 3 pharmacies to see how the interviewee accepted the questionnaire, the time of completion and the correct formulation of the questions.

Participants completed a questionnaire on sociodemographic data and variables concerning LNG (the Knowledge and source of information about this EC method, prior use of LNG, the frequency of use in the current cycle, the frequency of use in the preceding year, the time elapsed between unprotected sexual intercourse and the acquisition of LNG, the reason for use and the regular method of contraception used; precautions for the use of Levonorgestrel when there are diagnosed pathologies, side effects and interactions LNG-other drugs).

Participants who did not know how to read or write and those who were mentally handicapped or ill were excluded from the study. Likewise, information and classification biases were reduced, as the study was carried out in different pharmacies and with different professionals, but with the same working protocol.

A leaflet was designed for the user to reinforce the Pharmaceutical Care with information on the appropriate and safe use of Levonorgestrel as well as references about organizations related to family planning and health institutions.

Results and Discussion

81% of dispensations were made to the end-user of Levonorgestrel. In minors under 18, however, this percentage increased to 88%. When analyzing the age range, the majority of Levonorgestrel users were women between the ages of 18 and 25 (49%), followed by women aged 25 - 35 years (31%), women under 18 years (12%), and women older than 35 (8%). This low percentage of LNG use in women over 35 years of age could reflect better sex education and, possibly, wider and better use of contraceptive methods. In Madrid (Spain), women requesting EC showed an average age of 23.7 ± 48 years (range: 16 - 40 years) [28]. Also in Spain, a previous cross-sectional study conducted in primary care emergency settings in Toledo reported a mean age of 22.9 years (range 14 - 46 years) in women who demanded EC [29]. EC in Catalonia was used primarily by women between 16 and 24 years of age, usually on the weekends [30]. In Portugal, user-purchasers aged between 18 and 30 represented 65.2% and 42.3% had attended secondary school [31].

68% of respondents reported using Levonorgestrel for the first time. This percentage rose to 80% in the population between 16 and 18 years of age. However, 20% of the minors stated that they had used it earlier, which shows the lack of sex education in this segment of the population.

The time from sexual intercourse to Levonorgestrel intake is important when using EC. Timely access to EC pills is critical because they are more likely to work the sooner they are taken [20]. In the present study, 64% of the users who requested the LNG did so within 24h of intercourse, which is a lower percentage than the study of the SEC (2011) [27] where this was 78%. Dispensations in the first 72h after sexual intercourse accounted for 99% of all dispensations, thereby ensuring the contraceptive effects of the drug. The results in the population under the age of 18 show that there are minors who continue to use Levonorgestrel 48h after sexual intercourse, which means a delayed intake of the EC and, consequently, a decrease in efficacy of the method. In Madrid (Spain), 79.8% of women requesting EC went to medical emergency services in less than 24h after sexual intercourse [28]. In Toledo (Spain) mean hours since the intercourse without protection until request of the medication was 14.5h [29]. There is a correlation between the age of the young woman and the time she takes to access EHC [8]. The above finding demonstrates the need to reinforce pharmaceutical care and health education for the Levonorgestrel user.

Knowing that emergency contraception is an exceptional method, and knowing the risk of hormonal overload, 32% of the users who were not using it for the first time did an additional survey. The above survey shows that 15.55% women had used the pill once, 71.11% women twice and 13.33% women three or more times. In the study on the time relationship of LNG intake, 26.08% of the women had previously used it in the previous 1 - 3 months, 52.17% of the users had taken it in the previous 3 - 6 months and 21.74% had used it 6 - 12 months beforehand, therefore, 16% of the total sample had used it repeatedly in the last year. Among LNG users under the age of 18, 2 out of 3 minors had already taken (3 - 6 months before) the EC (Table 1). In Madrid, among the women who had went to the emergency services within the 24 h of the sexual intercourse the 77.4% of all of them had requested EC previously and the 93% of those had requested EC for the first time [28]. Most of women requesting EC in Catalonia (78.5%) had used EC twice and only 1.8% had used this medication once [30]. In Barcelona, EC was used only once by 93% of women [32] and in Toledo (Spain), up to 24.4% of the women had already previously used the emergency contraception [29]. The majority of EC users in Portugal (62.6%) are first-time users of emergency oral contraception [31].

Questionnaire Question	Women < 18 years old	Women > 18 years old
Is the requested medicine for you?	88%	81%
MAP user	12%	88%
Are you taking the medication for the first time?	80%	68%
Time elapsed since sexual intercourse and taking Levonorgestrel	Less than 1 day: 58.8% Between 1 - 3 days: 23.5% Between 2 - 3 days: 17.6% More than 3 days: 0%	Less than 1 day: 64% Between 1 - 3 days: 28% Between 2 - 3 days: 7% More than 3 days 1%
Time elapsed since you last took the MAP	Between 1 - 3 months : 15.55% Between 3 - 6 months: 71.11% Between 6 - 12 months : 13.33%	Between 1 - 3 months: 26,08% Between 3 - 6 months: 52,17% Between 6 - 12 months: 21,74%
Habitual use of a contraceptive method	75%	80%
Contraceptive methods habitually used	Condom: 78.6% Oral contraceptive: 14.28% Vaginal ring : 7.14% IUD : 0%	Condom: 65.57% Oral contraceptive: 24.59% Vaginal ring: 6.55% IUD :2.46%
Perception of the risk associated with repeated use of the MAP	53%	80%
Knowledge of secondary effects	41%	59%

Table 1: Comparison between the variables of adults and minors taking the MAP in the province of Santa Cruz de Tenerife.

The reasons for requesting EC were 91% condom failure, 7.9% not to have used any contraceptive method, and 1.1% wrong use of natural birth control methods [28]. In Barcelona, reasons for EC were condom problems in 79.5% of cases [32]; in Madrid in 73.1%; in Toledo (Spain) were due to failure of barrier method or condom in 75.8%, 17.7% did not use any contraceptive method and 6.5% attributed it to other reasons [29]. In Portugal, in 59.0% of the situations the reason for use was failure of the contraceptive used [31]. The major reasons for requesting EC in Hong Kong were: omission of contraceptive at the index intercourse (38.9%), condom accidents (38.0%), and non-use of any regular contraceptives (20.6%) [33].

80% of women asking for LNG in Tenerife were using another standard contraceptive method. This figure drops to 75% for minors 18, which highlights the need for sex education and family planning for this 25% of LNG users under 18 years of age who do not habitually use a contraceptive method.

The most used contraceptive method is the condom (65.57%), followed by oral contraceptives (24.59%), the vaginal ring (6.55%) and the IUD (2.46%). These data coincide with previous studies, where the most widely used method was the condom and when it broke led to the request for Levonorgestrel [34]. In Madrid (Spain), usual anti-conceptive method was the condom (88.8%), 2.2% used hormones, 9% no contraceptive method at all and none of them had used the intrauterine device. 34.8% were previous users of EC [28]. The majority of EC users in Portugal (79.5%) also use a regular method of contraception [31]. According to Antona and Madrid [35], among adolescents, EC is frequently commented as an “alternative form” that displaces the use of condoms but EC does not make a significant impact on the use of a condom or not. Its use is associated with social representations and the affective imagination.

It has been recently reported that, in women younger than 35 years who have sexual intercourse 6 or fewer times per month, correct and consistent use of pericoital levonorgestrel 1.5 mg results in an annual pregnancy rate of 11%. Pericoital contraception is less effective than long-acting reversible contraceptives (annual pregnancy rates of 0.05% - 0.8%) or perfect use of combined oral contraceptives (0.3% annual pregnancy rate), but similar to, or better than, typical use of combined oral contraception (9%) and condoms (18%) [9].

Regarding precautions for the use of LNG when there are diagnosed pathologies, in our study there were two cases of LNG users with malabsorption syndrome and one user with Crohn’s disease. In these cases, the pharmacist intervened by referring the patient to the physician for treatment review and assessment of the risk/benefit of exceptional use of LNG. Self-medication and lack of awareness of patient use precautions may favour these situations of unsafe use of the medicine.

LNG-other drug interactions were also the object of study, showing that 24% of Levonorgestrel users were being treated with other drugs. Of this percentage, 8.1% of these patients presented interactions between LNG and another drug. The drug-drug interaction is relevant because it reduces the efficacy of Levonorgestrel. One patient was being treated with antiepileptic drugs, three HIV patients on antiretroviral therapy, five patients were receiving antibiotics and three were daily Hypericum users. There is no doubt that during prescription and dispensation, it is imperative to collect information on the concomitant treatments the patients are taking. In the case of phytotherapeutical treatments such as Hypericum, it is necessary that the health professionals supervising the patient insist on asking about their consumption and note that phytotherapy is composed of active principles capable of interacting with other medicines.

Regarding the perception of risk towards this emergency contraceptive therapy, 80% of the users state that it is not correct to abuse the MAP, considerably higher than the one published by the SEC (2011) [27], where the perception of risk was found to be 60.2%. In minors, there is a lower perception of the risk due to the continued use of this drug and this is associated with a low level of knowledge (47%). There is no doubt that this population group should be the priority target of sex education and family planning campaigns.

Factors associated with self-reported use of emergency contraception in adolescents have been described in Barcelona (Spain). Among boys, EC was associated with alcohol abuse, having sexual intercourse weekly and not having discussed issues about sexuality in the classroom. Among girls, self-reported EC was associated with alcohol abuse, cannabis consumption and weekly sexual intercourse [36]. Pharmacy access to emergency contraception (EC) could involve men in pregnancy prevention [37].

Levonorgestrel side effects (nausea 10 - 30%, headache, menstrual discomfort, vomiting 1 - 5%, abdominal pain, fatigue, increased breast tenderness, among others) are unknown for 1 in 2 patients and this percentage increases in the under-18s. This circumstance again shows the need for personalized information on the medicine during dispensation. The patient should be informed that these side effects usually revert within 24h of LNG intake, that between 4 - 8% of LNG users suffer menstrual delay for longer than 7 days, while 10 - 25% of LNG patients suffer a menstruation advance of up to 7 days. According to previous studies, menstrual irregularity is the most common adverse effect [4,9].

The main doubts of the patients who are taking EC are concerned with a possible pregnancy, the continuity or suspension of habitual oral contraception, the next menstruation, among others. One of the aspects repeatedly asked about during pharmaceutical care consultations is whether, after vomiting within 2h of taking the dose, the dose of LNG associated with an antiemetic can be repeated either at the same time or one hour before the second dose of LNG. Pharmaceutical care during dispensation is a key service and this study confirms that only 1 in 10 respondents continue to have doubts about the use of Levonorgestrel.

Counselling for use of emergency contraceptive pills should include options for using regular contraception and advice on how to use methods correctly in case of perceived method failure as well as family planning counselling [5,38]. More reproductive information is required from all the actors involved in policies and health interventions, encouraging healthier sexual behaviour [30]. Promotion and prevention strategies should begin as early as possible. Behavioral differences should be seen from a gender perspective in the fields of both research and program implementation [36]. More work needs to be done to align national regulatory policies with international standards and evidence-based practices [10]. Several studies suggest that health care providers, including pharmacists, could benefit from increased education about EC. Therefore, it is important for pharmacists to remain up-to-date on the most recent EC products and information, as pharmacists remain a major point of access to emergency contraception [12].

After assessing the patient's knowledge of Levonorgestrel among our patients, this knowledge was reinforced with personalized information about the medication (oral health education) and the leaflet which is a written educational tool. Personalized medication information (PMI) is the information supplied to the patient by the pharmacist regarding the treatment, in the course of the dispensing process, with the purpose of ensuring effective and safe drug use [2].

Finally, the study looks at the role of the pharmacist as a health agent. Implementing pharmaceutical care is a quality-enhancing element into the working methodologies of healthcare systems and requires innovative approaches to improve patient participation, inter-professional collaboration and a better focus on improving medicine use through the monitoring of outcome-related indicators [1]. Thus, the pharmaceutical care (PC) offered at the pharmacy is considered as being of great importance by 97% of the Levonorgestrel users surveyed. When asked whether PC had contributed to improving their knowledge about the drug, 89% of the LNG users surveyed said it had. With efficient pharmaceutical care, only 1 in 10 people receiving the Levonorgestrel dispensation left the pharmacy with doubts. In Portugal, EC was used correctly (correct use defined as the proportion of user-purchasers who acquired EC up to 72h after unprotected sexual intercourse and had never used it in the current cycle) by 96.9% of user-purchasers [31]. In UK, women welcomed the pharmacist's interventions indicating the benefit of having different contraception options available and pharmacists were positive about their involvement in these studies about EC [16].

The urgency in the dispensation with respect to the duty pharmacies open at night or the weekend was also studied. Contrary to expectations, only 26% of Levonorgestrel dispensations were performed at a duty pharmacy. Another observation was that the dispensing frequency is higher from Monday to Friday and not during the weekend as might be expected [39].

Conclusions

Emergency contraception should not, in any case, replace a conventional contraceptive method. Access to regular contraceptive methods should be promoted among women who ask for emergency contraceptive treatment on repeated occasions. Likewise, sex education and family planning of young women should be encouraged.

Considering that EC has been repeatedly, that one out of every two users of LNG did not know the adverse effects which confirms the need to inform them about this medication during dispensation, that 59% of those under 18 requesting a LNG-based medical product did not know the adverse effects of this drug and that 8.9% of LNG users were being treated with active ingredients that interact with LNG, we believe that proper Pharmaceutical Care when dispensing EC prevents unnecessary use of this drug in women using a regular contraceptive method correctly and reduces the problems and negative outcomes associated with EC.

Levonorgestrel users need to be aware that treatment should be started as soon as possible after having unprotected sex for the drug to be most effective. Therefore, the pill should be taken as soon as possible, preferably within the first 12h and not later than the first 72h (3 days), after having unprotected sex.

The use of Levonorgestrel does not contraindicate the continuation of regular hormonal contraception. After the use of emergency oral contraception, the use of a barrier method (condom, spermicide, cervical cap, diaphragm) is recommended until the start of the next menstrual cycle.

Community Pharmacies, like other health centers, should contribute to the health education of the population. These studies on the use of medicines performed in pharmacies benefit patients as well as pharmacists and the health system in general. Pharmacists work to improve the quality of care in the use of LNG by providing Personalized medication information (PMI), which is given in a concise and effective way during its dispensation, as well as the handing out a leaflet designed for the study. If it is necessary to give more information, a pharmacotherapeutic follow up can be arranged for the patient. Users of pharmacies positively valued the development of initiatives related to the improvement of drug use.

Declaration of Transparency

Carmen Rubio Armendáriz the author for the correspondence on behalf of the other signatories guarantees the accuracy, transparency and honesty of the data and information contained in the study; that no relevant information has been omitted; and that all discrepancies between authors have been adequately resolved and described.

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Conflict of Interests

None.

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