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## Opinion of students of Medical University of Lublin on emergency contraception

### Abstract

**Introduction.** Many women at the reproductive age face the dilemma of choosing the best contraceptive method. Apart from the natural birth control methods, there is a large selection of barrier, hormonal or invasive procedures. Birth control also includes emergency contraception, which can be used in a short period of time after an unprotected sex. In 2015, Ella One (uliprystal acetate) has been approved as an over-the-counter drug in Poland.

**Aim.** The purpose of this study was to check the knowledge and survey opinions of students of various faculties of Medical University of Lublin concerning the topic of emergency contraception.

**Material and methods.** An anonymous online questionnaire was used in the study. It included single and multiple-choice questions. The results were analyzed using Microsoft Excel 2011.

**Results.** 256 students, aged 19-27 took part in the study. 81.3% of the respondents declared themselves as Christians. 47% of interviewees said that using emergency contraception is ethical. In the group of Christians, 37.5% claimed that emergency contraceptives should not definitely be sold as an OTC drug while among the non-religious individuals, only 6% shared that view. 60.6% of students decided that EC is not a form of abortion, On the other hand, 29.9% opted for it being an abortion. In the group of female participants, 14.9% said that they had used emergency contraception at least once in their lives. As it comes to evaluation of students' knowledge about the topic, only 15.23% knew the way of uliprystal acetate worked and even less (11.32%) were able to explain the way levonorgestrel works.

**Discussion.** According to the Catholic Church, the only acceptable forms of family planning include sexual abstinence during fertile days or calendar-based contraceptive methods. Postcoital contraception is treated as a sin punished with excommunication. Therefore, adhering by the rules imposed by the Roman Catholic Church has huge impact on the choices that believers make, also when it comes to birth control. This statement has been confirmed by many studies conducted in Poland, where 90% of population consider themselves Catholics.

**Conclusions.** Emergency contraception remains a controversial topic in Poland. Students of Medical University of Lublin seem to have insufficient knowledge about the effects of available drugs. There is a need to educate future healthcare providers, so they could provide reliable advice and recommendations to their patients.

**Keywords:** emergency contraception, religion, medical students.

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### INTRODUCTION

Birth control methods are an issue for all women at the reproductive age. It is also a problem that affects their relationships and future. Some couples decide to use natural birth control methods only, whereas others choose either pharmacological or barrier methods or even invasive procedures. Driven by the rising demand for contraception, drug companies supply many contraceptive methods using different mechanisms. There is a huge selection of barrier contraceptives that prevent pregnancy by physically blocking the sperm from entering the uterus available in Poland. These products include condoms (both male and female), cervical caps, diaphragms and contraceptive sponges with spermicides. Hormonal methods like

oral pills (progesterone-only or combined oral pills), patches, implants, injections and vaginal rings are in wide use. Emergency contraception can be regarded as one of the hormonal methods. Since January 2015, oral pills EllaOne (uliprystal acetate) have been registered as a product available without prescription. This decision produced strong reactions of both Polish media outlets and authorities, with a strong voice of denial issued by the church authorities. According to Team of Experts of Episcopate published on 16th of January 2015, using an emergency contraception pill is immoral. Authors say that the possibility of buying EC pills as OTC drugs would promote licentiousness and interfere with human sexuality. Catholic bioethics experts point to the possible side effects that using these drugs might have on female health, particularly

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on the group of youngsters [1]. Nonetheless, other studies show that there are no significant differences in the way that the drugs affect various age groups.

There are two emergency contraception products on sale in Poland – levonorgestrel and ulipristal acetate. The effects that these drugs have are different. The first one is levonorgestrel, which is a manufactured hormone, used in a number of birth control methods. When combined with estrogen, it becomes an oral birth control pill. In some countries, levonorgestrel is available in an implantable form, to be used in intrauterine systems. For instance, it can be used in hormone replacement therapy. When it comes to emergency contraception pills (ECPs), they can be used either independently or in combination with estrogen. The levonorgestrel-only method uses levonorgestrel 1.5 mg (as a single dose or as two 0.75 mg doses 12 hours apart) expected to be taken within 72 hours following the unprotected sex but there are studies indicating that taking them as late as 120 hours after the intercourse may also prove effective [2]. The product contains higher levels of the hormone found in some types of daily use oral hormonal contraceptive pills and works in a similar way to these contraceptive pills by stopping ovulation and therefore preventing pregnancy. The basic way that levonorgestrel works as a progestogen-only emergency contraceptive pill is, according to International Federation of Gynecology and Obstetrics (FIGO), preventing fertilization by inhibition of ovulation and thickening the mucosa of the cervix. Although, the precise mode of action of levonorgestrel is incompletely understood. It needs emphasizing that levonorgestrel will not stop pregnancy in case a woman is already pregnant and according to the European Medicines Agency that approved a change to the label of the drug, there is no medical evidence that the product will affect the development of the fetus [3]. The possible side effects of using levonorgestrel as an ECP are very similar to the side effects of regular prescription-only birth control pills. The most common side effects (reported by 10% or more) include: dizziness, headaches, nausea, abdominal pains, uterine pains, delay of menstruation, heavy menstruation, uterine bleeding, or fatigue; some common effects (reported by 1% to 10%) included diarrhea, vomiting, or painful menstruation [4]. The other drug is ulipristal acetate, which is an orally-active synthetic selective progesterone receptor modulator which acts via high-affinity binding to the human progesterone receptor. It is not used in any other form of contraception besides emergency contraception. It can be used for pre-operative treatment of moderate to severe symptoms of uterine fibroids.

In case of emergency contraception, a 30 mg pill is used within 120 hours following an unprotected intercourse or contraceptive failure. It has been shown to prevent about 62-85% of expected pregnancies. When used for emergency contraception, it works as an inhibitor or method of delaying ovulation through suppressing the LH surge. Pharmacodynamic data show that even when taken immediately before ovulation is scheduled to occur (when LH has already started to rise), ulipristal acetate is able to postpone follicular rupture for at least 5 days in 78.6% of cases. In case ovulation occurred, the drug would not be efficient. This is why the pill should be taken as soon as possible after the sexual intercourse. Ulipristal acetate does not terminate pregnancy nor does it interfere with the fetus. It should be mentioned that unlike levonorgestrel, and like mifepristone, ulipristal acetate has been proven to be toxic to the fetus in animals. There is no evidence of such effects in humans. The list of adverse effects of the drug is shorter than levonorgestrel's.

Common side effects include abdominal pain, mood disorders, myalgia and back pain as well as temporary irregularities of the menstrual cycle or disruption. No common side effects have been reported. In order to make an informed choice, women must know that ECPs – like the birth control pill, patch, ring, shot, and implant and even like breastfeeding – prevent pregnancy primarily by delaying or inhibiting ovulation and inhibiting fertilization, but may at times inhibit implantation of a fertilized egg in the endometrium. However, women should also be informed that the best evidence available indicates that ECPs prevent pregnancy by mechanisms that do not involve interference with post-fertilization events [5].

## MATERIAL AND METHODS

The study was conducted in March 2016 and the authors used a standardized interview. 256 students (80 men and 176 women) of Medical University of Lublin, aged 19-27 were inquired. The author's interview questionnaire was used as a research tool. It comprised 20 questions, both of the single and multiple choice type. The obtained results were ordered, calculated and analyzed using Microsoft Excel 2011 software.

## RESULTS

### The structure of age, education and place of residence

256 students aged 19-27 were involved in the study. The mean age was 21.94 and median – 22. Big city (more than 300 000 people) residents constituted the largest group of respondents (42.2%), 36.3% of students were inhabitants of small cities (less than 300 000 residents) while another 21.5% were countryside residents. Most of the respondents were medicine students (83.6%), while midwifery students accounted for 6.6% of the respondents and students of dentistry 3.9%. The remainder were nursing, physiotherapy, pharmacy, medical analysis, dietetics and nutrition or cosmetology students.

### Attitude to religion

Among the respondents, some 81.3% were Christians and 1.2% practiced other religions. About 17.5% of the respondents declared themselves atheists (Figure 1). In the question about attitude to religion, as much as 45/3% of members of the study group chose answer *I regularly participate in religious practices*, 33/6% chose *I sometimes participate in religious practices* and the rest of the group answered *I never take part in religious practices*.

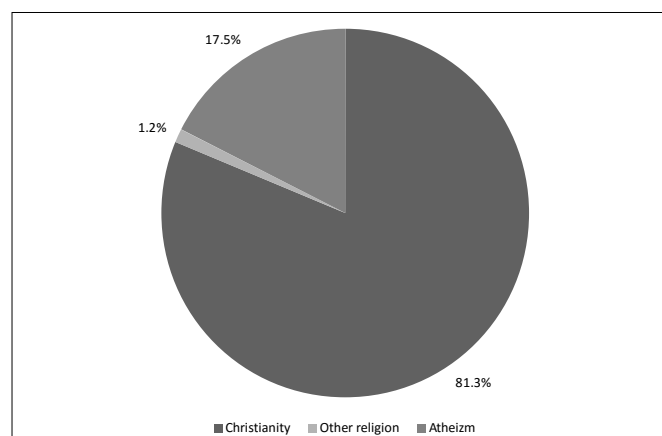


FIGURE 1. Religious beliefs among the respondents.

**General attitude to emergency contraception**

Students were asked about the ethics of using emergency contraception. About 47% of them provided positive answers, another 32% negative, while 21% claimed that it is hard to determine (Figure 2). Another question was *Do you think that emergency contraception is a form of abortion?* Most students said *no* (60.6%) whilst 29.9% said *yes* and the rest of them marked *it is hard to say* (Figure 3).

**Popularity of emergency contraception among students of Medical University of Lublin**

The question *Have you/your partner ever used emergency contraception?* elicited 14.1% positive answers (Figure 4). Another question was *Would you use emergency contraception or recommend it to your partner?* 29.7% chose the answer *definitely no*, 16.8% *rather not*, 12.1% *I do not know*, 24.2% *rather yes* and 17.2% *definitely yes*. Among women, 14.9% claimed that they had used EC themselves. When it comes to answers provided by men, some 11.4% said that their partner had used EC at least once. In the group of Christians 13% used EC and in the group of atheists 17.4% did so. Respondents were asked whether they would recommend emergency contraception to their friends if asked for advice. About 25% marked answer *I would not definitely recommend it*, 16% *I would not rather recommend it*, 23.4% *I would rather recommend it*, 18.8% answered *I would definitely recommend it* and the rest of study group chose *It is hard to say*.

**Emergency contraception as OTC drug**

According to the obtained results, some 31.6% of students claimed that emergency contraception definitely should not be sold as an OTC drug, while another 18% answered *rather not* and 23% of respondents answered that such a pill should rather be sold as OTC drug, 24.6% of students claimed that EC pill should definitely be sold as OTC drug. Amongst 208 Christians participating in the study, 37.5% said that EC should not definitely be sold as an OTC drug (Figure 5a). On the other hand, only 6% of the atheists (45 respondents) said that EC should not definitely be sold as an OTC drug (Figure 5b). There was a question *Who should have access to the OTC emergency contraceptives?* As much as 29,3% of respondents answered *adults*, 10,5% *everyone*, same 10,5% *patients over 15 years of age*. Students, who claimed that EC pills should be sold as OTC drugs, were asked why they think so. The most common answers included *people do not understand mechanism of drug action*, *the ease of buying a pill leads to an increase in risky sexual behaviors*, *people do not know how to use EC*. Interestingly enough, 23% of all respondents answered *it goes against my beliefs*. To the question *Should EC be advertised?* almost half of group (48%) answered *definitely no*, 27.3% *rather no*, 5.5% *rather yes*, 4.7% *definitely yes* and 14.5% *I do not know*.

**Opinions of the future healthcare employees**

The first question in this section was *Would you recommend using an emergency contraception if the patient asked you for an advice.* 11.3% respondents said they would definitely recommend it, 24.6% said they would rather do, 19.1% opted for not recommending, the biggest group of 25% said they definitely would not recommend it if asked. The second question was similar to the first one but concerned a patient going through a difficult phase of their life. 23% of respondents said they would definitely recommend it, the biggest group of 25.4%

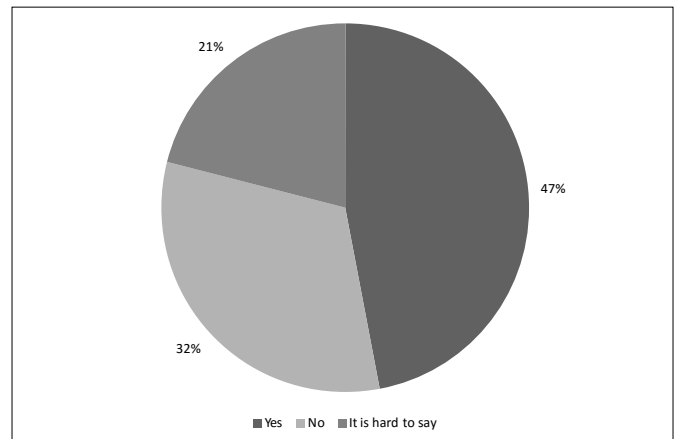


FIGURE 2. Respondents' views concerning the ethics of using emergency contraception.

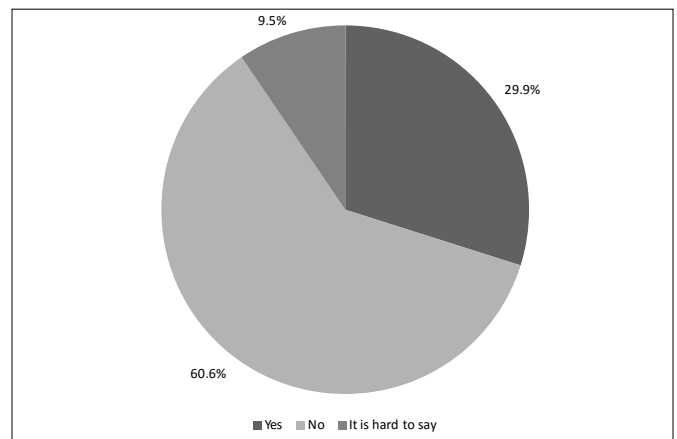


FIGURE 3. Using emergency contraception is a form of abortion.

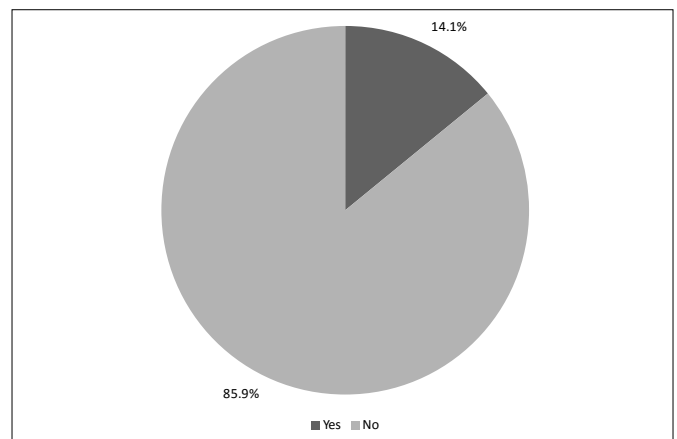


FIGURE 4. The percentage of people who used emergency contraception.

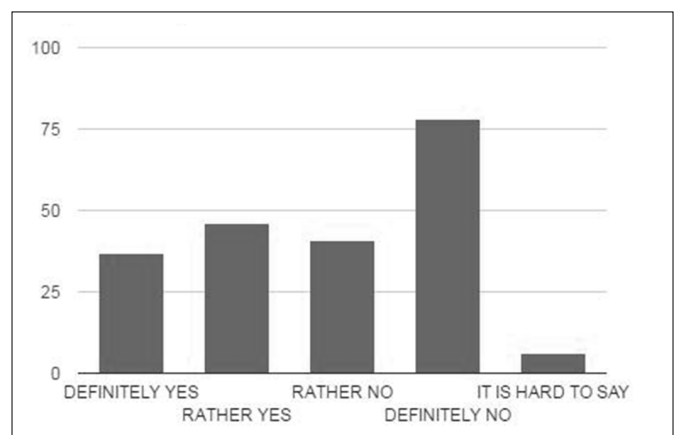


FIGURE 5A. Christian respondents' opinions about selling ECP as drugs.

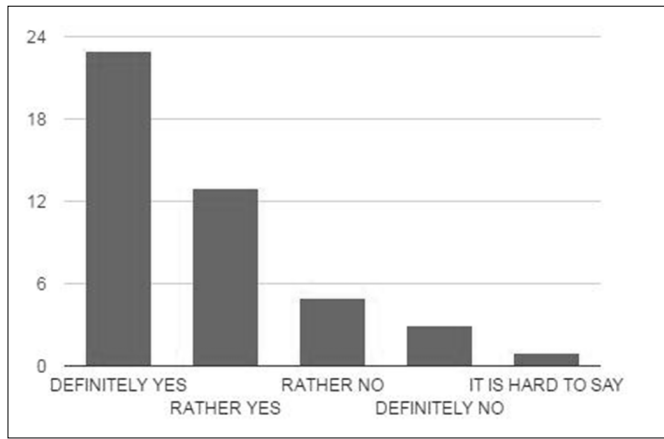


FIGURE 5B. Atheist respondents' opinions about selling ECP as drugs.

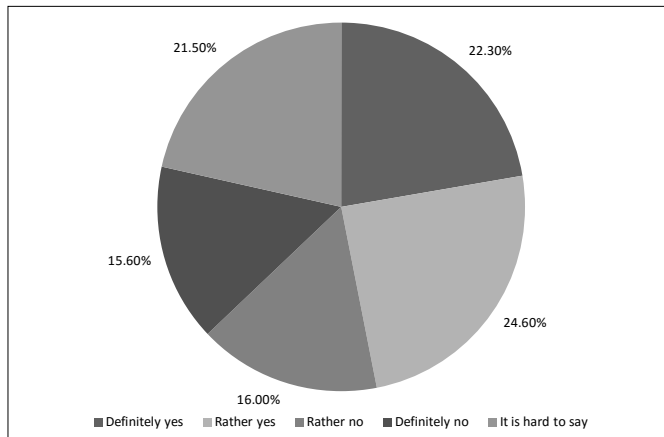


FIGURE 6. Administration of ECP drugs to patients with severe genetic mutations – opinions.

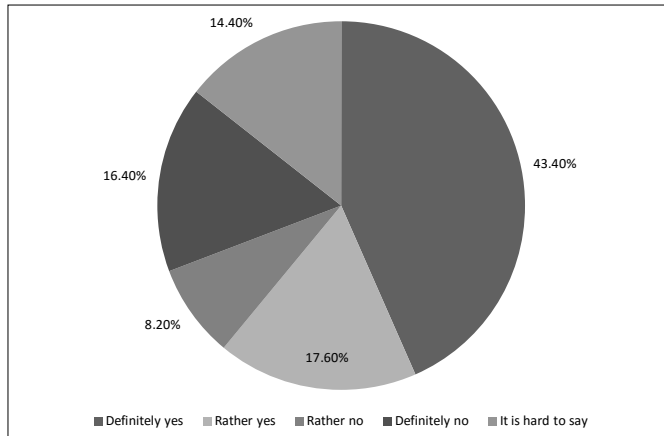


FIGURE 7. Administration of ECP drugs to rape victims – opinions.

said they would do it, 13.3% said they would not do it and 18.4% definitely would not recommend it. To the question *As a health service worker would you recommend using an emergency contraception to your severely ill patient (for example oncological patient)?* 19.1% respondents chose definitely yes, the biggest group of 25% say rather do recommend, 12.5% rather would not recommend it and 16% definitely would not do it. The next question concerned a patient with a severe genetic mutation. To that question 22.3% of the respondents opted for definitely recommending, 24.6% said they would recommend it, 16% was against recommending and 15.6% definitely would not recommend EC to that patient (Figure 6). The last question in this section was *Would you recommend using an emergency contraception to the victim of*

*sexual abuse (rape)*. This is the only question in this section to which more than 50% of respondents opted for recommending ECs. Consequently, 43.4% said that they would definitely recommend the drug and 17.6% said they would do it. 8.2% of respondents was against recommending and 16.4% definitely would not recommend the drug to rape victims (Figure 7).

**Assessment of knowledge of medical students on emergency contraception**

This section included two multiple-choice questions concerning levonorgestrel and uliprystal acetate. Students were asked about the way the drugs work.

First question concerned uliprystal acetate and the correct answers were 1) uliprystal acetate delays ovulation 2) uliprystal acetate affects endometrium. Only 15.23% of respondents marked both.

The second question concerned levonorgestrel. This time three answers were correct 1) delays ovulation, 2) affects endometrium so as to prevent implantation, 3) changes the cervical mucus. Only 11.32% of respondents chose all three correct answers. 18% of students marked two out of three correct answers.

**DISCUSSION**

Postcoital contraception can become a protection against unwanted pregnancies. It can be used in a situation of an unprotected sexual intercourse or contraceptive failure [6]. The views on the use of this type of contraception are dependent on one's religious views. Women who regarded themselves as religious individuals proved less eager to use hormonal contraception. In contrast, women that do not consider religion a crucial thing in their lives, are not that convinced in this regard [7]. According to the Roman Catholic Church, family planning involves preserving the purity of marriage. It is understood as using natural contraceptive methods only. They include, among others, sexual abstinence during fertile days, which are calculated using the calendar-based method. Any other forms of birth control are regarded sinful and morally unacceptable [8,9]. According to this, the use of methods that prevent implantation of the embryo in the uterus is considered as an abortion and is a subject to the Code of Canon Law punished by excommunication [10,11].

Rutkowska et al. conducted a study to determine the influence of the Catholic faith over women on the decision concerning contraceptive methods, as well as the view of women about the harmfulness of contraception in general. The study demonstrated that the selection of a contraceptive method is influenced by one's religious beliefs. Women considering faith important have rarely decided upon taking the hormonal contraception, which was not accepted by the Church. 66.70% of them are not using hormonal contraception, as opposed to 59.30% irreligious women using hormonal contraception [7]. These studies confirm the degree to which the Roman Catholic Church has an impact on the behavior of women believing and practicing in relation to methods of preventing pregnancy.

Some of the most frequently mentioned benefits of hormonal contraception include the possibility of increased sexual freedom and reduced risk of the occurrence of an unplanned pregnancy. This is confirmed by research conducted among medicine students at Medical University of Poznan (Wilczak et al.) According to this study, 70% of the 207 students pointed

to preventing unwanted pregnancies as a reason to start taking oral contraceptives [12].

Birth control is a important issue, when discussing wide-scale assistance offered to victims of sexual violence. Numerous complications of rape include sexually transmitted diseases, mental disorders, depression as well as an unwanted pregnancy. Preventing the last issue seems to be the easiest task. In this situation use of emergency contraception is also accepted by the medical community associated with the Catholic Church. According to The Ethical and Religious Directives for Health Care Services it is permissible to use emergency contraception for victims of rape in order to prevent fertilization. The crucial aspect of the mechanism of this therapy, is the fact that it does not harm the fetus. The drug administered in this situation is levonorgestrel (Plan B, Escapelle). In The Ethical and Religious Directives for Health Care Services is stated that the Catholic hospitals should take care of violence victims and apply treatment against the possible consequences of rape, including pregnancy [13].

## CONCLUSIONS

1. Using emergency contraception remains a controversial issue. Various social groups have completely different opinions about action mechanisms of such pills, health consequences and moral responsibility.
2. Students of Medical University of Lublin lack sufficient knowledge about the ways emergency contraceptives work
3. Medical students should be better educated about contraceptives, so as to be able to make an informed choice or advice their future patients concerning emergency contraceptive methods. Furthermore, it is important to remember that such therapy may not be acceptable for all patients, due to their personal beliefs.

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