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THE KNOWLEDGE OF THE NIŠ UNIVERSITY STUDENTS ABOUT EMERGENCY CONTRACEPTION

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Emergency contraception is a treatment that used as an emergency procedure to prevent unwanted pregnancy after an unprotected sexual intercourse or contraception failure regardless of the point in the menstrual cycle. The most common method is the treatment with sexual steroids and the second-line form is the copper intrauterine device. A considerable number of female students of Nis were informed about the existence of emergency contraception. Younger generations (I/II years of sudy) were better informed than older generations (III/IV years of study): 81.6% vs. 57.5%. The difference was statistically significant (χ^2 =7.91;p<0.005). The students of medicine were better informed than the students of art and science: 87.9% vs. 78.2% vs. 70.0% but there was not statistical difference. It is expected that adequate usage of emergency contraception will significantly reduce the number of unwanted pregnancies. It is only emergency treatment and is not a substitution for regular contraception. Students are very important in the population of youth and it is expected that they could be optimally informed about this method of fertility control. *Acta Medica Medianae 2014;53(1):15-18.*

***Key words:**: emergency contraception, students*

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Introduction

Emergency contraception (EC) is treatment that is used as an emergency procedure to prevent unwanted pregnancy after unprotected sexual intercourse or possible contraceptive failure regardless of the point in the menstrual cycle. It is not a regular but a situation method of contraception for exceptional situations.

The average fertile period during a menstrual cycle lasts only six days (the day of ovulation and 5 preceding days). When the ovulum leaves the ovary at ovulation it begins a four-day journey down the oviduct to the uterus. It may meet the sperm and be fertilized. According to medical definition, the pregnancy starts when implantation has occurred. EC takes effects during the period which precedes the ovulation and implantation of the blastocyst in the endometrium and therefore it is not an abortficiant. The pregnancy is expected in 15% of cases if an unprotected sexual intercourse took place three days before ovulation, in 30% if it happened 1-2 days before ovulation and in 12% if it happened on the day of ovulation (1-3).

The most common reasons for EC use are: after voluntary sexual intercourse that took place with no contraceptive protection, after an incorrect or inconsistent use of regular contraceptive method or when there has been an accidental failure as condom breakage or slippage, failed coitus interruptus (when ejaculation has occurred in the vagina or in the external genitalia), miscalculation of the fertile period when using periodic abstinence or failure to abstain from sexual intercourse during the fertile days, failure to take oral contraception for more than 24 hours during the first week of treatment or more than 3 days regardless of the point in the cycle, when a woman has been a victim of sexual assault and had no contraceptive protection (4).

The method of choice for EC is treatment with sexual steroids. During 1960s high doses of estrogens were used. During 70's of the past century, combined oral contraceptive pills were introduced (Yuzpe regimen): 2 pills containing 50 mcg or 4 pills containing 30mcg ethinil estradiol each and appropriate amount of progestin levonorgestrel (LNG). The first dose is taken within 72 hours after unprotected sexual intercourse and the second dose 12 hours later. During the 1990s, independent administration of LNG was introduced: 0.75mg within 72 hours since unprotected intercourse and the second same dose 12 hours later or a single dose of 1.7mg within 72 hours. During the 1970s, Cu-IUD was introduced as second line EC (5). The most possible mechanism of action of sexual steroids is through inhibition of hypothalamus and hypophysis which results in anovulation, ovulatory dysfunction or delay, or insufficient corpus luteum. The Cu-IUD creates an intense inflammatory reaction of the

endometrium and therefore it becomes inappropriate for implantation. Copper ions provoke direct toxic effect on sperm and blastocyst (1,2,5).

Aim

The aim of this article was to assess the students' knowledge about the existence, availability, effectiveness and safety of emergency contraception.

Methodology

The survey enrolled 648 female students of the University of Niš during 2011/12 academic year. An observational, cohort study was performed by using an appropriate original and anonymous questionnaire. Participants were divided into three groups: the students of medicine (FM), the students of arts (FA) and the students of science (FS).

Results and discussion

Students are vulnerable and demographically important population because they are future reproductive source of one society. Their reproductive health can be affected by their reproductive behavior and fertility control. Risky behavior is more often among students than among adults (6). Female students often put off their desire to give birth to a baby in order to complete their studies, get professional affirmation or stable financial basis. As a result there is prolonged period of sexual activity before marriage. It is expected that female students are better informed than other young girls. The reproductive health can be affected by: the age of first intercourse, the number of all sexual partners that she has had and the number of partners she has now, how she chooses them, type of sexual relationships, frequency and type of sexual intercourse. The first sexual intercourse is often without contraceptive protection. A survey which was performed in Ethiopia showed that 42% of female students had their first sexual intercourse without protection (7). It is usually followed by using unsafe, traditional methods, doubt or fear that they are pregnant, which is why they seek help and advice. Unwanted pregnancy is the one which was not wanted at the moment of conception by one or both partners. The average time of first sexual intercourse of our participants was 17 years of age (from 13 to 25 years).

At the time of this survey, some methods of contraception were used by 96.14% of participants, but 3.86% did not use it because they were single or temporary separated from their partners, they had a desire for a baby or they were not interested in it. The most often used method of contraception was condom (59.57% participants used it; 80% regularly; 35% experienced condom breakage or slippage). There is a rising popularity of condom use is Sweden (in 1999 - 37%; in 2004 - 52%; in 2009 - 67%) (8). Contraceptive pills are used by 15.12% of our participants and traditional methods by 21.5%.

Considerable numbers of our participants were informed about EC. Younger generations (I/II years of study) were more informed than older generations (III/IV years of study): 81.6% vs. 57.5%. There was statistically significant difference in the knowledge about the existence of EC between female students of different generations (χ^2=7.91; p<0.005). The students of medicine were better informed than the students of art and science: 87.9% vs.78.2% vs. 70.0%, but there was not statistical significant difference. Having enough knowledge and positive attitude towards EC is essential for its usage in the event there is a need for it. We cannot expect that young people know the mechanism of action of EC but all of them should recognize that EC is far better than abortion. We have to bear in mind that media play a very important role (9). Students of medicine and science are better informed than the students of arts that EC pills can be found at pharmacy on out-of-the counter basis (the younger group: 68.8% vs.69.3% vs. 51.2%; the older group 79.7 vs. 67.4% vs. 50.6%). There was not statistically significant difference. Formal sexual education had 80% of our participants and 95% of them thought that it was beneficial. Usually, it was organized at school. Younger generations had better quality of this education and were better informed about EC.

EC was used by 178 participants (27%): LNG-regimen 21.6%; Yuzpe regimen 4.94% and Cu-IUD 0.46%. The EC usage is increasing among students in Sweden: in 1999 - 37%, in 2004 - 45% and in 2009 - 65% (8). Our participants did not use EC more than it was necessary (only 3% of them used it four and more times). According to the World Health Organization, sexual steroids for EC can be used whenever necessary because repeated usage does not harm health and it is very important to inform young women that EC does not replace regular contraception which is much more effective and safe (4). One half of our participants did not know this. EC can also be used by women who have contraindication for combined oral contraception because the risk of unwanted pregnancy is very high for these women (10).

Table 1. Characteristics of examined groups

Year of study	FM		FA		FS		SUM	
	No.	%	No.	%	No.	%	No.	%
I/II	48	13.83	211	60.81	88	25.36	347	53.55
III/IV	59	19.60	156	51.83	86	28.57	301	46.45
SUM	107	16.51	367	56.64	174	26.85	648	100.00

Effectiveness of EC was experienced by 1% of our participants. It is difficult to assess the effectiveness because we cannot know the time of the ovulation or its association with unprotected sexual intercourse. It can be shown as failure rate (1,5,11). Eight pregnancies are expected in 100 women who had unprotected sexual intercourse during two middle weeks in menstrual cycle. If Yuzpe regimen is used, two women will get pregnant and if LNG regimen is used only one woman. It means that Yuzpe regimen can prevent six pregnancies and LNG regimen seven. In other words Yuzpe regimen can prevent 76% of pregnancies and LNG regimen 89%. It is best that EC is used during the first 12 hours after unprotected sexual intercourse, it is good during 72 hours, but some weaker effect persists during 120 hours (4,12). If a woman uses sexual steroids for EC she will need to use condom till her next period if she intends to have new sexual intercourses. The following day after EC a woman can start to use combined oral contraceptive pills (condom should be used during the first seven days). The period comes in expected time in one half of women who used EC, but it can occur just one day after it. If the period does not occur in three-week time, pregnancy must be confirmed or denied. If she wants to continue her pregnancy, we can calm her down that we do not expect any harm effect on embryo or pregnancy (4).

Cu-IUD can be used as a second-line EC. It is an alternative for hormonal EC if a woman presents more than 72 hours after an unprotected sexual intercourse or sexual steroids are not available. The device is a good option for adequately selected women within five days since unprotected sexual exposure. This method may be particularly useful if the client is a multipare and not at risk of sexually transmitted infection. Her desire for contraception at that moment may be useful for the introduction of the safe, economical and long- term method. Condom use till the next period is not necessary after insertion of IUD. The effectiveness is extremely high: failure rate is only 1%. If Cu-IUD has been inserted for EC and the woman does not want it, it can be pulled out during or after her next period (1,5,11, 13,14). Usually, there is a lack of time for a control for the presence of sexually transmitted infection which can be introduced into uterine cavity during insertion (prophylactic antibiotic can be given before insertion of the IUD) (4). The incidence of sexually transmitted infections among young people is increasing and there is a risk for their reproductive health. Risk factors are: frequently change of partners, occasional partners or partners from high risk group. Young girls have very sensitive cervix uteri when these infections are concerned. One third of our participants did not know that EC could not protect them against sexually transmitted infections.

Fifty-five percent of our participants knew that EC is a better option than abortion. One half of all pregnancies in the USA are unintended and one half of them are terminated by abortion (in the group of 18-19 years 79% pregnancies are unintended and 60% in the group of 20-24 years; one third of all women who require an abortion is at the age of 20-24 years) (15). Abortion is acceptable neither for medical nor for civilization reasons because it is a menace for women's reproductive health. Bad influence of repeated abortions has a cumulative effect and is a sign of low level of health education and irresponsible contraceptive use. Abortion has taken place in family planning and even an optimal contraception use will not expel it, but it will stay in case of contraceptive failure. One forth of our participants was afraid that EC might have harmful effect on their health and further fertility and one third thought that abortion was performed in that way.

It is necessary that every potential EC user is given emotional support without any prejudice and understandable information. It is necessary to stress the importance of safe regular contraception. This is especially important for young girls who have not given birth and most students are in this group. There is no absolute contraindication to EC use with sexual steroids other than known pregnancy or a doubt for it because the treatment will be ineffective (1,5,16). In fact, EC with sexual steroids can be used by women with a contraindication for combined oral contraception because there is a very short exposure to estrogen and a great risk of pregnancy. The risk of pregnancy for those women is significantly greater than a possible risk of EC, but it is better for them to use LNG than Yuzpe regimen (1,4,14, 17). According to available information there is no risk of teratogenicity if sexual steroids are accidentally used during pregnancy (the incidence of major malformations are the same as in general population). EC is almost always used less than 15 days after possible ovulation when cells are pluripotential and organogenesis has not started yet (1). Half of our participants said that they would use EC and would recommend it to a friend.

Conclusion

Students are important, high risk youth group that are usually not prepared enough for sexual experience and that can have consequences of catastrophic dimensions on their health and further fertility. There are economical and psychological needs for EC use because an unwanted pregnancy is a great problem for the person and the society. Nowadays, EC has a well-defined place in family planning and is available at pharmacies on over-the-counter basis. There is a need for promotion of EC use and responsible sexual behavior. The counseling should be done on time by giving emotional support and without prejudice. It is estimated that optimal EC use would significantly reduce the number of unwanted pregnancies and risks which usually follow an abortion especially if the first pregnancy is terminated in this way. It is important to stress that EC is just a treatment in emergency situation and not exchange for much effective regular contraception.

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OBAVEŠTENOST NIŠKIH STUDENATA O HITNOJ KONTRACEPCIJI

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Hitna kontracepcija je tretman koji se sprovodi sa ciljem da se spreči pojava neželjene trudnoće posle nezaštićenog polnog odnosa ili uočene kontraceptivne greške u bilo kom periodu menstrualnog ciklusa. Najčešće se koriste seksualni steroidi, a druga linija izbora je bakarni intrauterini uložak. Znatan broj niških studenkinja obavešten je o postojanju hitne kontracepcije. Mlađe generacije (I/II godina studija) obaveštenije su od starijih (II/IV godina studija): 81,6% vs. 57,5%. Postoji statistička značajna razlika u obaveštenosti među generacijama (χ^2=7,91; p<0,005). Studentkinje medicine bolje su obaveštene od studentkinja društvenih i prirodnomatematičkih fakulteta: 87,9% vs. 78,2% vs. 70,0%, ali razlika nije statistički značajna. Očekuje se da adekvatna primena hitne kontracepcije znatno doprinese smanjenju broja neželjenih trudnoća. To je samo hitni postupak i nije zamena za regularnu kontracepciju. Studenti su vrlo značajna populacija mladih i očekuje se da su dobro obavešteni o ovoj metodi regulacije plodnosti. *Acta Medica Medianae 2014;53(1):15-18.*

Ključne reči: *hitna kontracepcija, studenti, seksualni steroidi, bakarni intrauterini uložak*

