

Emergency Contraceptives – its Awareness, Practice, Impediments in Acceptance by Families of Defence Personnels at Cantonment.

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Abstract:

Introduction: Unplanned pregnancy is a major public health problem with psychological and economic repercussion for the unprepared individual. In spite of availability of several contraceptive methods 75% of pregnancy is unplanned.

Aim: To ascertain the level of awareness of emergency contraceptive and assess the effect of health education in improving its awareness in women of reproductive age at a military station in India.

Material and methods: Four hundred female were selected and their awareness about contraceptive methods was assessed with help of questionnaire, data were collected from the subjects by trained health assistants and held talk on contraceptive method and pamphlets containing details of emergency hormonal contraceptives were distributed. Following the health education their awareness was assessed with the help of questionnaire given at 3 months, 6 months and 9 months. The data were analyzed using statistical methods.

Result: Only 27(7.3%) respondents were aware of EHC methods. Among 27 women who were aware of EHC, the majority (73%) knew that EHC were in the form of pills. Most women were unaware of the exact time frame in which these pills had to be used. Only 4 women 14.8% knew that women should take the ECP within 72 h of unprotected sex. While many (47%) women felt that it had to be used immediately after unprotected sex, 9 (35.2%) thought that the pills had to be used within 12 h of unprotected sex and 2 (7.4%) did not know about this aspect. Of the 27 women who knew about ECP, 6 (22.2%) did not know about the contra indications and side effects. After the provision of health education by health workers, the awareness of EHC Levonorgestrel by women has increased to 32% , 53% and 67% after three months, six months and nine months respectively. EHC were used by women 18 (5%), 32 (9%) and 84 (23%) after three, six and nine months respectively.

Conclusion: The targeted, sustained contraceptive education of eligible couple, especially husband and wife regarding use of EHC may gradually increase in awareness and usage of it. The health professionals can play a stronger role in informing women and spouse about EHC for its appropriate utility.

Key words: emergency contraceptive, awareness, families in cantonment.

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I. Introduction

Unplanned pregnancy is a major public health problem with psychological and economic repercussion for the unprepared individual. In spite of availability of several contraceptive methods 75% of pregnancy is unplanned. In appropriate and non use of contraceptive methods by the partners for several reasons such as casual sex, failure of method, incomplete knowledge of contraceptive use has lead to unplanned pregnancy. It has put a load of morbidity and mortality as well as economic burden on the women. The problem is more grave in developing countries where 1/3rd of women are mothers below 20 years of age [1]. Even though sexarche (age of 1st coitus) is happening earlier now a days but still the young population is unaware of the hazards of unsafe sexual encounters and modes of avoiding it, leading to increase in number of teenage pregnancies [2]. Adolescence group forms 21.4 percent of the Indian population. Also in India there is a resistance to the concept of 'adolescence' as understood, in the West, - an extended period of education and training for adult roles. [3]

Emergency contraceptives can prevent 75-85% of unintended pregnancies, if used within 72 hrs of unsafe sex. The women who had unsafe sex, had contraceptive failure, or had sexual assault can result in to unplanned pregnancy. But owing to social reasons, majority of adolescents visit quacks instead of getting pregnancy terminated in medical institutions. In spite of EC (emergency contraceptives) got available over the counter in India, still the rate of unintended teenage pregnancy is high owing to it being the underused and unknown method. Also, the misconception that EC is an abortifacient and that its use promotes irresponsibility

as well as promiscuous lifestyle particularly among adolescents, contribute to its under prescription by health professions to prevent unintended pregnancies [4]

The hormonal EC concept came in India in 2000. In public sector, EC got available in 2003 by the name of E pill. Also later in mass media by name of 'I-pill', it was being promoted commercially. Introduction of EC through government supply in the new millennium had empowered the females in India.

Many studies dealing with awareness of EC has been done in India but the awareness in young population and if the knowledge of EC promotes sexual promiscuity has not been adequately investigated.

Aims: To ascertain the level of awareness of emergency contraceptive and assess the effect of health education in improving its awareness in women of reproductive age at a military station in India.

II. Review of Literature

In India where rates of unplanned pregnancies and illegal abortions are high, it is estimated that 75% pregnancies are unplanned and 25% are definitely unwanted, despite having a established a 'National Family Welfare Programme' and widespread efforts by the government to popularize it.[5]

Emergency contraception (EC) (also known as **Emergency Birth Control (EBC)** ,the morning-after pill ,or post coital contraception)refers to measures that if taken after sex ,may prevent a pregnancy.

Forms of EC include:-

Emergency contraceptive pill -- referred to simply as "emergency contraception ,“ “ECPs,or”ECs”or' morning after pill ' – are drugs that act both to prevent ovulation or fertilizations or possibly fertilization, subsequent implantation of a blastocyst (embryo).ECPs are not to be confused with chemical abortion methods that act after implantation has occurred .It is a form of EHC.

Intrauterine contraceptive device(IUCDs) – usually used as a primary contraception method, but sometimes used as a emergency contraception up to five days post unprotected coitus.

As opposed to regular methods of contraception, ECs are considered for use in occasional cases only, for example in the event of contraceptive failure .Since they act before implantation ,they are considered medically and legally to be forms of contraception. Some pro-life groups define pregnancy as beginning with fertilization, and therefore consider EC to be an abortifacient.

Types of ECPs

The first high- dose hormonal drug used for emergency contraception was **diethylstilbestrol(DES)**. After DES, two other forms were developed : the combined or **Yupze** regimen which uses large dose of both estrogen and progestin taken as two doses at twelve hour intervals. Since Yupze is less effective and causes more side-effects than progestin only ECPs were introduced and combined estrogen –progestin products have been withdrawn. The **progestin-only** method uses the progestin levonorgestrel in a dose of 1.5mg,either as two 750 ug doses 12 hours apart ,or more recently ,as a single dose .This method is now known to be more effective and better tolerated (less nausea or vomiting)than the Yupze method and is available round the world in different names; in the U.S. and Canada as Plan B, in the UK as Levonelle ,and in France as NorLevo ,in India as Pill 72,Unwanted ,etc.

The drug **mifepristone** may be used either as an ECP or as an abortifacient, depending on if it is used before or after implantation .In the USA it is most commonly used in 200-or 600-mg doses as an abortifacient but in China it is commonly used as an ECP. Used for ECP, a low dose is slightly less effective than higher doses, but has fewer side effects .As of 2000 the smallest dose available in the USA was 200 mg. A review of studies in humans concluded that the contraceptive effects of the 10-mg dose are due to its effects on ovulation , but understanding of the mechanism of action remains incomplete .

Higher doses of mifepristone can disrupt implantation , and unlike levonorgestrel , mifepristone is effective in terminating established pregnancies after sexual intercourse ,not just the morning after. Ulipristal acetate (UPA) is recently introduced as EHC and approved by USFDA.

Effectiveness of ECs

The effectiveness of emergency contraception is calculated differently than that of ongoing birth control methods. For ongoing methods, the effectiveness rate is defined as the number of pregnancies over one year of use . For EC, the effectiveness rate is defined in clinical trial conditions as the reduction in pregnancy rate from each use of emergency contraception, using test subjects who have only one act of intercourse per month.

Levonorgestrel ECPs, based on data from two trials in which women took drugs after a single act of intercourse , prevented at least 50% of expected pregnancies. In another clinical trial they prevented at least 75% of pregnancies – also based on data from ECP use after only a single act of intercourse. The "expected

pregnancy rate” against which the effectiveness of ECPs was measured in % per act of intercourse .The actual risk of pregnancy is not a steady percentage – it is extremely high in the several days immediately before ovulation and negligible the rest of the time. The effectiveness of emergency contraception is highest when taken within 12 hours of intercourse and declines over time. The limit of 72 hours is based on a study by the WHO . A subsequent WHO study has suggested that reasonable effectiveness continues for up to 120 hours (5 days) however many doctors (particularly in UK) advise use of an IUD rather than ECPs for emergency contraception between 72 and 120 hours .The older Yuzpe regime of ECPs is believed to reduce pregnancy rates by about 57% .In “perfect use”—use of ECPs for a single act of intercourse per month, the rate of efficacy is between 57% -75 %.

For effectiveness of EC in women who have intercourse around ovulation should ideally be offered a copper intrauterine device. Women with body mass index >25 kg/m should be offered an intrauterine device or UPA [Ulipristal acetate] .[6]

Some studies has opined that Copper T380 intrauterine device for emergency contraception: highly effective at any time in the menstrual cycle. [7] ACOG has opined that Ulipristal acetate (UPA) is more effective than the levonorgestrel-only regimen and maintains its efficacy for up to 5 days. The levonorgestrel-only regimen for emergency contraception is more effective than the combined hormonal regimen and is associated with less nausea and vomiting. Insertion of a copper IUD is the most effective method of emergency contraception.[8]

The awareness is relatively poor among target population, awareness and use of EC remained low. However, similar rates of use were reported among racial, ethnic, and linguistic subgroups. [9] In a study in Nigeria it was found that only 34.6% (206/596) of those who were aware of emergency contraception identified correctly the appropriate time interval for its effectiveness. [10] In a Indian study it was observed that boys were more aware (72%) regarding the number of pills than girls (61%). This might be because of more inclination of boys towards social media than girls. [11]

Several attempts has been made to improve the efficacy of the drug by such as adding the cyclooxygenase-2 inhibitor Meloxicam, which inhibits follicle rupture, has been shown to increase effectiveness of LNG and would probably do the same if given in combination with UPA although this has not been tested. [12] For optimal efficacy EC must be initiated within a specific time frame from UPI (unprotected sexual intercourse); the time intervals vary for different products. [13]

ECP as a birth control method

Emergency contraception cannot be recommended as the main means of birth control because it is not as effective as any ongoing method of contraception. It also does not protect against sexually –transmitted infections .However, it is used by some as a back-up when other means of contraception have failed –for example ,if a woman has forgotten to take a birth control pill or when a condom is torn during sex. It is also a first line of treatment option for victims of sexual assault.

Contraindications & Interactions

EHC should not be used by women who are already pregnant because they are not effective then. Because they contain estrogen, combined estrogen –progestin emergency contraception(Yuzpe regimen) pills should not be used by women with a history of heart attack,stroke or blood clots,or patients with severe liver disease or the very rare condition of porphyria .The herbal preparation of St John’s wort and enzyme-inducing drugs (eg. anticonvulsants or rifampicin) may reduce the effectiveness of ECP and a larger dose may be required.(Levonorgestrel 1500mcg initial dose and a extra 750mcg after 12 hours.)

Side effects

The most common side effects of emergency contraception pills are nausea ,abdominal pain ,fatigue, headache, dizziness , vomiting, and breast tenderness .These side effects are normally resorved in 24 hours . The rate of these effects occurring is less for progestin-only pills when compared to combined pills . Also common is temporary disruption of the menstrual cycle ,which may manifest as early or late periods,spotting or breakthrough –bleeding and missed periods.The primary mechanism of EC is delaying ovulation. Menstruation occurs on average 14 days after ovulation ,so a delayed ovulation will result in a delayed menstruation .Suppression of ovulation may cause an ovulatory bleeding, which could manifest as an early period.

In Ghana ,Frank et al found the awareness regarding EHC to be 11.9% among university students . [14] However ,the awareness level reported in this study is low as compared to the situation in developed countries. Gleit et al. studied a general practice-- based population of 1,290 women aged 17-50 years in California, of whom 28% had heard of EHC. [15] Graham found the awareness level about EHC in teenagers in Southeast Scotland to be 93% [16].A study in USA ,by Belzer et al, revealed that only 23% young women knew about EHC. [17] Similar findings from a study done by Cynthia et al showed the awareness to be 95% in

Princeton University students [18] Such differences in the awareness levels in different countries with respect to contraception may be due to their cultural differences and government policies.

George et al also reported that only 13.6% students were aware of this aspect. [19] In Western countries, an awareness level of 9-29% about usage of ECP has been reported by various authors. [20,21,22,23]. Delbanco et al. reported that out of 423 teenagers who had heard of EHC pills, one-third (32%) did not know that they needed to get them from a physician, and three-quarters (74%) underestimated regarding how long after sexual intercourse could they initiate the regimen. Only 9% knew that EC pills could be used up to 72 hours after unprotected sex. [23] Combination hormone EC pills induce nausea in 30 to 50% of women and vomiting in 15-25% of women. [24] Emergency contraception is undoubtedly useful in sexual assault cases. [25] ECP provides women with a second chance at prevention in cases of unanticipated sexual activity. [26] UPA users were probably more likely to have a menstrual return after the expected date. Menstrual delay was probably the main adverse effect of mifepristone and seemed to be dose-related. [27] A wealth of research clearly demonstrates that improving the availability of EHC does not increase any form of sexual risk taking behavior. Rather it was found that use of EHC might be the stimulus that brings young women into contact with healthcare providers, thus providing opportunities for counseling in matters of responsible sexual behavior: contraception and prevention of sexually transmitted diseases including HIV /AIDS.] It may be argued that promotion of awareness about EHC may encourage premarital sex /sexual risky behavior. There is no scientific evidence, however, to substantiate any of these arguments.

III. Material And Methods

The families of personnel at a military station in northern India were a mixed population representing various part of India and belongs to low middle class group. The married female population of reproductive age who had not undergone permanent method of sterilization was recruited for the study. During 1st March 2015 to 1st August 2016 this study was conducted in military station. Due to prolonged absence of husband for out station duties regular methods of contraception are not often used by couple. Four hundred female were selected and their awareness about contraceptive methods was assessed with help of questionnaire included demographic information, state of awareness on contraceptives particularly emergency hormonal contraceptives and the reasons for not using EHC, such as the lack of knowledge, non-availability of contraceptives and intolerance to medication. The confidentiality of the subject was assured. Participants were enrolled only after written consent. After collection of data from subjects trained health assistants held talk on contraceptive method and pamphlets containing details of emergency hormonal contraceptives were distributed. Free supply of EHC (Levonorgestrel 0.75mg) was made available to them. Following the health instructions their awareness was assessed with the help of questionnaire given at 3 months, 6 months and 9 months. The data were analyzed using statistical methods.

IV. Results

Description of studying population – A total of 400 female were enrolled in the study of which 20 (5%) refused to participate. Fourteen women (3.5%) did not give complete information hence 366 women were finally included in the study. Mean age of the respondents was 26.3 years (SD =2.4 years) although the range was 20 to 45 years only 23 (6.2%) were above 40 years of age. Of the total study subjects 259 (71%) were Hindus, (16.39%) were Muslims and (43) 11.75% were others. Nullipara were 129 (34.69%), Para one were 184 (50.27%), Para two and above were 53 (14.48%) of women, 134 (36%) women had history of spontaneous abortion, 79 (21.58%) women had first trimester MTP and nine (2.4%) had 2nd trimester MPT. Demographic characteristics is shown in Table I.

Table 1: Demographic characteristics

Total number of study subjects	400
Refused to participate	20(5%)
Incomplete follow up	14(3.5%)
Mean age	26.3 SD 3.3yrs
Religion	
Hindu	259(71.0%)
Muslim	16.35(50.27%)
Others	43(11.74%)
Parity	
Nullipara	129(34.69%)
Primi para	184 (50.27%)

Multi para Abortion	53(14.48%)
Spontaneous Abortion	136(36%)
First trimester MTP	79(21.58%)
Second trimester MTP	9(2.4%)

Awareness regarding various contraceptive methods

Of the 366 respondents, 102 (27.86%) knew about different (OCP, IUCD and condom) contraceptive methods. Maximum awareness was regarding condom 318 (87%) followed by oral contraceptive pills 266 (72.95%) and IUCD (intrauterine contraceptive device) 95 (26.1%). When asked from where they obtained this knowledge, 34.7% of the women reported that health ads on TV, as the main source 68.3% were told by their husbands and 22.9% said the main source was the family welfare and health services. Awareness regarding various contraceptive methods before health education is shown in table II.

Table II: Awareness regarding various contraceptive methods

Aware about (OCP, IUCD and condom) contraceptives: 102 (27.86%)	
Aware about condom	: 318 (87%)
Aware about OCP	: 266 (72.95 %)
Aware about IUCD	: 95 (26.1 %)
Knowledge obtained from :	
Advertisement at TV	: 127 (34.7%)
Husband's interaction	: 249 (68.3%)
Family welfare / health worker	: 83 (22.9%)

Awareness of emergency hormonal contraception (EHC) at initial survey

Only 27(7.3%) respondents were aware of EHC methods. Among 27 women who were aware of EHC, the majority (73%) knew that EHC were in the form of pills. Most women were unaware of the exact time frame in which these pills had to be used. Only 4 women 14.8% knew that women should take the ECP within 72 h of unprotected sex. While many (47%) women felt that it had to be used immediately after unprotected sex, 9 (35.2%) thought that the pills had to be used within 12 h of unprotected sex and 2 (7.4%) did not know about this aspect. Of the 27 women who knew about ECP, 6 (22.2%) did not know about the contra indications and side effects.

Awareness of emergency hormonal contraception (EHC) after health education

After the provision of health education by health workers, the awareness of EHC Levonorgestrel by women has increased to 32%, 53% and 67% after three months, six months and nine months respectively. EHC were used by women 18 (5%), 32 (9%) and 84 (23%) after three, six and nine months respectively. Awareness regarding various contraceptive methods after health education is shown in table III.

	Table III: Knowledge of EHC							
	At initial survey		at 3 months		at 6 months		at 9 months	
	No	resp %	No resp	%	No resp,	%	No resp,	%
Awareness of EHC:	27	7.3	117	32	93	53	245	67
Actually used EHC:	0	0	18	5	32	9	84	23

Side effects

Few minor side effects were observed in few ECH users. Nausea and vomiting is the common symptom (23%). Delayed period (15.30%) and abdominal cramps (6.2%) were observed in small number of cases. Side effects are shown in table IV].

Table IV: Side effects		
n= 366		
Nausea and vomiting	87	(23%)
Delayed period	56	(15.30%)
Abdominal cramps	23	(6.2%)

V. Discussion

The number of unsafe abortions has also been increasing despite legalization of abortion in India through MTP Act since 1972. However, morbidity associated with abortion is preventable to a great extent through use of suitable contraception. Introducing of EC through government supply in the new millennium has a potential to significantly change the scenario by empowering the females to control fertility in India.

The population under study at military station is peculiar in the sense that they represent all strata of Indian society, with varied social, educational and economic status. Frequent mobility of the troops away from family coupled with short visit to home lead to infrequent use of contraceptives. It sometimes leads to unpleasant surprises in the form of unplanned pregnancy.

In the present study, almost half of the women were aware that these could be obtained over the counter, whereas the rest thought that these could be obtained from the hospitals or health centers. The participants' awareness pertaining to various methods of contraception was more as compared to their knowledge regarding EHC, which was rather insufficient (7.3%) at the outset. Mild side effects in the form of nausea and vomiting, abdominal cramps can be treated easily; delayed period can be managed by assurance and exclusion of pregnancy. This EHC usage is going to revolutionize the contraceptive choice available to the Indian females. However, as our study result indicates, there is a strong and urgent need for health education of the young women about correct use of EHC, as there is improvement in level awareness as well as actual utilization. For mainstreaming high ECP usage, the paper recommends educational campaign focusing on gynecologists and CHWs, relaxing restrictive policy on advertisement of ECP, involving press media and strengthening supply chain to ensure its regular supply to ASHA (CHW). [28]

VI. Conclusion

The targeted, sustained contraceptive education of eligible couple, especially husband regarding use of EHC may gradually increase in awareness and usage of it. The health professionals can play a stronger role in informing women and spouse about EHC for its appropriate utility. Many women in our study reported that they received awareness from television ads, and from their husband's yet small number of them received awareness from health professionals. This suggests that strategies on promotion of EHC should focus on partners too.

VII. Recommendation

EHC is an effective means of preventing unwanted pregnancies, but unfortunately majority of the women are either unaware or poorly informed of it. More efforts should be exerted towards improving the awareness and access to emergency hormonal contraceptive methods and enhancing their usage by potential users.

The following recommendation is made:-

Free availability of knowledge and provision made of it by Lady medical officers/ Lady Health Visitors / volunteers to all women of reproductive age and to the male partners.

Free supply of EHC through Family Welfare Center/ dispensary/ AFSMD

Accessibility of EHC to women round the clock should be made.

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Area of conflict

There are no areas of conflict of interest in the study.

Institutional ethical and scientific committee clearance has been taken.

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