ORIGINAL ARTICLE

The profile of women who seek emergency contraception from the family planning service

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Objectives To review the profile of emergency contraceptive users, their reasons for using emergency contraception, and whether they use it correctly.

Design Retrospective analysis of medical records.

Setting Six Birth Control Clinics and three Youth Health Care Centres of the Family Planning Association of Hong Kong.

Participants Women requesting emergency contraception between 2006 and 2008.

Main outcome measures Demographics of emergency contraception users, reasons for requesting emergency contraception, number of times the subject had unprotected intercourse before emergency contraception use, type of emergency contraception provided, coitus-treatment intervals, and outcomes.

Results A total of 11 014 courses of emergency contraception were provided, which included 10 845 courses of levonorgestrel-only pills, 168 intrauterine contraceptive devices, and one course of pills plus an intrauterine contraceptive device. The mean age of the users was 30 years. Two thirds (65.6%) were nulliparous and 64.9% had not had a previous abortion. Their major reasons for requesting emergency contraception were: omission of contraceptive at the index intercourse (38.9%), condom accidents (38.0%), and non-use of any regular contraceptives (20.6%). Non-users of contraceptives were more likely to have had a previous abortion. In all, 97.9% of women took emergency contraception within 72 hours of their unprotected intercourse; 98% had had a single act of unprotected intercourse. None of the intrauterine contraceptive device users became pregnant. The failure rate for emergency contraceptive pills was 1.8%.

Conclusions Women requested emergency contraception because contraceptives were omitted or condom accidents. Health care providers should focus on motivating women with a history of abortion to use contraceptives, and ensure that condom users know how to use them correctly. Most women followed instructions on the use for emergency contraception and their outcomes were satisfactory.

New knowledge added by this study

- Hong Kong women used emergency contraception (EC) because they had omitted to do so or had condom accidents.
- Women who did not use contraception were more likely to have a history of abortion.
- Most women followed instructions on the use of EC.

Implications for clinical practice or policy

- Contraceptive counselling for women who have had a previous abortion should aim at motivating them to use contraceptives.
- Health care providers must ensure couples know how to use condoms correctly if they choose this form of contraception.
- The EC message "Come back as soon as possible if you need EC and not later than 72 hours" was well-received by end-users of our service.

Key words
Contraceptives, postcoital; Intrauterine devices; Levonorgestrel

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Introduction

Emergency contraception has been provided in Hong Kong since the 1960s. Five days of high-dose oestrogen was prescribed for emergency contraception until the Yuzpe

從香港家庭計劃指導會處理的個案中探討緊急避孕使用者的特徵

目的 探討使用緊急避孕的婦女的特徵和使用原因，以及她們是否正確使用緊急避孕的方法。

設計 醫療紀錄的回顧研究。

安排 香港家庭計劃指導會轄下的六間節育指導診所及三間青少年保健中心。

參與者 2006至2008年期間向以上機構尋求緊急避孕的女性。

主要結果測量 緊急避孕使用者的人口學數據、使用原因、緊急避孕前曾在沒有避孕的情況下發生性行為的次數、採取緊急避孕的方法、發生性行為至使用緊急避孕法之間的時間差距，以及結果。

結果 研究期間共向11 014位求助者提供緊急避孕，包括單一後安錠（levonorgestrel）緊急避孕丸10 845例、子宮環168例，同時使用以上兩種方法的有1例。使用緊急避孕的婦女平均年齡30歲；65.6%為未產婦，64.9%從未試過墮胎。要求提供緊急避孕的求助者主要是因為：在沒有避孕的情況下發生性行為（38.9%）、使用避孕套時發生意外（38.0%）以及一向沒有採用任何避孕措施（20.6%）。一向沒有採用任何避孕措施的婦女中，較多曾經墮胎。有97.9%的婦女在沒有避孕的情況下發生性行為的72小時內使用緊急避孕法；另98%為單一的性行為。使用子宮環的婦女中未有懷孕個案，服食緊急避孕丸但仍懷孕的有1.8%。

結論 本研究發現，婦女尋找緊急避孕法的原因為在沒有避孕的情況下發生性行為和使用避孕套時發生意外。醫療服務提供者應鼓勵曾經墮胎的婦女採取避孕措施，以及教導人們正確使用避孕套的方法。大多數婦女都按指示使用緊急避孕法，結果令人滿意。

regimen[1] and the intrauterine contraceptive device (IUCD)[2] became available in the late 1970s. In 1993, Hong Kong researchers published the first clinical report on the effectiveness of two doses of 0.75-mg levonorgestrel-only pill, taken 12 hours apart, for emergency contraception.[3] A subsequent study by the World Health Organization (WHO) showed that the two doses can be taken together without loss of efficacy or increase in the frequency of side-effects.[4] The levonorgestrel-only pill was registered in Hong Kong in July 2002 and has been used by the Family Planning Association of Hong Kong (FPAHK) since then. Whilst the WHO recommends levonorgestrel-only emergency contraceptive pills be used within 120 hours,[5] prescription beyond 72 hours is an off-label use.

The FPAHK is one of the major family planning service providers in Hong Kong. The Birth Control Service accepts married women of all ages and unmarried women aged 26 years and older. The Youth Health Care Service accepts unmarried women younger than 26 years old. Women are allowed to make an informed choice on emergency contraceptive pills or an IUCD if they present within 72 hours of unprotected intercourse. During the study period, they were allowed to take the pills in two separate doses as stated in the product insert or in one single dose as an off-label use. The current practice is to offer one single dose after the product insert update was approved by the Department of Health, Hong Kong. For those who present after 72 hours, the IUCD is recommended as the first choice. If women refuse to use the IUCD or a doctor fails to insert it, the levonorgestrel-only emergency contraceptive pill could still be given off-label.

In order to improve accessibility to emergency contraception, many countries allow doctors to prescribe the levonorgestrel-only emergency contraceptive pill in advance or allow women to buy it over-the-counter. In Hong Kong, this pill is registered as a Part 1 Schedule 3 Poison, hence it cannot be sold over-the-counter. Advanced provision is uncommon in Hong Kong.[6] Before we plan for any changes to the existing service delivery mode, first we need to know more about our users. Thus, the objectives of this review were to: (a) investigate the characteristics of emergency contraceptive users, (b) ascertain their reasons for requesting emergency contraceptives, and (c) determine whether they follow instructions on their use for emergency contraception.

Methods

The medical records of women who obtained emergency contraception from six Birth Control Clinics and three Youth Health Care Centres of the FPAHK from 1 January 2006 to 31 December 2008 were retrieved from the computerised database, using service codes and drug codes. The data captured from these computerised records included demographic characteristics such as: age, age at first intercourse, education level, relationship status, number of pregnancies, parity, number of abortions, and number of ectopic pregnancies. For each episode of emergency contraceptive use, the reason for requesting emergency contraception, the coitus-treatment interval, the number of times of unprotected intercourse before using emergency contraception, the type of emergency contraception prescribed, and the outcome were recorded. The study was approved by the Ethics Panel and the Health Services Subcommittee of the FPAHK.

Statistical analysis was performed using the Statistical Package for the Social Sciences (Windows version 11.5; SPSS Inc, Chicago [IL], US). Descriptive statistics were presented for demographic data. Student's *t* test was used to compare mean age and mean age of sexual debút in contraceptive

users and non-users, as well as in women who presented within 72 hours and beyond 72 hours of unprotected intercourse. The χ^2 test was used to examine the association between nominal demographic characteristics like parity (nulliparous vs multiparous), history of abortion (yes vs no), education attainment (tertiary vs secondary and less), and relationship status (more-stable vs less-stable relationship) with (a) the use of contraceptives and (b) their attendance within the preferred coitus-treatment interval of 72 hours. The χ^2 test was also used to test the categorical relationship between failure of emergency contraceptive pills and (a) having single versus multiple episodes of unprotected intercourse before emergency contraceptive pills were taken, and (b) treatment being initiated within or beyond 72 hours. Significant characteristics were further subjected to stepwise logistic regression. A difference was considered statistically significant if the P value was less than 0.05, and all tests were two-tailed.

TABLE 1. Demographic characteristics of subjects analysed (n=11 014)

Characteristic	No. (%) of subjects
Age (years)	
≤16	210 (1.9)
17-32	6876 (62.4)
33-48	3739 (33.9)
≥49	189 (1.7)
Age at first intercourse (years)	
≤16	1074 (9.8)
17-32	7681 (69.7)
33-48	128 (1.2)
No information	2131 (19.3)
Relationship status	
Married / to be married	4447 (40.4)
Divorced / separated / widowed	251 (2.3)
Co-habitation	88 (0.8)
Unmarried	6228 (56.5)
Parity	
0	7221 (65.6)
1	1722 (15.6)
2	1732 (15.7)
≥3	339 (3.1)
Previous No. of induced abortion	
0	7147 (64.9)
1	2373 (21.5)
2	1011 (9.2)
≥3	483 (4.4)
Education level	
Illiterate	227 (2.1)
Primary	289 (2.6)
Secondary	6638 (60.3)
Undergraduate and above	3727 (33.8)
No information	133 (1.2)

Results

During the 3-year period, 11 014 courses of emergency contraception were prescribed. The mean (standard deviation [SD]) age of the users was 30 (9) years. The mean (SD) age at first intercourse was 21 (4) years. The details of their demographic characteristics are listed in Table 1.

The reasons for requesting emergency contraception were: contraceptive omitted during the index intercourse (n=4287, 38.9%); condom accident (ruptured or slipped condom) [n=4180, 38.0%]; non-use of any regular contraceptives (n=2268, 20.6%); worry about possible failure of properly used contraception (n=205, 1.9%); and other contraceptive problems (n=74, 0.7%). The groups of "contraception omitted during the index intercourse" and "non-use of any regular contraceptives" were combined and termed contraceptive non-users for analysis, because both could be due to underlying risk-taking behaviour. Both contraceptive users and non-users had similar ages, with a mean (SD) age of 30 (9) years. Both groups also had sexual debút at the same age, with a mean (SD) of 21 (4) years. There were significantly more nulliparous women among non-users (66.5%) than the users (64.2%) [P=0.015]. A significantly higher proportion of women had a history of abortion among non-users (36.4%) than users (33.2%) [P=0.001]. In the whole group, 59.6% of women were in relatively less-stable relationships (unmarried, co-habitating, divorced, separated, or widowed). The proportion was significantly higher (P<0.001) among non-users (61.2%) than users (57.4%). Education attainment was similar in both subgroups (P=0.190). After all the significant characteristics were subjected to stepwise logistic regression, only history of abortion (P=0.002; odds ratio, 0.867; 95% confidence interval, 0.801-0.940) remained significantly different. In women who came within 72 hours and beyond 72 hours, the mean age (P=0.061), mean age at sexual debút (P=0.533), history of abortions (P=0.503), parity (P=0.618), relationship status (P=0.842), and education attainment (P=0.091) were similar.

Over the study period, we had prescribed 10 845 courses of levonorgestrel-only emergency contraceptive pills, inserted 168 IUCDs, and provided both emergency contraceptive pills and an IUCD on one occasion. Among all these episodes, 19% were within the first 12 hours of unprotected intercourse. The breakdown of emergency contraception

TABLE 2. Emergency contraceptives prescribed (breakdown by coitus-treatment interval)*

Coitus-treatment interval (hours)	No. of episodes	No. of episodes for which ECP was prescribed	No. of IUCD insertions	No. of episodes when both were used
≤24	5995	5975	20	0
>24 to ≤48	3331	3314	17	0
>48 to ≤72	1454	1440	14	0
>72 to ≤120	221	106	114	1
>120	13	10	3	0

* ECP denotes emergency contraceptive pill, and IUCD intrauterine contraceptive device

prescribed during different coitus-treatment intervals is shown in Table 2. Over half (55%) of the pill users took the pills within the first 24 hours. The median coitus-to-treatment interval in the whole group was 22 hours (interquartile range, 14-40 hours). In most instances (98%), women only had one episode of unprotected intercourse before using emergency contraception; 1.7% reported two and 0.3% reported three.

Among the 11 014 episodes of emergency contraception, treatment outcome was available for only 7461 episodes; 7307 entailed courses of pills, 153 IUCDs, and one instance of both. None of the 153 IUCD users who returned for follow-up reported failure. Only 128 (1.8%) of emergency contraceptive pill users got pregnant; 19 continued with the pregnancy, 103 had terminations, 3 had miscarriages, and 3 had ectopic pregnancies. None of the women with an ectopic pregnancy had a history of ectopic pregnancy. There were 116 episodes whereby emergency contraceptive pills were taken beyond 72 hours. Among these, 84 returned for follow-up, none of whom became pregnant. Among the 128 failures, only four had more than one episode of unprotected intercourse before taking the emergency contraceptive pills. There was no significant association between emergency contraceptive pill failure and whether single or multiple episodes of unprotected intercourse had ensued before taking the emergency contraceptive pills (P=0.396), and whether they were taken within or beyond 72 hours after the first episode of unprotected intercourse (P=0.222).

Discussion

In this study, it is worrying that 60% of the women used emergency contraception because they did not use prior contraception. This figure is much higher than the 15% recorded in a French national cohort study,[7] 20% reported among family planning service users in Sweden,[8] 28% in women requesting emergency contraception from a family planning clinic in Rome,[9] and 45% in women who attended two community family planning services in East London.[10] Women in less-stable relationships or who did not use the same contraceptive during the year were more likely to use emergency contraceptive pills.[11] First-time intercourse is also notorious for being unprotected.[12] Similar behaviour was also noted in couples initiating a new relationship or who reunited with an existing or ex-partner.[13] In a United States national survey, less-stable relationships, more infrequent intercourse, and recent non-voluntary intercourse for the first time were associated with high-risk contraceptive behaviour.[14] In the current study however, the predictors for non-use of contraceptives were different. In Hong Kong, counselling should focus on motivating women with previous abortions to use contraceptives. Other risk factors identified in the literature like more infrequent intercourse and recent non-voluntary intercourse for the first time were not studied in this retrospective analysis, as they were not asked about routinely in the history taking.

In other studies, condom breakage or slippage was the main reason for requesting emergency contraception.[8,9,15-17] In Hong Kong, the condom is the most popular contraceptive used by couples and young people.[18,19] Since condom accidents were also major reasons for requesting emergency contraception, health care providers must make an effort to ensure their clients know how to use condoms correctly.

Our subjects' understanding of the timing of emergency contraception was good; 97.9% came to our clinics within 72 hours, which was the same as that reported in family planning clinics in East London where 98% of women also attended within 72 hours.[10] However, the proportion that came within the first 12 hours (19%) was much higher in our cohort than in the East London study (4%). This is critical to success as research has shown that using emergency contraceptive pills within the first 12 hours provided maximum efficacy.[20] In our clinics, we teach women to come as soon as possible for emergency contraception and not later than 72 hours. This gives a clear message that early intervention is important, while reminding them of the 72-hour limit. The high proportion of women who came back as instructed

indicates that this message had a considerable impact. Our clinics open for long hours and offer walk-in services for emergency contraception. This important logistic support facilitates accessibility. We shall continue to promulgate this message to women who use our services, and through the media to the public.

In this retrospective study, the failure rate of emergency contraceptive pills was 1.8%, which is slightly higher than the 1.1% reported by the WHO randomised controlled trial.[20] Follow-up data were available in only 7461 (67%) of 11 014 of the subjects, therefore our failure rate should be interpreted cautiously. Although we had a large sample, the high default rate made further analysis of the failure rate less meaningful. Another limitation of this review was the self-reported nature of information, including contraceptive use, age at first intercourse, number of unprotected episodes of intercourse, and the time of unprotected intercourse.

Conclusions

This study demonstrates a high prevalence of sexual risk–taking among women who seek emergency contraception. Fortunately, most of them followed advice to come early to redress the problem, which led to satisfactory outcomes.

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