

Emergency hormonal contraception in Switzerland: A comparison of the user profile before and three years after deregulation

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ABSTRACT **Objectives** To evaluate the time lapse between sexual intercourse and request for emergency hormonal contraception (EHC) from pharmacies and to analyse the profiles of EHC users shortly after deregulation and three years later, assuming EHC became better-known and more easily accessed.

Methods Official EHC written assessment forms were collected from pharmacies in Switzerland.

Results Written assessment forms from 729 women aged 15–49 years (380 forms pertaining to the 2003 period and 349 for the 2006 period) were collected in 18 pharmacies. Due to the presence of more women aged less than 18, women in Group 2006 were significantly younger than those in Group 2003 ($p = 0.014$). Nearly one quarter (23.6%) of the women went to a pharmacy for EHC within 6 h of unprotected sexual intercourse. The median access time was 12 h in 2003 and 14 h in 2006 ($p < 0.05$). Variance analysis showed a relationship between time to access and the contraceptive methods used ($p < 0.001$) with male condom users going to a pharmacy the earliest after unprotected intercourse, followed by pill users and by women without any contraception. The number of women who did not use any contraception doubled from 2003 to 2006.

Conclusions Dispensing EHC through Swiss community pharmacies allows women to seek EHC easily and rapidly after unprotected sex. The observed changes in user profiles do not support the concern regarding enhanced sexually risky behaviour, more frequent use or misuse due to free access to EHC. The findings support a more liberal access to EHC.

KEY WORDS Emergency hormonal contraception; Community pharmacies; Pharmaceutical care; Unprotected intercourse; Postcoital contraception; Switzerland

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INTRODUCTION

Emergency hormonal contraception (EHC) prevents unwanted pregnancies after unprotected sexual intercourse¹. Since the 1980s in industrialised countries, women requesting the 'morning after pill' had to attend a general practitioner's or gynaecologist's office, a family planning clinic or the emergency department of a hospital. A progestogen only regimen (levonorgestrel [LNG], total dose 1.5 mg) was recognised in 1998 as a safe and effective method of preventing unintended pregnancies² if taken within 72 h after unprotected intercourse³. Under the pressure from groups advocating its facilitated access, EHC was deregulated in several European countries.

Since 4 November 2002, women in Switzerland have had access to emergency contraceptive pills (ECPs) without prescription in pharmacies. Norlevo[®], a progestogen-only pill (POP) containing 0.75 mg LNG, two of which are to be taken at a 12-h interval, with the first dose taken within 72 h of unprotected sexual intercourse, thus became available over the counter (OTC). The Swiss Regulatory Authorities (Swissmedic) enforced three restrictions: only a pharmacist is allowed to dispense the drug, a counselling interview has to be conducted in a discrete area away from other consumers before dispensation, and women must be aged 16 years and over. Younger women should be referred to a physician. Before deregulation, an unprecedented national education programme was mounted for pharmacists. The Swiss Association of Pharmacists (Schweizerischer Apothekerverband) released an official 1-page written patient assessment form and a descriptive workflow with the aim of standardising the counselling interview and helping the pharmacist in the decision making process of delivering EHC or not. The form is confidential but not anonymous.

Several studies, carried out in very different contexts in the United States⁴, Great Britain⁵, France⁶, China⁷ and India⁸ have demonstrated that facilitated use of EHC does not hinder the use or the initiation of regular contraception, and that neither risky sexual behaviour nor the incidence of sexually transmitted infections increased⁹⁻¹¹. Simultaneously, many worried about the increasing awareness of the easy availability of EHC leading to more frequent use and misuse¹². In this study, we wanted to evaluate EHC user profiles, their contraceptive methods, sexual behaviour and the time span between sexual

intercourse and request for EHC from pharmacies. We compared the data immediately and three years after EHC access without prescription had been authorised, assuming EHC became better-known and more easily accessed.

METHODS

Pharmacies in Basel, Bern and Zurich, three towns in the German speaking part of Switzerland, were recruited if they had extended opening hours (*emergency pharmacies*) or if they were located downtown and were open during business hours (*walk-in pharmacies*). All the pharmacies were open on Saturday. The pharmacists were asked if a pharmacy student could photocopy their completed official 1-page EHC written assessment forms. The clients' personal data (name and address) would not be recorded. Ethical approval was obtained from the local (cantonal) ethics committee. The copies of the forms were collected from November 2002 (introduction of Norlevo[®]) until June 2003 (Group 2003) and from July 2005 until November 2006 (Group 2006). The collection period in emergency pharmacies was limited to two months. The collection period in walk-in pharmacies was set at eight months in 2003 and was pursued in 2006 until the number of written assessment forms had reached that of 2003.

The official 1-page EHC written assessment form consists of 11 blocks of questions usually asked during a consultation and essential for making the decision to deliver EHC. These include date of birth, date of last menstrual period, date and time of unprotected intercourse, diseases and allergies, intake of other medications, contraceptive behaviour, and previous use of EHC. Most questions were categorical but some open-ended questions were used for more general items.

The last block summarised what the pharmacist did, i.e. perform a pregnancy test, deliver EHC or refer to a physician. For this study, we analysed the answers to five questions of interest. The questions 'Did you forget to take the pill?', 'Did you have any other unprotected sexual intercourse since your last period?' and 'Have you ever taken the "morning-after pill" before?' could be answered with either 'yes' or 'no'. If the last question was answered affirmatively, the woman was additionally asked 'When?'. For the question 'What do you usually use to protect yourself

from becoming pregnant?' the answer could be chosen from a list of possible options, and space was also provided to write a free-text response. We analysed further data such as age, hours elapsed since unprotected sexual intercourse, pharmacy status (walk-in or emergency), and the three interventions of the pharmacists (performance of a pregnancy test, delivery of EHC, and referral to a physician). We categorised patients into the following six age groups: <18 years, 18–21 years, 22–25 years, 26–29 years, 30–33 years, and ≥ 34 years.

The data were entered and analysed with the Statistical Package of the Social Sciences (SPSS version 15.0) for Windows. We first analysed the data for each group separately. We then combined the data from each year and added the year as a dummy variable to test for differences between years. The *p*-values reported in the text are results of ANOVA and regression analysis. To corroborate our results for deviance from the normal distribution, we repeated the analysis with nonparametric methods where possible, which yielded the same results. Where age groups were used, we performed alternate analyses with continuous variables or different groups to ascertain that the results were not an artefact of the grouping process. Where frequencies were compared, we used appropriate Chi-square tests. Differences were considered significant if $p < 0.05$. Values are reported as absolute numbers and percentages, or as means and medians \pm Standard Deviation.

RESULTS

Eighteen pharmacists were approached and all agreed to participate. They delivered 729 written assessment forms of women who sought EHC between November 2002 and June 2003 ($n = 380$) and between July 2005 and November 2006 ($n = 349$). Three assessment forms of Group 2003 were excluded because of missing year of birth and one assessment form of Group 2006 was excluded because the woman requesting EHC did not do so for herself but for her sister. Missing answers for the questions of interest accounted for 4.8% (67/1385) in Group 2003 and for 4.2% (54/1288) in Group 2006.

The walk-in pharmacies open during traditional business hours were consulted by 55 women seeking EHC in 2003 and by 55 women also in 2006 (14.6% and 15.8% respectively, not significant [NS]) while

322 women went to emergency pharmacies during the extended opening hours in 2003 (85.6%) and 293 women in 2006 (84.2%, NS). When the study population was stratified by age groups, the age distribution in walk-in pharmacies did not statistically differ from the age distribution in emergency pharmacies (data not shown).

Description of users

The mean ages \pm SD were 25.5 ± 6.9 years (range: 16–47 years, median 24 years) for Group 2003 and 24.2 ± 6.8 years (range: 15–49 years, median 22 years) for Group 2006 ($p < 0.005$), with significantly more women under 18 years of age (8.5% vs 15.5%, $\chi^2 = 10.66$, $p = 0.014$) in Group 2006. Seven women in Group 2003 and 13 women in Group 2006 were 16 years old, the age of sexual consent. One woman of Group 2006 was 15 but would have turned 16 the next month. More than half of the women were under 26 years of age (58.4% in 2003 and 66.1% in 2006, NS) with most in the age group 18–21 years (27.1% in 2003 and 27.6% in 2006, NS).

Regarding contraceptive methods, more than 65% of the women reported the use of male condoms and more than 20% the use of oral contraceptives (OCs) at the time of the sexual intercourse that led to the request for EHC (Table 1). The stratification of the study population by age groups showed no differences in the contraceptive methods between the groups (data not shown). The proportion of women with dual use of male condoms and oral contraception was marginal (2.0% in Group 2003 and 3.0% in Group 2006, NS). The number of women without any contraception almost doubled from 2003 to 2006, increasing from 3.7% to 7.2%, although not reaching statistical significance. A small proportion of women reported another episode of unprotected intercourse during the current cycle (6.9% in Group 2003 and 5.0% in Group 2006, NS). The proportion of women who had forgotten to take one pill during the current cycle was slightly but not significantly greater in 2006 (15.2%) than in 2003 (12.5%) (Table 1).

Re-use

Overall, re-use of EHC was reported by 43.5% of the women in Group 2003 and by 50.3% in Group 2006 (NS). When the study population was stratified by age

Table 1 Contraceptive methods used *n* (%), proportion of women with another episode of unprotected coitus or a missed pill intake during the current cycle (risky behaviour)

Contraceptive methods	2003 (<i>n</i> = 350)	2006 (<i>n</i> = 333)	<i>p</i> -value
Male condoms	232 (66.3)	220 (66.0)	NS
Oral contraceptives (OCs)	90 (25.7)	69 (20.7)	NS
OCs + condoms	7 (2.0)	10 (3.0)	NS
No contraception	13 (3.7)	24 (7.2)	NS
Intrauterine device (IUD)	7 (2.0)	–	–
Fertility-awareness methods* and spermicides	1 (0.3)	3 (0.9)	–
Injectable/implant	–	1 (0.3)	–
New methods†	–	6 (1.8)	–
<i>Risky behaviour</i>	<i>2003</i>	<i>2006</i>	
Had another episode of unprotected coitus during the current cycle	<i>n</i> = 361 25 (6.9)	<i>n</i> = 340 17 (5.0)	NS
Forgot to take a pill	<i>n</i> = 97 47 (48.5)	<i>n</i> = 79 53 (67.1)	NS

*Knaus-Ogino method (calendar method) and basal body temperature method.

†New contraceptive methods not available in 2003 including the vaginal ring and the transdermal contraceptive patch. NS, not significant.

groups, re-use was significantly more frequent in women aged 18–21 years of Group 2006 than of Group 2003 (21.3% vs 33.1%, $\chi^2 = 13.11$, $p < 0.001$, data not shown). A statistically significant correlation between span of time until re-use and age was observed ($r = 0.345$, $p < 0.01$). Women older than 25 years reported a longer span of time in 2006 than in 2003.

Time to access EHC

All except three women went to a pharmacy within the official 72-h time frame for issuing EHC (one woman sought EHC 90 h after sexual intercourse in Group 2003 and two women after 73 h and 96 h, respectively, in Group 2006). Most women (86.3% in Group 2003 and 80.8% in Group 2006, NS) obtained EHC within 24 h of unprotected intercourse. Almost one in four women (23.6% in both groups) entered a pharmacy within 6 h (Figure 1). There were no differences between the groups in the percentage of women reaching a pharmacy within the selected time intervals, however, median access time was significantly longer in 2006, with 12 h in Group 2003 (range: 1 h to 90 h) and 14 h in Group 2006 (range: 20 min to 96 h; $p < 0.05$). When the population was stratified by age groups or by the pharmacy chosen (walk-in pharmacy or emergency pharmacy) no statistically significant differences appeared in the

repartition of the women according to their age or to the type of the pharmacy for both groups (data not shown). Variance analysis showed a relationship between time to access and the methods of contraception ($p < 0.001$), with male condom users going to a pharmacy the soonest after unprotected intercourse, followed by pill users and by women without any contraceptive methods. Time to access EHC was on average 13.8 h in Group 2003 and 14.6 h in Group 2006 for male condom users, 14.9 h and 19.9 h for pill users, and 25.4 h and 21.0 h for women without any contraception (data not shown).

Activities of the pharmacists

Most consultations were straightforward. Twenty-three women (6.1%) in Group 2003 and 11 women (3.2%, NS) in Group 2006 were not supplied with EHC, mostly because the pharmacist estimated the risk of pregnancy to be inexistent. Indeed, 16/23 (69.6%) of the women in Group 2003 and 7/11 (63.6%) of those in Group 2006 used a combined OC and had omitted to take one pill in the second or third week of the pack, i.e. when ovarian suppression is achieved. The pharmacists correctly delivered EHC to women using OCs who did not miss a pill but who could have been affected by a reduced efficacy of the contraceptive due to, for instance, diarrhoea or

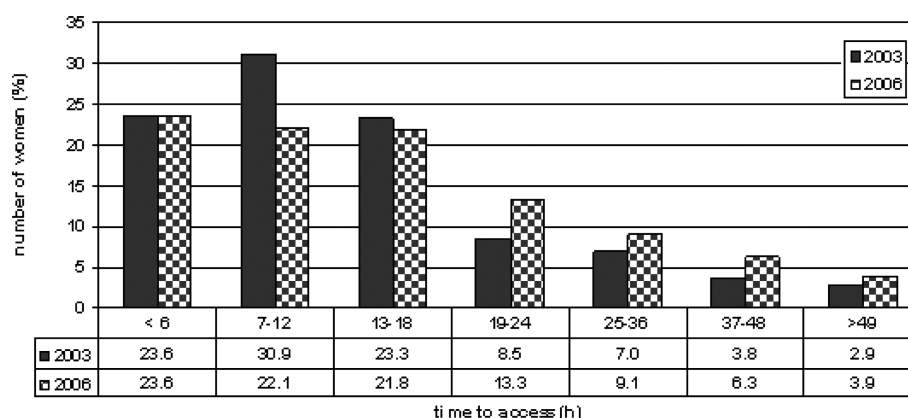


Figure 1 Percentage of women seeking EHC after unprotected coitus in 2003 and 2006 according to time lapse before going to a community pharmacy.

vomiting. The pharmacists referred 62 women in Group 2003 and 23 women in Group 2006 to a clinic or to a gynaecologist ($\chi^2 = 7.68$, $p = 0.003$). They performed pregnancy tests to exclude a pre-existing gestation for 14 women in Group 2003 and for five women in Group 2006 (NS).

DISCUSSION

This study evaluated user profiles and sexual behaviour of women requesting EHC in community pharmacies shortly after over-the-counter availability was introduced and three years later. We found no major changes in user profiles. Almost 50% of the women entered a pharmacy within 12 h of unprotected intercourse and more than 80% within 24 h.

In this study, 18–21 years old women formed the most important age group among women seeking EHC, which is consistent with the results of studies conducted in other European countries during the same period of time^{13–15}. Age categories vary widely in the literature. Most studies report five-year intervals from the age of 20 years onwards; younger women end up in a first category which can cover two years¹⁶, four years¹⁰ or even six years¹⁷. Others placed the women in varying categories¹⁸, disregarding consistency of age subdivisions. Since 18 is the age of legal majority, we decided that the first category would consist of women aged less than 18 years. We chose a four-year interval to minimise the difference between the first age category and the other ones.

A shift appeared over time with women being significantly younger in Group 2006 due to the presence of more women aged 17. This may be due to the fact that the age at coitarche (when adolescents engage in sexual intercourse) has been steadily decreasing^{19–21}. Furthermore, in almost all regions of Switzerland, sex education classes including information on prevention and services are given once or twice during compulsory school years. The concern that prescription-free access to EHC would modify contraceptive behaviours and cause women to change from daily pill intake to rescue emergency contraception and thus switch to risky sexual behaviour²² was not substantiated in our study. Indeed, we observed no significant differences between the two groups regarding the reported method of contraception, the proportion of women not practising any contraception, the number of women admitting a later episode of unprotected intercourse during the current cycle or to have forgotten to take one pill.

Access time to EHC from pharmacies was approximately of the same magnitude as the median 16 h observed by Lewington in community pharmacies²³. The fact that in our study, women of Group 2006 needed 2 h more to get to a pharmacy could not be explained by their younger age, in contrast to Lewington and Marshall, who observed that adolescents had a longer access time to EHC²³. We attribute the prolonged access time to the contraceptive method used. Women using male

condoms as their contraceptive method are immediately aware of the risk after non-use or rupture of the condom, while women using OCs may realise that they forgot to take a pill only later. Women applying no contraceptive measures took the longest time to seek emergency contraception. This is surprising, since those women should be aware of the potential danger of unprotected coitus. Our data did not enable us to identify the causes of the longer time interval characterising this group in its seeking EHC.

Almost half of the women in our study reported re-use of EHC, which is consistent with other self-reported rates of re-use^{15,24,25}. The fact that significantly more women 18–21 years old reported re-use three years after OTC availability of EHC in Switzerland does not support the ‘overuse’ that some policy makers and authors claimed would result from that easier access²⁶. Indeed, no differences in the contraceptive methods or in the sexual behaviour were noted to have occurred between 2003 and 2006. National abortion statistics show a slight decrease from 7/1000 women aged 15–44 years in 2005 to 6.8/1000 in 2007²⁷ (no analogous national statistics were reported before 2005 since they partly relied on estimations).

Studies showed that availability of EHC at pharmacies enables up to 70% of the women to receive it within 24 h of unprotected coitus²⁸. In our study, more than 80% of the women received EHC within 24 h following intercourse. Furthermore, half of the women reached a pharmacy within 12 h, which is in concordance with other studies²⁹. We noted that 23.6% of the women reached a pharmacy even within 6 h. Our results do not support the hypothesis that women would prefer pharmacies with extended opening hours in order to accelerate their access to EHC. We conclude that the distribution of walk-in and emergency pharmacies in the three selected cities was convenient for women needing EHC and that they were able to find an open pharmacy when they needed one.

In our study, the pharmacists evaluated the women’s situation properly and gained in assurance over the years by referring significantly less women to physicians. The growing self assurance of the pharmacists is consistent with the results of Bacon *et al.*³⁰. Our study showed that the strategies established in Switzerland as in many countries^{22,28,31} to educate

the pharmacists enabled them to counsel women adequately about EHC, providing them with a major public health role.

Our study has strengths and limitations. The written assessment forms were exhaustively completed by the pharmacists and the rate of missing data was low.

The retrospective design assured that none of the involved pharmacists could have known that the written assessment forms would be used in a study that investigates daily practice and diligent assessment. Notwithstanding these strengths, all results of the study were obtained by participant recall or by self-report, and no outcome data or follow-up information was collected. Community pharmacies evolve with urban planning systems and regulations, and must comply with the laws of commerce. Hence, the pharmacies involved in the provision of EHC to Group 2003 and Group 2006 were inevitably different but their characteristics were comparable with respect to opening hours and localisation. Although the study population originated from purposively selected pharmacies, the number of written assessments analysed was sufficient in most cases to draw conclusions and to generalise our findings without substantial impairment.

CONCLUSIONS

In conclusion, dispensing EHC through Swiss community pharmacies is properly implemented and allows easy and fast access after unprotected sexual intercourse. No major changes in user profiles were observed between 2003 and 2006 reflecting a continuously rational use of EHC. Our findings support a more liberal access to EHC.

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