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Prevalence and Correlates of Emergency Contraceptive Use in Transitional Albania

Prävalenz und Korrelate des Gebrauchs von Notfallkontrazeptiva in Albanien

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Key words

Albania, drug utilization, emergency contraceptive, health policy, levonorgestrel, socioeconomic background

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ABSTRACT

Objectives The two emergency contraceptive drugs (“morning-after pill”) ulipristal acetate and levonorgestrel are available without prescription in many European countries. In Albania, ulipristal acetate is not marketed yet and levonorgestrel has still prescription-only status. The objective of this study was to assess the prevalence and socioeconomic correlates of emergency contraceptive (EMC) use, collect sales figures, and gain

information on the women’s way of purchasing EMCs in post-communist Albania.

Methods For this cross-sectional study, self-administered questionnaires were made accessible to women in Albania in March 2015 by hard copy or online via social networks. Women were asked about lifetime use and last year’s use of EMCs, and if they purchased EMCs with or without a prescription. Additionally, pharmacies were contacted and asked about EMC sales figures. **Results** Of the 205 participating women, 80.5% knew about the availability and use of EMCs, and 15.1% reported EMC use during the previous 12 months. The lifetime prevalence of use was 46.8%. Although having prescription-only status in Albania, 96% of the women bought EMCs without a physician’s prescription. Knowledge was significantly lower among the lower educated women and among women residing in small cities. Use of EMCs was significantly higher in women with a weaker financial background and, compared with small cities, in those from large or mid-sized cities. The 54 participating pharmacies (3% of all Albanian pharmacies) reported selling 11 EMCs on average per month. The use of EMCs may be estimated at 0.22 defined daily doses per 1,000 inhabitants per day. Compared to January 2015, EMC sales increased by 17% in February 2016.

Conclusions Compared to other European countries, the prevalence of EMC use seems to be higher in Albania. Use and knowledge of EMCs depend on socioeconomic characteristics. It is recommended to switch EMCs to non-prescription status in transitional Albania.

ZUSAMMENFASSUNG

Ziel der Studie Die 2 Notfallkontrazeptiva („Pille danach“) Ulipristalacetat und Levonorgestrel sind in vielen europäischen Ländern ohne Verschreibung erhältlich. Während in Albanien Ulipristalacetat nicht verfügbar ist, untersteht Levonorgestrel immer noch der Verschreibungspflicht. Ziel dieser Studie war, die Prävalenz sowie die sozioökonomischen Korrelate des Gebrauchs von Notfallkontrazeptiva zu erfassen, Verkaufszahlen zu erheben sowie Informationen über die Art des Zugangs der Frauen zu Notfallkontrazeptiva im post-kommunistischen Albanien zu ermitteln.

Methodik Für diese Querschnittstudie wurden im März 2015 selbst auszufüllende Fragebögen an Frauen in Albanien verteilt oder über Internet mittels sozialer Netzwerke zugänglich gemacht. Die Frauen wurden gefragt, ob sie jemals oder während der letzten 12 Monate Notfallkontrazeptiva verwendet hatten, und ob sie das Notfallkontrazeptivum mit oder ohne Rezept erworben hatten. Zusätzlich wurden auch Apotheken kontaktiert und gebeten, ihre Verkaufszahlen zu Notfallkontrazeptiva zu übermitteln.

Ergebnisse Von den 205 Teilnehmerinnen waren 80,5% über die Möglichkeit der Notfallkontrazeption informiert. 15,1% hatten ein Notfallkontrazeptivum innerhalb der letzten 12 Monate verwendet. Die Lebenszeitprävalenz lag bei 46,8%. Obwohl Notfallkontrazeptiva in Albanien verschreibungspflichtig sind, erwarben 96% der Frauen diese Mittel ohne ärztliche Verordnung. Frauen mit geringerer Bildung und Frauen aus Kleinstädten waren signifikant weniger über die Möglichkeit der Notfallkon-

trazeption informiert. Der Gebrauch von Notfallkontrazeptiva war bei Frauen mit schwächerem finanziellen Hintergrund signifikant erhöht, ebenso wie bei Frauen aus mittelgroßen Städten und Großstädten (im Vergleich zu Kleinstädten). Die 54 teilnehmenden Apotheken (3% aller albanischen Apotheken) gaben an, durchschnittlich 11 Notfallkontrazeptiva pro Monat verkauft zu haben. Der Gebrauch von Notfallkontrazeptiva kann grob mit 0,22 definierten Tagesdosen pro 1000 Einwohner und Tag geschätzt werden. Verglichen mit Januar 2015 wurden im Februar 2016 17% mehr Notfallkontrazeptiva verkauft.

Schlussfolgerung Im Vergleich zu anderen europäischen Ländern scheint der Gebrauch von Notfallkontrazeptiva in Albanien höher zu sein. Sowohl Gebrauch von als auch Wissen über Notfallkontrazeptiva hängen von sozioökonomischen Faktoren ab. Die Entlassung dieser Arzneimittel aus der Verschreibungspflicht ist in Albanien empfehlenswert.

Introduction

The issue of unwanted pregnancies is a relevant public health topic, as about 41% of all pregnancies worldwide and 44% of pregnancies in Europe have been reported by women to be unintended [1]. Especially among young adolescent women aged 15–19 years, the majority of pregnancies may be unintended [1], which might lead to higher abortion rates in this age group. The topics of unwanted (teen) pregnancies or the use of (emergency) contraceptives are also linked to socioeconomic factors [2–8]. Unplanned pregnancies are more likely among financially weaker women [2], younger women [2, 5], or lower educated women [4, 5]. In Finland, a lower use of emergency contraceptive (EMC) drugs was related to living in rural areas and to higher paternal education background [9]. A French study found a higher EMC use among higher educated women and those living in large cities [10].

An EMC can prevent from unintended pregnancy if taken quickly after unprotected sexual intercourse. Two active pharmaceutical ingredients are available in Europe for this purpose, levonorgestrel (LNG) with a single dose of 1.5 mg and ulipristal acetate (UPA). To speed up access to EMCs, the European Medicines Agency recommended switching UPA to non-prescription status in November 2014 [11]. As of February 2017, LNG and/or UPA are freely available in many European countries [12, 13].

Before 1990, contraceptives were generally banned in Albania. After the breakdown of the communist regime, Albania experienced a major political, social, and economic turmoil. In the past two decades, tremendous changes in lifestyle have taken place, which include also the attitudes towards and the use of pharmaceutical products. Two LNG-containing EMCs are currently available in Albania, Norlevo® (registered in January 2005) and Postinor-2® (registered in March 2012). Both LNG-based EMCs have still prescription-only status. UPA has been registered in May 2016 as a freely available EMC, but it is not marketed in Albania yet.

Data on EMC use in Albania is rather scarce. In this context, this study had two objectives:

- i) to assess the knowledge about EMCs and the prevalence and the socioeconomic correlates of EMC use in Albania.
- ii) to provide figures for EMC sales and information on the women's way of purchasing EMCs.

Material and methods

Study population and data collection

This cross-sectional study was conducted in Albania over a period of 3 weeks in March 2015. To assess the prevalence of EMC use (within the last year; and lifetime use) and the women's socioeconomic background (age, place of residence, education, financial status), structured self-administered questionnaires were handed out to female students at 2 universities. Further questions such as knowledge about the possibility of emergency contraception with pharmaceuticals, way of purchase (with or without prescription, bought abroad) or if the women had encountered any problems when asking for an EMC prescription were also included in the questionnaire.

Additionally, pharmacies were also invited to provide data using another questionnaire. They were asked to report prices for EMCs and monthly sales figures for the 2 registered EMC brands (Norlevo®, Postinor-2®) in Albania for the period January 2015 until February 2016, whether they would consider it to be common practice to sell EMCs without prescription, and if they had cases where women could not afford to buy an EMC.

In addition to the paper-based questionnaires, identical online versions were designed for the women and the pharmacies using google forms (<https://www.google.al/forms/about/>). The link was shared in social networks or sent by email to randomly chosen women and pharmacies. All data were collected anonymously or anonymized, if necessary.

Statistical analysis

For the statistical analysis, the SAS software package (SAS Institute Inc., Cary, NC, USA, version 9.3) was used. Bivariate associations

were tested with Pearson Chi² test or, in case of too small cell values of the contingency tables, with Fisher's exact test. Odds ratios (ORs) and their 95% confidence intervals (CI) were obtained from a multivariate logistic regression model (significance level: $p \leq 0.05$).

The participants were grouped into 3 age classes (16–24 years, 25–34 years, ≥ 35 years). The following education levels were defined according to the participants' years they attended school:

Level 1: 10–12 school years (high school education)

Level 2: 13–15 school years (bachelor education)

Level 3: 16–17 school years (master education)

Level 4: ≥ 18 school years (postgraduate studies)

The financial background was defined on the basis of self-perceived ability to meet the daily needs (cannot or can only meet the vital daily needs; can easily meet the daily needs).

The participants' place of residence was classified in 3 categories (Tirana, mid-sized cities with inhabitants between 50,000–170,000 inhabitants, small cities with 20,000 inhabitants or less).

The study was approved by the Scientific Committee of the National Institute of Public Health in Albania. All participants gave their informed consent after being explained the aim and procedures of the study.

Results

Sample structure and prevalence of knowledge about and use of emergency contraceptives

Overall, 205 women aged 16–60 years from various Albanian regions participated in the survey (89 out of 89 distributed hard copy questionnaires were returned; 116 women submitted the completed questionnaire via Internet). Most of the participants attended school between 16–17 years ($n = 135$). 10% of the women did some postgraduate studies (≥ 18 school years), while 4% went to school for 10–12 years only. Exactly 97 women said they would not be able to meet their daily needs ($n = 3$) or could only meet their vital daily needs ($n = 94$), whereas 108 women reported that they would easily be able to meet their daily needs. The majority of the women ($n = 151$) resided in Tirana, Albania's largest city (with about 500,000 inhabitants). A further 22 women lived in mid-sized cities (Durrës, Elbasan, Fier, Korça, Vlora). The remaining 12 participants came from 6 smaller or rather rural cities (Kashar, Kruje, Lezha, Perrenjas, Pogradec, Sarandë,) with a population between 6,000–20,000 inhabitants (missing values $n = 20$). The exact sample structure is displayed in ► **Table 1**.

Overall, 80.5% (95% CI: 74.8–86.2%) of the women knew about the possibility of avoiding unintended pregnancy by using an EMC. Exactly 15.1% (95% CI: 10.0–20.3%) of the women reported having used EMCs at least once within the previous 12 months, and 46.8% (95% CI: 39.8–53.9%) took an EMC at least once in their lifetime. However, knowledge about and use of EMCs were not homogeneous across the socioeconomic strata.

Knowledge was highest among those aged 25–34 years. Also, a significant difference was visible between the highest (85%) and lowest (62.5%) education level. Women from Tirana (83.4%) were much better informed on the issue of EMCs compared with women living in mid-sized (68.2%) or smaller cities (58.3%).

The figures for the 1-year prevalence of use (18.6%) and for lifetime use (53.6%) were higher among women with problems to meet their daily needs, compared with women who perceived their financial situation as unproblematic (1-year prevalence = 12.0%; lifetime use = 40.7%). Compared with urban areas, only few women living in small cities with 20,000 inhabitants or less used EMCs (no woman reported use within the last year, 8.3% reported lifetime use).

Of the 96 women who used EMCs, exactly 92 (95.8%) said they bought it without a physician's prescription, although LNG-containing EMCs have still a prescription-only status in Albania. Some 13 women bought EMCs also or exclusively outside Albania (7 in Italy, 2 in Germany, 1 respectively in Macedonia, Greece, America, and Norway). With regard to affordability, 8 participants stated that they had hesitated to buy an EMC because of the high price, but all 8 reported having nevertheless finally bought the EMC.

A total of 5 women experienced some kind of problem with the physician in relation to the prescription of an EMC. For instance, two complained not being informed about side effects sufficiently or correctly, one got necessary information from the pharmacist instead of the physician, and one woman mentioned the physician was not available when she needed him.

Correlates of emergency contraceptive use

A logistic regression model (► **Table 2**) with 4 independent variables (simultaneously-adjusted model without interaction terms) revealed that a strong "predictor" of lifetime use of EMCs was a weaker financial background. Women who had difficulties in meeting their daily needs used almost twice as much EMCs (significant at $p = 0.0382$) compared with women from a stable financial background (OR = 0.53; 95% CI: 0.29–0.97). Also, the place of residence showed an association with EMC use, as, compared with Tirana, women living in mid-sized cities (OR = 0.65; 95% CI: 0.24–1.74) and especially those living in small cities (OR = 0.11; 95% CI: 0.01–0.91; significant at $p = 0.0409$) used much fewer EMCs.

No logistic regression model for the 1-year prevalence of use and the knowledge about EMCs is presented at this place, as for both outcomes, the likelihood ratios of the SAS model fit statistics did not satisfy the criterion of $p \leq 0.05$.

Sales figures

54 Albanian pharmacies from 8 cities (Berat, Elbasan, Fier, Gjirokaster, Korça, Kukës, Pogradec, Tirana) reported sales figures for the 2 currently available LNG-containing EMC brands (Norlevo[®], Postinor-2[®]) in Albania for the period between January 2015 and February 2016 (one pharmacy submitted the data via Internet). Compared with January 2015, the number of sold packages slightly increased by 15% for Postinor-2[®] and 18% for Norlevo[®], respectively (► **Fig. 1**). In total, the 54 participating pharmacies sold 8,404 EMCs within 14 months (► **Fig. 1**). The price for Norlevo[®] ranged between 582 and 660 lek (€4.31–4.89). The price range for Postinor-2[®] was 530–649 lek, which corresponds to €3.93–4.81 (exchange rate as of February 2017: 1 euro = 135 lek; for comparison: mean monthly gross income for employees at state authorities = 22,000 lek, about €163[14]).

16 out of 54 pharmacies stated having had cases, where potential customers finally did not buy the EMC because it was not afford-

► **Table 1** Sample structure and prevalence of knowledge about and use of emergency contraceptives.

	n	(%)	Prevalence rates in %					
			Knowledge about EMCs		Use within the last year		Use during lifetime	
Total cohort	205	(100)	80.5		15.1		46.8	
<i>Age class</i>								
16–24 years	102	(49.8)	75.5		11.8		38.2	
25–34 years	83	(40.5)	89.2	0.0303 ^a	16.9	0.2707 ^a	56.6	0.0427 ^a
35 years or older	20	(9.8)	70.0		25.0		50.0	
<i>Education</i>								
10–12 school years	8	(3.9)	62.5		12.5		50.0	
13–15 school years	42	(20.5)	66.7	0.0275 ^b	14.3	0.9627 ^b	23.8	0.0037 ^b
16–17 school years	135	(65.9)	85.2		16.3		54.8	
18 school years or more	20	(9.8)	85.0		10.0		40.0	
<i>Financial situation</i>								
Cannot or can only meet vital daily needs	97	(47.3)	78.4	0.4643 ^a	18.6	0.1933 ^a	53.6	0.0653 ^a
Can easily meet daily needs	108	(52.7)	82.4		12.0		40.7	
<i>Place of residence</i>								
Tirana	151	(73.7)	83.4		16.6		49.0	
Mid-sized cities	22	(10.7)	68.2	0.0360 ^b	13.6	0.4001 ^b	40.9	0.0221 ^a
Small cities	12	(5.9)	58.3		0.0		8.3	

EMC, emergency contraceptive; ^a p-value derived from Pearson Chi² test; ^b p-value derived from Fisher's exact test; Due to missing values, the strata may not add up to the total number of participants

► **Table 2** Correlates of lifetime use of emergency contraceptives.

	n	(%)	Lifetime use of EMCs	(95% CI)
<i>Age class</i>				
16–24 years	102	(49.8)	Reference	
25–34 years	83	(40.5)	1.79	(0.88–3.63)
35 years or older	20	(9.8)	1.35	(0.46–3.97)
<i>Education</i>				
10–12 school years	8	(3.9)	Reference	
13–15 school years	42	(20.5)	0.42	(0.08–2.32)
16–17 school years	135	(65.9)	1.20	(0.25–5.68)
18 school years or more	20	(9.8)	0.48	(0.08–2.87)
<i>Financial situation</i>				
Cannot or can only meet vital daily needs	97	(47.3)	Reference	
Can easily meet daily needs	108	(52.7)	0.53 *	(0.29–0.97)
<i>Place of residence</i>				
Tirana	151	(73.7)	Reference	
Mid-sized cities	22	(10.7)	0.65	(0.24–1.74)
Small cities	12	(5.9)	0.11 *	(0.01–0.91)

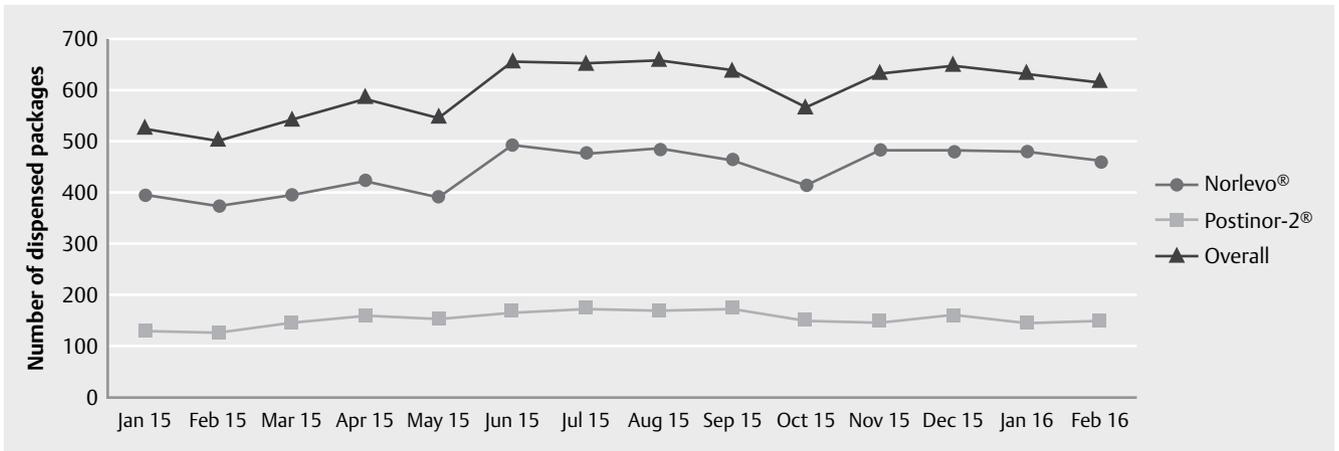
CI, confidence interval; EMC, emergency contraceptive; * significant at p ≤ 0.05; Due to missing values, the strata may not add up to the total number of participants

able. In sum, these 16 pharmacies estimated the number of respective cases at about 35 for a period of one month. Exactly 48 (88.9%) pharmacies reported they thought it might be quite a common practice to sell EMCs also without a physician's prescription.

Discussion

The results of this study imply that the use of EMCs might be higher in post-communist Albania compared with other European countries. A 2004 study from France [10] found a lifetime prevalence of 31.7% (compared to 46.8% in Albania). In the United Kingdom [15], 7.3% of the women aged 16–49 years (data published in 2005) used EMCs at least once during the last year (compared with 15.1% in Albania). In a Finnish study conducted in 1996, 15.1% of 17-year-old girls reported to have used EMCs at least once during lifetime [16], which may be somewhat higher today, since in Finland, EMCs were switched to non-prescription status in 2002.

The sales figures presented in this study provided by 54 Albanian pharmacies (about 3% of the 1,800 pharmacies currently operating in Albania) may be extrapolated to a total yearly consumption of about 240,000 defined daily doses (DDDs) in Albania, corresponding to 0.22 DDDs per 1,000 inhabitants per day. This would be much higher than, for instance, in Denmark, where the consumption is on an almost stable level at 0.049 DDDs per 1,000 inhabitants per day since 2008. A lower consumption has also been reported for Estonia (stable for the period 2010–2014 at 0.06–0.07 DDDs per 1,000 inhabitants per day) and Montenegro (stable for the period 2012–2014 at 0.04 DDDs per 1,000 inhabitants per day). In Switzerland, the consumption of EMCs increased strongly after the switch to non-prescription status in 2002 to about 0.031 DDDs per 1,000 inhabitants per day in 2008, which is nevertheless still lower compared with Albania. In Germany, where EMCs are freely available since 2015, the consumption of EMCs seems to have reached a stable level of currently about 0.025 DDDs per 1,000 in-



► **Fig. 1** Number of emergency contraceptives dispensed (n = 54 pharmacies) per month.

habitants per day [13, 17]. However, the estimation for Albania is rough and needs to be investigated on a larger data basis.

The use of EMCs is known to be predicted by socioeconomic factors. An Australian study [18] as well as an American one [19] showed that being not married increases the probability to use an EMC. A higher education was also linked to a higher use of EMCs in America [19]. In this Albanian study, EMC use was not associated with educational background. However, a higher use of EMCs among Albanian women correlated significantly with weaker financial background and living in an urban environment. The impact of financial background could possibly be explained by the fact that poor women may be able less to afford having children. A further explanation could be that poor women do not take normal contraceptive pills because of the price (which cost around 6–10 euros per cycle), but prefer to take a (cheaper) single dose of an EMC pill in case of need. According to the European consortium for emergency contraception, only 11.7% of Albanian women use modern contraceptive methods, compared with e. g., 67–76% in Austria, Hungary, Denmark, France, or Germany [12]. Also, the perception of having fewer side effects by using a single-dose EMC instead of regularly using normal hormonal contraception could explain the high Albanian prevalence rates of EMC use. In this context it should be mentioned, that EMCs should, however, not be used as an ongoing method of contraception.

EMCs are not reimbursed in Albania and have therefore to be paid out of pocket. The hypothesis, that financial background could play a role is also strengthened by the fact that 4% of the surveyed women said they had hesitated to buy an EMC. Additionally, 30% of the participating pharmacies reported to recall a total of about 35 cases within a period of one month, where women could not afford to buy the EMC needed because of the high price.

With concern to the knowledge about EMCs, there seems to be a need to improve health literacy especially in rural Albania. This could be done, e. g. with TV commercials or by sending small groups of health professionals by state authorities, who could organize respective meetings with women living in rural areas.

This study has strengths and limitations. To our knowledge, this is the very first study presenting figures on the relevant topic of EMC use in Albania. Furthermore, it provides an updated view on

EMC sales figures over a period of 14 months provided by a relatively large number of pharmacies. However, one important limitation is the comparatively small number of participating women in this study. Also, the composition of the study cohort is not exactly representative for Albania, as e. g. the lower-educated strata and those living in more rural areas are underrepresented in this study. Moreover, the study included mainly students from urban areas, who may have a more stable financial background, compared with women residing in a rural environment. Furthermore, with respect to e. g. educational background or place of residence, the strata differ in size considerably, which may have reduced the significance of the results. In sum, the representativeness of the sample is limited and therefore, the findings should be interpreted with some reticence. For the future, more data from e. g. population based studies would be helpful.

Conclusions

It may finally be concluded that EMC-related health literacy needs to be improved in Albania, especially in rural areas. Furthermore, EMCs should be switched to free availability. By doing this, dispensing over the counter in pharmacies (which evidently is common practice in Albania) would be put on a legal basis and potential drug tourism (although unlikely) would be minimized.

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Conflict of Interest

The authors declare that they have no competing interests.

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