

Self-medication in nursing mothers and its influence on the duration of breastfeeding

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Abstract

Objective: To investigate the practice of self-medication by nursing mothers, the main drugs used and the influence on the duration of breastfeeding.

Methods: A longitudinal cohort study involving 246 women seen at the maternity unit of Hospital Manoel Gonçalves in Itaúna, state of Minas Gerais, Brazil. A monthly follow-up of mothers and newborns was performed for the first 12 months postpartum or until weaning. The effect of the practice of self-medication on the duration of breastfeeding was evaluated by multivariate analysis using Cox's regression model with time-dependent variables.

Results: Self-medication was practiced by 52.4% of the nursing mothers. The most used pharmacological classes were: analgesics/antipyretics (54.5%), non-steroidal anti-inflammatories (15%), spasmolytics (6.2%), laxatives (3.5%), benzodiazepines (3%), nasal decongestants (1.4%), and antibiotics (0.9%). The most used drugs were dipyrone (31.5%) and paracetamol (17.9%). The practice of self-medication was associated with a higher probability of the use of drugs posing the risk of adverse effects for the infant or for lactation ($p = 0.000$). However, the practice of self-medication was not associated with weaning ($p = 0.135$).

Conclusions: The high rates of self-medication among nursing mothers and the use of drugs posing risks of undesirable effects for the infant and for lactation reveal the need for better education on the risks of self-medication by nursing mothers. However, self-medication was not proven to be a risk factor for weaning.

J Pediatr (Rio J). 2009;85(2):129-134: Breastfeeding, lactation, weaning, self-medication, pharmaceutical preparations.

Introduction

The practice of breastfeeding has increased significantly in several regions of the world in the last few decades, bringing countless benefits both to children and their mothers.¹ However, the improvement of breastfeeding rates² has been followed by an increase in the use of drugs.³ This fact needs to receive careful attention due to the possible risks these drugs pose for nursing mothers and infants.

Self-medication, defined as the consumption of medicinal products with the purpose of treating diseases or symptoms, or even promoting health, without a prescription provided by a medical professional, is found in all populations studied

regarding this practice.^{4,5} The World Health Organization (WHO) states that self-medication has an important place in the health care system.⁶ Nevertheless, several studies have demonstrated that self-medication is a reason of great concern, especially in Brazil.⁴⁻¹⁰ Arrais et al.⁷ found the highest frequency of self-medication among Brazilian women between 16 and 45 years old, an age group with potential to breast-feed. However, the use of drugs by women during lactation was not investigated.

The scarcity of information and the complexity of several factors that determine the choice of the drug to be used during lactation reinforce the concern about self-medication during this period and are good reasons for a study that seeks to

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No conflicts of interest declared concerning the publication of this article.

Suggested citation: Chaves RG, Lamounier JA, César CC. Self-medication in nursing mothers and its influence on the duration of breastfeeding. *J Pediatr (Rio J)*. 2009;85(2):129-134.

Manuscript received Jan 22 2008, accepted for publication Jan 08 2009.

doi:10.2223/JPED.1874

define the profile of this practice by nursing mothers. We could not find any articles on this topic in the review of the literature. Therefore, the present study investigated the frequency of self-medication by mothers, the drugs used taking into consideration their safety during breastfeeding and the association between self-medication and duration of breastfeeding in Itaúna, state of Minas Gerais, Brazil.

Methods

We conducted a longitudinal cohort study involving women seen at the maternity unit of Hospital Manoel Gonçalves de Sousa Moreira, the only hospital in the city of Itaúna, state of Minas Gerais. Most patients seen at this hospital belong to low social classes. The sample was selected between June 1 and September 4, 2003, and it included mothers who lived in Itaúna. Mothers and newborns were followed during the first 12 months postpartum or until weaning. Thus, we could collect data on the use of drugs prescribed by doctors or self-medication. We also investigated the duration of breastfeeding.

Data collection was carried out by the researcher with the help of university students from the School of Physical Therapy of Universidade de Itaúna. The students were trained on the procedures and administration of the questionnaires during interviews with 20 mothers in a pilot study. To ensure quality control, we held weekly meetings during the first 8 weeks of data collection, and there were meetings every two weeks up to the end of the study.

The interviews with the mothers were done during the immediate postpartum period in order to collect sociodemographic data, information on health care services, and on mothers and newborns' habits. We also collected data from medical records. After hospital discharge, follow-up was performed by telephone or home visit.

The present study is part of a more extensive study that sought to assess the association between use of drugs and duration of breastfeeding. Since there are not parameters in the literature about the duration of breastfeeding according to the safety of drugs and based on some evidence of the literature about the prevalence of breastfeeding at 12 months, we used the following values to calculate the size of our sample: significance level (α) at 5%; power ($1-\beta$) at 90%; 3 months for selection of subjects; 20% loss of subjects during the 12-month follow-up period; probability of breastfeeding at the end of the study of 30% for the group of mothers that used drugs with risk of adverse effects on the nursing infants or on lactation, and 70% for those who did not use drugs or used safe drugs; and probability of using drugs of 25%. Based on such parameters, the size of the sample was 252 mothers. Of this total, there were six losses: five mothers could not be found after hospital discharge and one newborn died after 40 hours of life. Of the 246 women initially included in the sample, eight were excluded due to follow-up loss, five of them moved

to other cities and three could not be found. After data collection, the statistical power for this study was set at 77%.

Data were processed using the Epi-Info version 1.1.2¹¹ and were transferred to the Stata[®] version 9¹² for statistical analysis. The comparisons among the sociodemographic characteristics of nursing mothers and among the safety levels of drugs for lactation, according to the American Academy of Pediatrics (AAP)¹³ and Hale,¹⁴ were based on the chi-square test. The effect of self-medication on the duration of breastfeeding was analyzed using Cox's regression model with time-dependent covariables.¹⁵ Residual analysis was performed to check the adequacy of the final model.

The terms self-medication and self-prescription were considered to have the same meaning in order to compare with other studies. Self-medication involves the use of over-the-counter drugs, being a legal practice. Self-prescription involves the use of prescription drugs without a prescription, which is illegal. Data from this study were compared with population-based studies due to the scarcity of studies assessing self-medication among lactating women.

The classification of drug safety during breastfeeding was based on the following publications: AAP¹³ and Hale.¹⁴ These publications classify the drugs used by nursing mothers taking into consideration the risks of adverse effects on nursing infants and on lactation. The AAP classifies drugs as: compatible; unknown effects, but may be of concern; significant effects on some nursing infants, and should be given to nursing mothers with caution; and contraindicated. Hale,¹⁴ on the other hand, classifies drugs according to five levels of safety: safest; safer; moderately safe; hazardous; and contraindicated. This study was approved by the Hospital and by the Research Ethics Committee of UFMG.

Results

After hospital discharge, self-medication was checked during interviews with 129 nursing mothers (52.4%). Of these, 121 (49.2%) reported they also used drugs prescribed by their doctors. Therefore, eight (3.2%) mothers only used drugs based on their own decision. The frequency of self-medication by nursing mothers did not show significant statistical difference when assessed according to the sociodemographic variables shown in Table 1.

During the period of the study, drugs were used 1,124 times, for 794 (70.6%) of these uses there was a medical prescription and 330 were cases of self-medication (29.4%). Mothers could not inform the names of 31 drugs prescribed by their doctors and the name of six drugs they used without prescription. The most frequent pharmacological classes used for self-medication were: analgesics/antipyretics (54.4%), non-steroidal anti-inflammatories (15%), spasmolytics (6.2%), laxatives (3.5%), benzodiazepines (3%), nasal decongestants (1.4%), antibiotics (0.9%), and others (15.6%). The most often used drugs were dipyron (31.5%)

Table 1 - Frequency of self-medication during lactation according to sociodemographic variables (Itaúna, Brazil, 2003)

Sociodemographic variables	Nursing mothers in the sample (n = 246)	Self-medication n (%)	p*
Origin			0.197
Urban area	232	124 (53.4)	
Rural area	14	5 (35.7)	
Prenatal care			0.505
Yes	243	128 (52.7)	
No	3	1 (33.3)	
Marital status			0.172
Married or living with a partner	204	111 (54.4)	
Single or separated	42	18 (42.9)	
Age			0.295
≥ 20 years old	212	114 (53.8)	
< 20 years old	34	15 (44.1)	
Maternal work			0.436
Yes	103	51 (49.5)	
No	143	78 (54.5)	
Educational level (years)			0.913
0 to 4	31	17 (54.8)	
5 to 8	86	47 (54.6)	
9 to 11	66	34 (51.5)	
≥ 12	63	31 (49.2)	
Family income (MS)			0.159
≤ 1	15	6 (40.0)	
1-3	140	80 (57.1)	
3-5	50	27 (54.0)	
> 5	41	16 (39.0)	

MS = current minimum salary at the time of the study (1 MS = R\$ 240.00).

* Pearson's chi-square test.

and paracetamol (17.9%). Data on the safety of drugs used for self-medication or with medical prescription are shown in Tables 2 and 3. According to the AAP¹³ classification, there was a higher probability of use of drugs posing risk of significant effects for nursing infants through mothers' self-medication when compared to the use of drugs with medical prescription. Similarly, there was a higher probability of use of moderately safe drugs or possibly hazardous drugs through self-medication when Hale's classification was adopted.¹⁴

Weaning due to the use of drugs was found in six women, and in all cases the drugs were only used with medical prescription. In order to assess the effect of self-medication on the duration of breastfeeding, self-medication was inserted in the final model of the Itaúna study, which identified the variables associated with duration of breastfeeding. According to

Table 4, self-medication was not associated with weaning ($p = 0.135$; $RR = 1.59$; $95\%CI 0.81-3.11$).

Discussion

The practice of self-medication as a self-care method is considered as old as the history of mankind. Such behavior was easily spread after the World War II, when the therapeutic repertoire was expanded, causing disastrous results such as masking of severe diseases, late diagnosis and late adequate treatment, risk of drug interactions, side-effects and drug intoxication, abuse of drugs and interference with pregnancy.⁸

With the purpose of avoiding such consequences, the WHO recommends that self-medication must be done in a safe and

Table 2 - Frequency of self-medication and use of prescribed drugs by nursing mothers according to the AAP¹³ classification (Itaúna, Brazil, 2003)

Classification of drugs for use during lactation ¹³	Self-medication n (%)	Medical prescription n (%)
Compatible	191 (58.9)	237 (31.1)
Unknown effects, but may be of concern	0 (0.0)	12 (1.6)
Significant effects on some nursing infants, and should be given to nursing mothers with caution	43 (13.3*)	2 (0.3*)
Non-classified	90 (27.8)	512 (67.1)
Total	324 (100.0)	763 (100)

AAP = American Academy of Pediatrics.

* $p < 0.05$.**Table 3** - Frequency of self-medication and use of prescribed drugs by nursing mothers according to Hale's classification¹⁴ (Itaúna, Brazil, 2003)

Classification of drugs for use during lactation ¹⁴	Self-medication n (%)	Medical prescription n (%)
Safe	86 (26.6)	436 (57.2)
Moderately safe or possibly hazardous	50 (15.4*)	62 (8.1*)
Non-classified	188 (58.0)	265 (34.7)
Total	324 (100.0)	763 (100.0)

* $p < 0.05$.

efficient manner. One should choose the drug and its exact dose, in addition to being informed about contraindications, drug interactions, and adverse effects.⁶ However, in Brazil, the low availability of drugs, the disrespect for the mandatory presentation of medical prescription and the population's lack of information and low educational level are reasons for concern in terms of quality of self-medication.⁷ In our country, at least 35% of drugs people use are bought through self-medication,¹⁶ and approximately 80 million people have this habit.⁷

Some studies concluded that fertile women are the individuals who more often use drugs without a prescription.^{4,7,10} Therefore, nursing mothers belong to the age group at the highest risk of self-medicating. Dean¹⁷ reported that the use of drugs by women is more generalized in the Western world due to the intense medical intervention in the female physiologic conditions, which is even more emphasized with the expansion of preventive programs. Chetley¹⁸ concluded that drug advertisements are based on the social roles traditionally assigned to women, among them the role of providing family health. Loyola Filho & Uchôa¹⁹ suggested that there is higher frequency of complaints and low tolerance of symptoms among women.

In Itaúna, 52.4% of the nursing mothers practiced self-medication. This frequency is similar to those found in

population-based studies carried out in the cities of Bambuí, state of Minas Gerais (46%),⁴ Santa Maria, state of Rio Grande do Sul (53.3%)²⁰ and Limeira and Piracicaba, state of São Paulo (56.6%).²¹ According to some authors, self-medication behavior is influenced by several factors: sociocultural conditions,¹⁹ lack of access to health services,²² high availability of drugs in the market,⁴ anxiety triggered by symptoms, lack of educational programs about the risks of self-medication, and pharmaceutical advertisement.^{5,22,23} Such factors also might explain the practice of self-medication by more than half of the nursing mothers in Itaúna.

The analysis of the sociodemographic characteristics of the sample did not show correlation with self-medication. Population-based studies found association of this outcome with educational level^{4,20} and marital status.⁴ Studies with a qualitative approach can be useful to better understand the sociodemographic aspects involved in the practice of self-medication during lactation.

The higher frequency of the use of analgesics, antipyretics and non-steroidal anti-inflammatories in self-medication was also found in other studies.^{3,7,19,20} These drugs, when used for short periods during lactation, are not a reason for concern since they are quite safe. However, there are reports

Table 4 - Variables related to relative risk of weaning during the first year of life using multivariate analysis considering self-medication (Itaúna, Brazil, 2003)

Variables	RR (95%CI)	p
Self-medication	1.59 (0.81-3.11)	0.135
Mother's age < 20 years old	1.56 (1.01-2.41)	0.046
Number of prenatal visits		
< 5 visits	1.77 (1.19-2.61)	0.016
5 to 9 visits	2.28 (1.32-3.92)	0.003
Breastfeeding intention		
12 to 24 months	0.58 (0.37-0.91)	0.018
> 24 months	0.61 (0.41-0.92)	0.016
Time of first breastfeeding session > 6 h	1.94 (1.17-3.20)	0.010
Use of alcohol or tobacco	2.02 (1.36-2.99)	0.000
Use of pacifier	2.94 (2.02-4.28)	0.000

95%CI = 95% confidence interval; RR = relative risk.

on adverse effects on nursing infants after the use of acetylsalicylic acid by mothers, as well as after chronic use of naproxen.¹⁴

The higher probability of use of drugs posing risk of adverse effects for nursing infants or lactation, when there is self-medication, suggests that there is need of better education about adequate self-medication, as well as about the use and the risks of drugs for women and children's health and for lactation. To disseminate the WHO guidelines would be a useful measure.²⁴ Prenatal and pediatric medical visits are the most appropriate moments for the health professionals to provide such information. Health professionals must be well informed about the safety of drugs that can be used during breastfeeding. Another useful mechanism could be providing the nursing mothers with scientific information about the use and safety of over-the-counter drugs. Therefore, the package inserts of drugs could play an important role in the education about self-medication during breastfeeding. However, a study that compared the information included in package inserts about the safety of using non-steroidal anti-inflammatories during lactation concluded that the information included in the inserts was in disagreement with the scientific evidence about the compatibility of these drugs with breastfeeding.²⁵

The association between self-medication and weaning was not confirmed in the present study, since there was no weaning due to the practice of self-medication. Such findings can be related to the fact that most drugs used by nursing mothers do not pose risk for the nursing infant or for lactation. We may assume that mothers who self-medicated probably believed that the drug they were using would not cause any damage to their child's health and, thus, they kept breastfeeding. This fact is supported by maternal information about the

practice of self-medication based on previous medical prescriptions provided during lactation. Studies assessing this relation were not found in the literature. New studies that investigate the association between self-medication and duration of breastfeeding need to be conducted.

The exposition of nursing infants to drugs that are not considered absolutely safe for use during breastfeeding or to drugs posing risks of adverse effects for the nursing infant or lactation reveals the need of providing the nursing mothers with better information on appropriate self-medication during this period. Self-medication was not a risk factor for weaning.

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