Short Communication

Prevalence of cocaine and marijuana use in the last trimester of adolescent pregnancy: Socio-demographic, psychosocial and behavioral characteristics

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Abstract

Objective: To evaluate the prevalence of cocaine and marijuana use during the third trimester of pregnancy in a population of 1000 teenage women of a public hospital in São Paulo, Brazil using hair analysis in order to avoid underestimation of data that could happen by the use of self-report questionnaires and describe socio-demographic, psychosocial and behavioral characteristics of the drug users.
Results: Hair analysis has detected use of cocaine and/or marijuana in the third trimester of pregnancy in 6% of the patients: 4.0% used marijuana, 1.7% used cocaine and 3% used both drugs. They were about 17 years old, from low-income, poorly educated, unemployed, financially dependent and they had not planned the pregnancy. 10% of miscarriages have occurred in this population.
Conclusion: This study shows the psychosocial impairment associated to teenage pregnancy and use of cocaine and marijuana during gestation by this low-income population with reliable data of prevalence obtained through hair analysis.
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Keywords: Pregnancy in adolescence; Cocaine; Cannabis; Cross-sectional studies

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The use of drugs by teenagers (Tavares, Béria, & Lima, 2001) is an important issue because there is consistent evidence in scientific literature about the obstetric complications that the substance abuse may cause to the baby and to the mother (Wolfe, Davis, Guydish, & Delucchi, 2004). Despite the relevance of the subject, few prevalence data is available and the studies on this matter are not supported by biological methods causing underestimation of data (Swartz, Swanson, & Hannon, 2003). Hair analysis is a reliable method to avoid this kind of bias (Huestis & Cone, 1998).

The purpose of this study is to evaluate the prevalence of cocaine and marijuana use, through hair analysis, during the third trimester of pregnancy in a low-income teenage population at the obstetric center of a public hospital in São Paulo, Brazil and to describe some socio-demographic, psychosocial and behavioral characteristics of theirs.

1. Materials and methods

A convenience sample of 1000 pregnant inpatient teenage (age between 11 and 19) women at the obstetric center of Mario de Moraes Altenfelder Silva Maternity Hospital were used. This is a public hospital located in the north region of the city of São Paulo, the largest city in Brazil, which caters mostly to local people from a low-income population who cannot afford private medical care. The data collection started on July 24, 2001 and finished on November 27, 2002. No patient refused to participate. The study was approved by the Ethical Committee of the Federal University of São Paulo.

The prevalence of use of cocaine and marijuana during the last trimester of the pregnancy was assessed by hair analysis through the combination of Enzyme-Linked Immunosorbent Assay (ELISA) and Gas Chromatography Mass Spectrometry (GCMS), methods, respectively, for tracing and confirmation (Huestis & Cone, 1998).

Socio-demographic, socio-economic, psychosocial and sexual behavior data were assessed by a questionnaire developed and adapted from the instrument used in Perinatal Needs Assessment—PNA (Zahnd, Klein, & Needell, 1997), with information about: age, address, place of birth, marital status, schooling, rate of school drop out, employment, professional training, family planning, birth control methods use, sexual habits, age at beginning of sexual activity and number of children. A Brazilian socio-economic classification has been used (ANEP, 1997), which is based on the head of the household's education, the number of domestic electric tools in the household and family income. It classifies individuals in 5 different categories (A to E) that were recoded to three larger ones: high (A and B), middle (C) and low (D and E).

Babies were weighed right after delivery by a pediatrician using a digital scale with a precision level of 10 g. Still-birth or infant death cases were also registered by them.

2. Results

Hair analysis detected the use of cocaine and/or marijuana in the third trimester of the pregnancy in 6% of the patients (marijuana: 4%, cocaine: 1.7% and both: 0.3%).

Table 1 shows demographic characteristics and data about social insertion and Table 2 shows data about characteristics of the sexual life and current gestation of the pregnant women that used drugs in the 3rd trimester.

3. Discussion

3.1. Prevalence of use of cocaine and marijuana

According to Ebrahim and Gfroerer (2003), after the recognition of the pregnancy state, the use of illicit drugs usually decreases. Besides, as the use of marijuana and cocaine is illegal, the access to these substances is much more difficult to a pregnant woman, particularly in the end of the gestation. Under these circumstances, prevalence of cocaine and marijuana use in the 3rd trimester of pregnancy found in this study (6%) is high. To enhance the relevance of these numbers, Tavares et al. (2001), found

Table 1

Prevalence of some socio-demographic characteristics and social status of pregnant adolescent women that used drugs in the 3rd trimester ($N=60$)

Characteristics	N	%	95% confidence interval	
			CI 1	CI 2
Place of birth				
São Paulo city	44	73.3	62.1	84.5
Northeast region of Brazil	11	18.3	8.5	28.1
Southeast (except São Paulo)	3	5.0	0.0	10.5
South region of Brazil	2	3.3	0.0	7.9
District where she lives				
North area of São Paulo	55	91.7	84.6	98.8
Other	5	8.3	1.2	15.4
Marital status				
Married	7	11.7	3.5	19.8
Widow/separated	2	3.3	0.0	7.9
Single	51	85.0	76.0	94.0
Economical classification (ANEP)				
High (A and B)	1	1.7	0.0	5.0
Medium (C)	29	48.3	35.2	61.1
Low (D and E)	30	50.0	37.2	62.8
Current job (n=60)				
No	53	88.3	80.2	96.5
Yes	7	11.7	3.5	19.9
Current student (n=60)				
No	41	68.3	56.6	80.1
Yes	19	31.7	19.9	43.4
Professional training				
No	56	93.3	86.9	99.7
Yes	4	6.7	0.3	13.1
She needs professional training				
No	26	43.3	30.7	49.7
Yes	34	56.7	44.1	69.3
Age (in years)	Medium	17.12	S.D.	1.678
Years of education	Medium	8.08	S.D.	1.934
Age when she stopped (in years)	Medium	16.05	S.D.	1.555
How long she has stopped (in years)	Medium	1.41	S.D.	1.229

Table 2
Prevalence of some characteristics of the sexual life and current gestation of pregnant adolescent women that used drugs in the 3rd trimester (*N*=60)

Characteristics	*N*	%	95% confidence interval	
			CI 1	CI 2
Number of sexual partners along life (*n*=60)				
1	39	65.0	52.9	77.1
2	10	16.7	7.2	26.1
3	4	6.7	0.4	13.0
4	1	1.7	0.0	4.9
5	2	3.3	0.0	7.9
More than 5	4	6.7	0.4	13.0
Marital status				
Live with the partner (legally married or not)	34	56.7	44.1	69.3
Do not live with the partner	26	43.3	30.7	55.9
Number of live children (*n*=60)				
0	4	6.7	0.4	13.0
1	46	76.7	66.0	87.4
2	9	15.0	6.0	24.0
3	1	1.7	0.0	4.9
Planned				
No	47	78.3	67.9	88.8
Yes	13	21.7	11.2	32.1
Contraception use				
None	43	71.7	60.3	83.1
Oral contraceptive	10	16.7	7.2	26.1
Preservative	6	10.0	2.4	17.6
Other	1	1.7	0.0	4.9
Abortion/fetal death (current pregnancy)				
	6	10.0	6.1	13.9
Age at the beginning of sexual activity (in years)	Medium	14.77	S.D.	1.366
Weight of the baby (in grams)	Medium	3014.26	S.D.	540.49

prevalence of frequent use of drugs among teenage students in Brazil around 2.6% for marijuana and 0.3% for cocaine, when considered both genders.

3.2. Socio-demographic characteristics and social status of the drug users

The subjects are mostly from low-income, they cannot afford private medical care, they were born in São Paulo city and they live in the hospital neighborhood. Most of them were not married. The couples were made up as a consequence of the precocious pregnancy, with all the possible negative implications on these children's education.

High rates of unemployment and school drop out are remarkable. Most of them were out of school by the time of delivery and these patients had already quit school for 1.41 years, which means that the pregnancy has not been the reason for the stop in studying. The relation between precocious pregnancy and school drop out has been outstanding in the specialized literature (Barnet, Arroyo, Devoe, & Duggan, 2004). On the other hand, poor education and low level of professional training may play an

important role in unemployment and all this largely contributes to keep this unfavorable socio-economic situation.

3.3. Characteristics of the sexual life and current gestation of the drug users

Aspects of the sexual life and current gestation have also been investigated in this study (refer to Table 2 for details). 65.0% of the patients in the study had only 1 sexual partner along life. So, most of the adolescents got pregnant during their first relationship. However, the proportion of mothers with no relationship cannot be despised: 43.3% had no partner by the time of the interview. Possible negative implications on the education of the child should be considered. It is also remarkable the fact that 16.7% of the patients had more than 1 child. Did they just make the same mistake again? Could it be avoided?

The age at the first sexual intercourse (medium = 14.77) is similar to other Brazilian studies on general population (Belo & Silva, 2004). But one fact should be emphasized: though most of the patients (78.3%) did not plan to get pregnant, only 28.3% reported the use of some contraceptive method. Despite the fact that the educational level is not as high as the expected for the mean age (observed = 8.08 years; expected = 10 years), we can infer that whether the sexual information is not being correctly done or it is not done soon enough to prevent the undesired pregnancy. Psychological features should also be considered in further studies on this matter.

Though the mean weight of the babies at birth is normal, 10% of the pregnancies of the patients that used drugs resulted in fetal miscarriage, Aquino et al. (2003), have found a higher rate in an interview-based household survey about teenage pregnant women that took place in three Brazilian cities, including São Paulo: 24.3%. A possible explanation is that our study has reached only the patient that had complications that demanded specific medical care in a hospital. In our country, induced abortion is forbidden. So, it is expected that this rate is mostly related to spontaneous miscarriage and it reflects the potential risk of impairment caused by the consumption of drugs during pregnancy. However, induced abortion should be included in these numbers as a result of clandestine methods. Either way, consequences are very bad.

In conclusion, despite methodological limitations of a descriptive cross-sectional study, psychosocial impairment associated to teenage pregnancy and use of cocaine and marijuana becomes evident in this paper.

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