Socio-demographic and clinical characteristics of pregnant and puerperal crack-cocaine using women: preliminary data

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Abstract

Background: The literature provides several studies on the effects of cocaine when exposed to the fetus. However, the majority of these data comes from animal models. **Objective:** The objective of this study is to present socio-demographic and clinical data in crack-cocaine using pregnant women and their babies, as compared to non-users. **Methods:** Cross-sectional study, comprised by 56 dyads of crack-cocaine using mothers-babies and 89 control dyads. In addition to the socio-demographic data and the babies' information, data collection was based on ABIPEMI for socioeconomic level, WAIS for IQ, MINI for psychopathology and ASSIST for drug use. **Results:** Most crack users, in comparison to non-users, did not have a partner (10.52% *vs* 4.4%, P = 0.001) and presented lower IQ (78.15, +/-8.07 *vs* 84.27 +/- 9.87; P = 0.002). The prevalence of antisocial personality disorder and suicide risk in users was higher than in non-users (24.44% *vs* none, P < 0.001; 28.26% *vs* 10.46% P = 0.01). Most of the users did not participate in prenatal care (75%). The babies that the crack-cocaine using mothers gave birth to weighed significantly less than the controls (2.858 g *vs* 3.240 g, P = 0.002). **Discussion:** Users had a higher degree of psychopathology and lower attendance in prenatal care. There was an overlap of adverse factors, both for exposed mothers and babies. The sum of these vulnerabilities could result in significant harm to the developing infant.

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Keywords: Pregnant women, postpartum period, crack cocaine, psychopathology, infant.

Introduction

Due to cocaine's low molecular weight, its metabolites easily cross the placenta, reaching fetal tissues in high concentrations[1], with concerning effects for child development[2]. The literature provides several studies on the effects of cocaine when exposed to the fetus. However, the majority of these data comes from animal models. Moreover, data on crack-cocaine specifically in humans are scarce, since most studies refer solely to cocaine. The health care provided to crack-cocaine using pregnant women represents an opportunity for preventive work, reducing costs and promoting better health conditions for the respective children. Unfortunately, treatment retention is very low among crack-cocaine users[3,4], which compromises the prenatal care for the exposed babies. Therefore, services should be tailored specifically to this population; while knowledge of their characteristics is essential to this end.

The aim of this article is to present preliminary data on sociodemographic and clinical characteristics of crack-cocaine using women and their infants in comparison to controls.

Methods

This is a cross-sectional study, with a convenience sample comprised by 56 dyads of crack-cocaine users and 89 non-exposed dyads. The sample was recruited during 2012 and 2013 from Hospital Materno Infantil Presidente Vargas (HMIPV) and Hospital de Clínicas de Porto Alegre (HCPA). Both are hospitals of reference for high-risk prenatal care in the city of Porto Alegre, Brazil. The pregnant women were recruited when arriving at the hospital to give birth. During the study period, there were 2228 deliveries, and 96 crack-cocaine users were identified (crack-cocaine prevalence during pregnancy, by interview = 4.4%). We were able to enroll 56 participants (58%), since there was not research assistant available full time. We compared socio-demographic data from crack-cocaine mothers who entered the studied and those who did not, and found no significant difference for P < 0.05 between groups. The healthy pregnant mothers were recruited from a group of donors of umbilical cord blood for the blood bank of the HCPA. Data were collected by trained research assistants. The project was approved by the Research Ethics Committee of HCPA and all subjects signed the informed consent form.

The socio-demographic data collected from the mothers were: age, ethnicity, marital status and socio economic level (Brazilian Association of Market Research Institutes)[5]. IQ was measured by way of the Wechsler Adult Intelligence Scale (WAIS)[6] and psychopathology by way of the Mini International Neuropsychiatric Interview (MINI) Brazilian Version 5.0.0/DSM IV/Current[7]. The use of crack and other drugs was evaluated with ASSIST[8]. A review of the babies' medical chart was performed to assess birth weight and legal custody after discharge, as well as the presence of prenatal care and infectious diseases carried by the mothers.

Results

Sample characteristics are exhibited in table 1. There was no difference between groups in terms of age, number of miscarriages and fetal death (P ≥ 0.05). In the same manner, there was no difference between the crack-cocaine user and control groups in terms of the birth being planned or not. Most crack users did not have a partner (P = 0.001) and had additional children (P = 0.007). Furthermore,

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crack users had a greater number of gestations and premature births, while having a lower estimated IQ. The crack users also tended to belong to a lower socioeconomic level and were more frequently of a non-white ethnicity (P ≤ 0.05 for all). Ethanol and tobacco consumption were frequent during the pregnancies of the crack using group, and more prevalent among users than non-users (Table 1).

Table 1. Socio-demographic and psychiatric characteristics of a sample of crack user pregnant women (n = 56) in comparison to healthy pregnant women (n = 89)

Characteristics	Crack users	Controls	P
	Mean & SD N %	Mean & SD N %	
Age	26.58 (5.02)	26.27 (6.)	0.76
Was pregnancy desired? Yes No	 24 (47.1) 27 (52.9)	 34 (38.6) 54 (61.4)	0.37
Number of gestations*	4 (1-5)	2 (1-5)	< 0.001
Number of live children*	3 (1-5)	2 (1-5)	< 0.001
Number of premature*	0 (0-4)	0 (0-2)	< 0.001
Number of miscarriages	0 (0-3)	0 (0-2)	0.123
Fetal death Yes No	 3 (7.3) 38 (92.7)	 9 (12.9) 61 (87.1)	0.53
IQ	78.15 (8.07)	84.27 (9.87)	0.002
White ethnicity Non-white ethnicity	14 (31.8) 30 (68.2)	66 (75.9) 21 (24.1)	< 0.001
With partner Without partner	34 (89.47) 4 (10.52)	85 (95.5) 4 (4.4)	< 0.001
Dichotomized socio economic level A-C D,E	 27 (58.69) 19 (41.3)	 79 (89.77) 9 (10.22)	< 0.001
Behavior characteristics	N (%)	N (%)	P
Current suicide risk	13 (28.26)	9 (10.46)	0.01
Anti-social** personality	11 (24.44)	-	0.00
Frequency of use of nicotine and alcohol in the last 3 months	N (%)	N (%)	P
Nicotine** – Daily or weekly – Monthly, once or twice and never	 23 (79.31) 6 (20.68)	 12 (29.26) 29 (70.73)	< 0.001
Alcohol** – Daily or weekly – Monthly, once or twice and never	 11 (40.74) 16 (59.25)	 1 (1.7) 57 (98.27)	< 0.001

Student's *t* test for independent samples; chi-square test.
SD: standard deviation; * Medium, minimum and maximum; IQ: intelligence quotient; ** Fisher's Exact Test.

Of the pregnant crack using mothers, there is information about 13 of the babies' fathers, out of which 7 (54%) were also crack-cocaine users, whereas there was no report of the fathers' substance use in the control group.

There is information about crack use in the last 3 months prior to the interview for 29 out of the 56 users (51.78%): of these 29, 14 users (48.27%) admitted daily or almost daily use of crack-cocaine, 5 (17.29%) weekly use, 3 (10.34%) monthly use, 3 (10.34%) once or twice and 4 (13.79%) no use during the last three months. According to ASSIST, 7 pregnant users tried to reduce the intake of crack in the last 3 months and another 5 did tried to, but not during the last 3 months.

From the crack-cocaine users, most of them did not have any prenatal appointment (75%). As a result of this fact, there was information about infectious diseases for only 14 (25%) mothers of the case group. From this group of 14 crack using mothers, 6 (42.86%) had some infectious disease diagnosed at the hospitalization (HIV, Hepatitis C and/or Syphilis). With regard to the babies, those born from crack-cocaine using mothers weighed significantly less than the controls (2.858 g *vs* 3.240 g, respectively, P = 0.002). We have data regarding the custody for 12 crack exposed babies: two of them were allowed to stay with the mother and 10 others with family members.

Discussion

Most crack users did not have a partner (P = 0.001) and most of the fathers in the exposed group were also drug addicts, which can represent a weak support matrix, a classical framework of insecure attachment with the baby[9]. In this sense, it was surprising that 47.1% (n = 24) of the pregnancies of the crack users were described as planned. Could this be a result of the difficulty in making realistic plans? An attempt to make up for lost children? Is it possibility an attempt to seek greater social support by way of the pregnancy? All of which offer possible explanations. Most of the exposed newborns were not discharged with their mothers, but with another family member. As the literature has documented serious concerns in regards to the situation of these children already[10].

There was a significant difference between users and non-users regarding suicide risk and anti-social personality. We did not find significant differences for other mental disorders, which may also be masked by the use of drugs.

Another important finding was that most of the patients used multiple drugs, especially alcohol and tobacco. Both of these drugs have been implicated in mental disorders for the developing child, like mental retardation in the case of alcohol abuse[11]. Thus, although the effects of prenatal cocaine exposure remains unclear[12,13], since its use is frequently associated to alcohol and tobacco, it puts the baby at risk. Interestingly, some subjects tried to decrease crack-cocaine use during pregnancy, highlighting this period as a time of greater receptivity to therapeutic intervention[14].

Our study has limitations, such as the use of a convenience sample –what might be acceptable in studies with difficult to reach subjects. We did not have data on infectious disease and some other variables for all of the subjects of the crack risk user group, because they often did not undergo prenatal appointments. For many variables there is missing data, since the mothers, despite having accepted to participate in the study, were not willing to respond to all the questions, because of abstaining from drug use or because of the post-partum. In addition, it is the right of the participant not to respond to questions that create stress or are overwhelming, considering that this study was carried out at a very difficult moment for the mother, both physically and emotionally. Another limitation is the fact that the control group was not comprised of peers with the same social characteristics. However, all participants whether crack users or from the control group, were users of the SUS (Brazilian Public Healthcare System). On the other hand, our study has strengths, such as the use of well-established instruments and the description of crack-cocaine using pregnant women, which is scarce in the literature. Nevertheless, the present study found a highly vulnerable population of pregnant women, in social and mental terms, exposing their babies to a series of hardships, beginning in the intra-uterus period. One of the most relevant findings was the high rate of absence in the prenatal care of the users (75%), as well as the high rate of infectious diseases. Our data highlights the need for a more active process in the engagement of this special population in both prenatal care and drug treatment, favoring post-partum conditions, such as trying to avoid mother-baby separation, stimulating breast feeding, in order to build secure attachment[15]. This approach, rarely offered by public health care worldwide, could help to promote primary prevention in childhood.

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Disclosure

Dr. Szobot has been a member of the speakers' bureau of Novartis in the last 3 years. Dr. Luis A. Rohde was on the speakers' bureau and/or acted as consultant for Eli-Lilly, Janssen-Cilag, Novartis, and Shire in the last 3 years. The ADHD and Juvenile Bipolar Disorder Outpatient Programs chaired by LR received unrestricted educational and research support from Treatment of adults with ADHD with the following pharmaceutical companies in the last 3 years: Eli-Lilly, Janssen-Cilag, Novartis, and Shire. Dr. Pechansky and other authors: no private conflict of interest to declare.

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