

NEONATAL REPERCUSSIONS OF EXPOSURE TO CRACK DURING PREGNANCY

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Objective: the aim of this study was to identify neonatal repercussions of exposure to crack during pregnancy, according to the clinical practices of the doctors and nurses and to analyze these patients' care protocols. **Methods:** this was a descriptive study with a quali-quantitative approach, conducted using interviews. **Results:** there was found to be no care protocol and that the majority of newborns were small for their gestational age, premature and with abnormal reflexes, among other complications. **Conclusion:** the results of this study are similar to those described in the literature and reinforce the need for holistic strategies for approaches and interventions for this population.

Descriptors: Crack Cocaine; Street Drugs; Substance-Related Disorders; Pregnancy; Neonatal Abstinence Syndrome.

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REPERCUSSÕES NEONATAIS DECORRENTES DA EXPOSIÇÃO AO CRACK DURANTE A GESTAÇÃO

Objetivo: o objetivo neste estudo foi identificar as repercussões neonatais decorrentes da exposição ao crack durante a gestação, segundo a prática clínica dos médicos e enfermeiras e analisar o protocolo de atendimento a esses pacientes. **Métodos:** trata-se de estudo do tipo descritivo com abordagem quali-quantitativa, realizada por meio de entrevistas. **Resultados:** verificou-se que não existe protocolo de atendimento e que a maioria dos neonatos é pequena para a idade gestacional, prematura, e apresenta reflexos anormais dentre outras complicações. **Conclusão:** os resultados encontrados neste estudo assemelham-se aos descritos na literatura e reforçam a necessidade de estratégias holísticas de abordagem e intervenção nessa população.

Descritores: Cocaína Crack; Drogas de Abuso; Transtornos Relacionados ao Uso de Substâncias; Gravidez; Síndrome de Abstinência Neonatal.

REPERCUSIONES NEONATALES DE LA EXPOSICIÓN AL CRACK DURANTE EL EMBARAZO

Objetivo: el objetivo en este estudio fue identificar las repercusiones neonatales de la exposición al crack durante el embarazo, según la práctica clínica de los médicos y enfermeras y analizar el protocolo de atención a esos pacientes. **Métodos:** se trata de estudio del tipo descriptivo con aproximación cuali-cuantitativa, desarrollado mediante entrevistas. **Resultados:** fue verificado que no existe protocolo de atención y que la mayoría de los neonatos es pequeña para la edad gestacional, prematura, y presenta reflejos anormales entre otras complicaciones. **Conclusión:** los resultados encontrados en este estudio son semejantes a aquellos descritos en la literatura y refuerzan la necesidad de estrategias holísticas de aproximación e intervención en esa población.

Descriptorios: Cocaína Crack; Drogas Ilícitas; Trastornos Relacionados con Sustancias; Embarazo; Síndrome de Abstinencia Neonatal.

Introduction

Drug use poses a great problem for public health and has worrying repercussions on our society as their consumption exercises and aggressive influence on the life of the individual, affecting their mental health, behavior and attitudes. This problem becomes even more serious in the case of pregnancy, as exposure of these patients to psychotropic drugs can have irreversible impact on both mother and child⁽¹⁾.

According to the World Health Organization (WHO), psychotropic drugs are those which act upon the Central Nervous System (CNS), producing behavioral and cognitive changes and changes in mood due to their capacity to create habits and behavior related to their use, otherwise known as addiction⁽²⁾. The literature available explains drug addiction as producing a state of maladaptation, resulting in significant harm or suffering, for both mother and child⁽³⁾.

The focus of this study was to examine neonatal repercussions of stimulant use, especially crack, during pregnancy. Crack is free base cocaine and acts by activating the CNS, increasing wakefulness, motor activity and a variety of other changes⁽⁴⁾. Consequently, consuming crack during pregnancy can have tragic repercussions on intra-uterine development and conditions at birth⁽⁵⁾.

Statistical data show that the prevalence of crack use in the obstetric population has increased considerably in recent decades. It is estimated that up to 10% of North American women have used this drug during pregnancy and, in consequence, the majority of these patients have suffered pre-term birth or premature detachment of the placenta, as well as other maternal and perinatal complications⁽¹⁾.

According to research on the subject, the use of psychotropic drugs during pregnancy is also known to result in symptoms of intoxication or abstinence in the Newborn (NB), as these substances pass easily through the placental barrier and may trigger a series of alterations in the fetus. The literature also mentions some of the possible harmful effects of crack, highlighting Intrauterine growth retardation (IUGR) microcephaly and prematurity⁽⁵⁻⁷⁾.

Using crack may cause problems such as hypertension, tachycardia, hyperthermia in both mother and child. As a consequence of such pathologies or perhaps as an effect of the drug, fetal hypoxemia, malformations, miscarriage or premature detachment placenta and decreased average length of newborns may occur, in addition to increasing the rates of hospitalization in Neonatal Intensive Care Units (UTIN)⁽⁵⁾.

It is also worth mentioning that NBs exposed to crack may also suffer from intellectual disability or other mental and behavioral disorders, with serious consequences for their development⁽⁸⁾. Given this, the aim of this study was to identify neonatal repercussions of exposure to crack during pregnancy according to the clinical practice of the doctors and nurses attending, and to analyze the neonatal care

protocol for those whose mothers' used drugs, especially crack, during pregnancy.

Methods

This was a prospective cross-sectional study with a qualitative and quantitative approach. It was conducted through interviews with doctors and nurses who treated the NB with neonatal complications from exposure to crack, in the Neonatal Intensive Care Unit of the Santa Casa de Misericórdia Hospital (HSCMV) in Vitória, ES.

The sample selected for this study was limited to professionals working at the NICU, a total of 14 subjects consisting of 7 nurses and 7 doctors. However, due to adjustments in the nursing staff at this unit, only 6 participated, corresponding to 85.71% (n=7). On the other hand, 8 doctors were interviewed, exceeding the number selected for the sample for this category (n=7). Thus, the total proposed for the study was, in fact, achieved.

Inclusion criteria were: forming part of the clinical body at the NICU; agreeing to participate in the study, signing an informed consent form. Exclusion criteria: those who refused to sign the consent form were excluded from the study.

Semi-structured interviews were used to collect the data. These were conducted at the workplace, on alternate days, during the day and the night shift, during September and October 2010. The questions involved in the qualitative approach focused on neonatal complications found by the doctors and nurses and intervention strategies adopted when treating newborns who had been exposed to crack. The quantitative aspect included the initial assessment parameters found in the newborns by the interviewees while carrying out their activities.

Before the interview, the research was explained and, through signing the consent form, the interviewee consented to have to recorded and later transcribed. So as to protect the identities of the participants, specific codes were used on the interview form to identify the class of professional, for example, E1 to E6 for the nurses and M1 to M8 for the doctors.

Content analysis⁽⁹⁾ was used in the qualitative analysis of the data so as to find what lay behind each piece of information stated, following the stages of pre-analysis, exploring the material and treating the results. The data resulting from the quantitative variables were entered into a database using EPI-INFO 6.0 software, later presented as numbers and percentages in the text and in tables.

The research was approved by the Research Ethics Committee of the Escola Superior de Ciências at the Santa Casa de Misericórdia Hospital, Vitória – EMESCAM, nº115/2010.

Results

According to the doctors and nurses interviewed, the main method of identifying newborns exposed to crack was from the mother's medical history or from information collected upon patient admission.

[...] we don't have a specific test for this, we take into consideration the perinatal patient history and the relationship between mother and child, as well as the repercussions on the newborn, which we know may be few, or none at all, or even more serious cases such as convulsion [...] but there isn't a specific test available [...] (M1).

[...] it is identified upon arrival, in the medical history, there is no text available for this. Sometimes it isn't even in the medical history and, as the mother has been admitted, we observe behavior [...] (M4).

Regarding Gestational Age (GA) of the NB exposed to crack, the statements from the interviewees showed a predominance of pre-term births, at 71.4% (n=10), followed by full-term births, corresponding to 28.6% (n=4).

As for anthropometric parameters (Cephalic Perimeter – CP – and birth weight), significant alterations can take place in a fetus exposed to crack, as shown in Table 1, as growth is closely linked to the oxygen and nutrients available⁽¹⁰⁾.

Table 1 – Anthropometric measurements of newborns with pre-natal exposure to crack, Vitória, ES, 2010

Anthropometric measurements	n	%
Cephalic perimeter		
Microcephaly	2	14.3
Macrocephaly	0	0
No alteration	12	85.7
Total	14	100
Birth weight		
Small for gestational age	10	71.43
Appropriate for gestational age	3	21.43
Large for gestational age	0	0
Not reported	1	7.14
Total	14	100

Although research mentions the presence of congenital anomalies, there were no reports of teratogenicity in this study. It is worth pointing out that, although crack use is associated with a higher rate of congenital defects in newborns, we should bear in mind the difficulty of isolating crack as a teratogenic agent as abuse of more than one drug is common in these patients, as can be seen in this statement from an interviewee.

[...] it is difficult to know whether the particular defect is related to crack alone or to another cause or is part of the family medical history [...] (M5).

Regarding the Apgar scores for newborns exposed to crack, in this study the professionals interviewed did not report loq Apgar scores, as can be seen in Table 2.

Table 2 – Apgar scores for the 1st and 5th minute for newborns exposed to crack. Vitória, ES, 2010

Apgar score	1 st minute		5 th minute	
	n	%	n	%
1 to 3	0	0	0	0
4 to 6	2	14.3	0	0
7 to 10	8	57.1	10	71.4
Not reported	4	28.6	4	28.6
Total	14	100	14	100

In order to better understand the information, the interviewees justified the reports as can be seen in the statements below.

[...] what I see in practice, at least, is that there is not much of a rule dictating whether a mother using crack will have a baby with a low Apgar score, even in the case of premature labor. If it's very premature, though, the score will be low, nothing to be done [...] (E2).

[...] they're not that premature, most of them we see here are 35 or 26 weeks, and the Apgars are not so bad, usually above 7 [...] (M4).

The professionals interviewed reported a prevalence of abnormal reflexes in newborns, 85.7% (n=12), while only 14.3% (n=2) were reported as having normal reflexes. Alterations in the primitive reflexes of NBs exposed to crack and reported by the doctors and nurses interviewed included: exacerbated Moro reflex, exacerbated/heightened hypoactivity, irritability, hypotonia, weak sucking reflex, lethargy and tremors.

Regarding neonatal complications, the interviewees reported that the most complications in NBs exposed to crack included incessant crying, convulsions, respiratory distress, tachypnea, apnea and dyspnea; sleep disorders, drowsiness, muscle spasms, tremors, hypotonia/hypoactivity, hypoglycemia, infections, digestive intolerance and irritability, agitation and restlessness. It is worth noting that crying was the complication most often reported by the interviewees.

[...] they cry inconsolably, I had one which cried a lot, difficult to quieten down [...] (M5).

With regards intervention strategies, the doctors and nurses interviewed reported a series of actions in caring for newborns exposed to crack during pregnancy. The most commonly reported interventions by the nurses were constantly monitoring vitals and giving nursing guidance to the family. As for the doctors, interventions mentioned included: suspending breastfeeding, monitoring glycemia, prescribing anti-convulsion medication and requesting accompaniment in the postpartum period. It is worth noting that there were actions, taken by both doctors and nurses, including requesting removing the child from the mother and requesting social support services.

Some of these interventions were justified by the interviewees as follows.

[...] the newborn is usually separated from the mother as she's in withdrawal, but she visits and monitors the baby [...] These babies are not usually breastfed [...]

 (E4).

[...] we provide basic care for the NBs, feeding them if the mother can't breastfeed, we feed the baby and later contact social services, as well as giving guidance [...] (E1).

[...] we advise the mother not to breastfeed, we bring the baby here (NICU or medium risk unit) because we know the drug can be passed on through the milk [...] (M3).

[...] we separate baby from mother so she can't breastfeed, always accompanied and we call social services [...] (M4).

The professionals interviewed were aware of possible delayed appearance of certain complications, adopting specific behavior in discharging these newborns from hospital, as can be seen below.

[...] we searched in the literature, we saw that these convulsions may appear later, the babies may be 48hrs old and begin to suffer these repercussions. Faced with this, we have adopted the practice of not allowing these mother to be discharged until after 72 hours. Because we've seen that withdrawal can set in later, and if we discharge them after 48 hours, as proposed, we miss those babies whose symptoms start later [...] (M1).

Discussion

In the Hospital in which this study was conducted, no laboratory tests are used to investigate or prove prenatal exposure to crack. As the doctors and nurses reported, the method they use to recognize this is from the patient's medical history and from observation of the patient during the hospital stay. It should be noted that even though this is an effective method of recognizing cases, the information obtained from the medical history may underestimate the problem as it is known that many pregnant women omit mention of drug use⁽¹¹⁾.

As for gestational age, pre-term births prevailed. Such reports corroborate the findings of other studies, in which premature labor and premature waters breaking occur more often in pregnant women who use crack^(1,5,8,12).

As for birth weight, the results of this study are similar to those found in other research, as low birth weight was common. However, there were few instances of microcephaly, according to the available literature, lower cranial circumference is often found in NB exposed to crack^(5,12).

In this study, there were no reports of deformities in the newborns exposed to crack. However, it should be noted that crack has been mentioned in studies as a week teratogen^(1,13), and it is difficult to establish its teratogenic potential in isolation, due to concomitant use of alcohol and other drugs.

Although research on the subject has shown reduced Apgar scores⁽¹²⁾, in this study it was found that drug use during pregnancy did not affect the Apgar scores of exposed NBs, as Apgar scores of 7 or above at the first and fifth minute were those most commonly reported. It is worth noting that the majority of newborns exposed to crack did not need resuscitating in the labor ward.

Research shows that crack use may have serious effects on the central and peripheral nervous system of the fetus, causing structural, cognitive and behavioral changes in the newborn^(5-6,14). In this study, as well as exacerbated reflexes, weak sucking, poor quality movement and tremors were found.

As for the complications of newborns exposed to crack, the doctors and nurses interviewed stated that the NBs most commonly demonstrated agitation, irritability, tremors, crying and convulsions, as has also been described in other studies on the topic^(5,14). It is worth pointing out that withdrawal syndrome after prenatal exposure to crack is not clearly defined in the literature, as it remains unclear whether such behavioral changes result from possible intoxication or from the crack⁽⁵⁾.

Studies have shown that crack addiction is a determining factor in the contraindication of breastfeeding, as there is known to be a high risk of complications for the NB. In the Hospital in which this study was conducted, as well as the doctor suspending breastfeeding, depending on the case the NB may also be separated from the mother. This is understandable in light of the reports in the literature of aggression and irritability in users, both while intoxicated and while suffering withdrawal from the drug^(8,15-16).

According to the Ministry of Health⁽¹⁷⁾, the newborn should not be discharged before 48hrs, as this period is important in detecting neonatal pathologies. The professionals in this

study adopted a minimum period of 72 hours before discharging newborns exposed to crack, as there was concern convulsions might occur in the neonatal period. The available literature mentions that such convulsions may not have a specific cause and may be triggered by a variety of factors earlier or later in the period^(16,18).

In the hospital in which this study took place, the health care professionals (n=14) reported that there was no specific protocol for caring for NBs with characteristics of crack intoxication or withdrawal. The importance of using Care Protocols has been recognized in improving health care quality as, in addition to supporting professional in executing their activities, they guarantee comprehensive and effective care for patients, reducing complications from lack of diagnosis or inappropriate treatment⁽¹⁹⁻²⁰⁾.

Although recommended, in the literature there is no specific clinical protocol for treating NBs whose mothers used crack during pregnancy, although a variety of studies have shown the complications arising from exposure to this drug^(5,12,14). Given this, health care professionals lack scientific publications referring to treatment interventions for treating this specific segment of the population.

Conclusion

Although the method for identifying newborns with prenatal exposure to crack is effective, its reliability is on question, as mention of drug use may be omitted for various reasons while collecting the pregnant woman's medical history. Given this possibility, doctors and nurses at the NICU are also attentive to patient behavior and the mother-child relationship when investigating drug use. However, it should be highlighted that, given the observational character of this method, diagnosis may be delayed, thus increasing the risk of sequelae in the NB.

It was observed that prenatal crack use did not have a direct influence on the Apgar score, although a close relationship was noted between low scores and the degree or prematurity of the NB exposed to crack.

In the clinical practice of the interviewees, no instances of deformity were recorded in the exposed NBs. It is, however, important to highlight the difficulty in establishing crack as a single causal factor as, in addition to the fact that crack users often consume alcohol or other drugs at the same time, there are diverse factors related to congenital abnormality that need to be carefully evaluated.

It is important that suspending breastfeeding and separating mother and child is carefully evaluated, as, in addition to the information on most recent drug use being dubious, any possible harm to the newborn as a result of the mother's irritability from crack withdrawal should be avoided. It is also essential that the possibility of discharging the NB after 48hrs be studied in detail, as some complications may have delayed onset and thus go undiagnosed and untreated, increasing the risk of harm to the newborn.

Given all of the above, it can be seen that certain measures should be adopted in neonatal care. It is suggested, therefore, that further studies be carried out to examine and show neonatal repercussions from crack use during pregnancy, as well as introducing toxicology tests for a more reliable diagnosis. A clinical protocol specific to NBs exposed to crack needs to be drawn up, based on the actions conducted by the doctors and nurses regarding the neonatal complications described in the literature.

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