

COMPLICATIONS PRESENTED BY NEWBORNS OF SMOKER MOTHERS IN THE NEONATAL PERIOD

COMPLICAÇÕES APRESENTADAS POR RECÉM-NASCIDOS DE MÃES TABAGISTAS NO PERÍODO NEONATAL

COMPLICACIONES EM LOS RECIÉN NACIDOS DE MADRES FUMADORAS EN EL PERÍODO NEONATAL

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ABSTRACT

Objectives: to present the available evidences, from the national literature, about the main complications presented by newborns (NB) of smoker mothers in the neonatal period. **Methodology:** This study is an Integrative Review (IR) of literature, composed by articles obtained in scientific databases, using the descriptors: smoking, newborn, complications. The articles were organized through a form for data collection. **Results:** There were found 08 articles published between 2006-2016. The first category has approached the incidence of smoking during pregnancy. The second category has identified the complications presented by NB. **Conclusion:** The main complications found were: reduction of NB's weight, cephalic length and perimeter, and insufficient birth weight, compared to infants from non-smoker mothers. It is extremely important the conduction of new researches in order to provide the implementation of interventions in mother's and NB's healthcare.

Keywords: Smoking. Newborn. Complications.

RESUMO

Objetivos: Apresentar as evidências disponíveis na literatura nacional sobre as principais complicações apresentadas por recém-nascidos (RNs) de mães tabagistas no período neonatal. **Metodologia:** Trata-se de uma Revisão Integrativa (RI) da literatura, composta por artigos obtidos bases de dados científicos, utilizando-se os descritores: tabagismo, recém-nascido, complicações. Os artigos foram organizados por meio de formulário para coleta de dados. **Resultados:** Foram encontrados 08 artigos publicados entre 2006-2016. A primeira categoria abordou a incidência do tabagismo na gestação. A segunda categoria identificou as complicações apresentadas pelo RN. **Conclusão:** As principais complicações encontradas foram: diminuição do peso do RN, comprimento e perímetro cefálico, e peso insuficiente ao nascer, comparados aos recém-nascidos de mães que nunca fumaram. É de suma importância a realização de novas pesquisas a fim de propiciar a implementação de intervenções na assistência à saúde materna e do RN.

Descritores: Tabagismo. Recém-nascido. Complicações.

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RESUMEN

Objetivos: Presentar la evidencia disponible en la literatura nacional sobre las principales complicaciones en los recién nacidos (RN) de madres fumadoras en el período neonatal. **Metodología:** Se trata de una revisión integradora de la literatura (RI), que consta de los artículos obtenidos a partir de bases de datos científicos, usando las palabras clave: tabaquismo, recién nacido, complicaciones. Los artículos se organizan a través de un formulario de recogida de datos. **Resultados:** Se encontraron 08 artículos publicados entre 2006-2016. La primera categoría se dirigió a la incidencia del tabaquismo en la gestación. La segunda categoría se identificaron las complicaciones presentadas por lo RN. **Conclusión:** Las principales complicaciones se redujeron el peso, longitud y circunferencia de la cabeza del recién nacido, y el peso insuficiente al nacer en comparación con los bebés nacidos de madres que nunca habían fumado. Es muy importante llevar a cabo más investigaciones con el fin de facilitar la aplicación de las intervenciones en la atención de la salud materna y de lo RN.

Palabras clave: Tabaquismo. Recién nacido. Complicaciones.

INTRODUCTION

The pregnancy is an odd moment in women`s life, marked by physiological alterations that prepare the maternal organism for generating a new being.¹ The adoption of healthy habits is suggested in order to equilibrate the maternal and fetal health, preventing and minimizing complications during and after gestation.

The neonatal period correspond the first 28 days of postpartum², and concentrate biological, environmental, social and cultural risks, contributing greatly with the increase of child mortality.³ Mothers` bad habits, harmful to health such as smoking, represent an important public health problem due to its great prevalence and negative impact on unborn and newborn child health,

mainly related to their growth and development.⁴

The incidence of the smoking habit in women public is higher than in men public, deserving a special attention duo to the increase and the specificities of the effects of smoking on women`s health.⁵

For that matter, the focus was on identifying the complications presented by NB of smoker mothers during neonatal period and the available evidences about the theme.

METHOD

In the search of knowledge about the complications presented by NB of smoker mothers in neonatal period, the chosen method was Integrative Review (IR). This methodology of research allows the inclusion of theoretical and

empiric literatures, such as studies with different methodological approaches, facilitating the access to recent scientific evidences and favoring the improvement of knowledge about the theme, highlighting points that require greater focus of new researches.^{6,7}

The following steps were taken in the process of this revision: (1) selection and delimitation of the theme, (2) search on databases, (3) data collection and characterization, (4) analysis and evaluation of the articles included in this review, (5) interpretation and discussion of the results, (6) synthesis and presentation of the results in a descriptive way.^{6,8} An instrument for data collection (Appendix 1) proposed and validated by Ursi (2005) was used for analyzing the articles. It is composed by the following items: 1) identification (title of the article, title of the journal, authors, country, language, year of publication); 2) institution where the study was developed; 3) type of scientific journal; 4) methodological characteristics of the study (type of research, objective, sample, data treatment, interventions, results, analysis, implication and level of evidence; 5) evaluation of the methodological accuracy.

The scientific databases “Latin America and the Caribbean Literature on Health and Science (LILACS)” and “Medical Literature Analysis and Retrieval System on-line (MEDLINE)” were consulted, which were selected the articles published between January of 2006 and January of 2016. In order to ensure a careful search of the articles, the following descriptors were delimited controlled in Health Science: smoking, newborn, complications. The titles and abstracts of the papers were read, available online, in its entirety.

The criteria of inclusion were: full articles, available in its entirety, written in Portuguese, published between 2006 and 2016. The criteria of exclusion adopted were: articles published out of the determined period which theme did not refer to the main subject of this research.

RESULTS AND DISCUSSION

After the application of the inclusion and exclusion criteria, 08 articles were chosen to compound the sample of this IR after the application of the inclusion and exclusion criteria. A meticulous reading of the complete selected article occurred in the stage of data collection.

Table 1: Table of presentation of the articles that make up the sample of this IR. Uberlândia-MG, 2017.

Authors	Article name	Year of Publication	Objective (s)
ROCHA, R. S.; BEZERRA, S. C.; LIMA, J. W. O.; COSTA, F. S.	Consumption of medicines, alcohol and smoking during pregnancy and evaluation of the teratogenic risks. (A1)	2013	To evaluate the use of medicines, alcohol and smoking during pregnancy and teratogenic potential related to different populational characteristics.
ZHANG, L.; GONZÁLEZ-CHICA, D. A.; CESAR, J. A.; MENDONZA-SASSI, R. A.; BESKOW, B.; LARENTIS, N.; BLOSFELD, T.	Maternal smoking during pregnancy and antropometric measures of the newborn: a study with populational base in the extreme south of Brazil. (A2)	2011	To investigate the prevalence of maternal smoking during pregnancy and its impact on antropometric measures of the newborn.
SURITA, F. G. C.; SUAREZ, M. B. B.; SIANI, S.; SILVA, J. L. P.	Factors associated to the low birth weight among teenager pregnant women in the Southeast of Brazil. (A3)	2011	To know the prevalence and some factors associated to the low birth weight among teenager pregnant women.
PARANAÍBA, L. M. R.; MIRANDA, R. T.; MARTELLI, D. R. B.; BONAN, P. R. F.; ALMEIDA, H.; ORSI JÚNIOR, J. M.; MARTELLI JÚNIOR, H.	Cleft lip and palate: a serie of uncommon clinic cases. (A4)	2010	To describe uncommon clinic cases of CL/P non-syndromic (CL/PNS), diagnosed in a Service of reference in Minas Gerais, Brazil, and correlate this alterations with possible risk factors.
SILVA, A. M. R.; ALMEIDA, M. F.; MATSUO, T.; SOARES, D. A.	Risk factors for preterm births in Londrina, Paraná, Brazil. (A5)	2009	To identify risk factors of for preterm births.
GALÃO, A. O.; SODER, S. A.; GERHARDT, M.; FAERTES, T. H.; KRÜGER, M. S.; PEREIRA, D. F.; BORBA, C. M.	Effect of maternal smoking during pregnancy and perinatal complications. (A6)	2009	To evaluate the profile of pregnant smokers at the Hospital das Clínicas de Porto Alegre (HCPA), determine the prevalence of smoking in this patients and evaluate the effects of smoking in pregnancy and newborns.
ARAUJO, O. R.; ALBERTONI, A. C. S.; LOPES, V. A. A.; LOUZADA, M. E. R.; LOPES, A. O.; CABRAL, E. A. F.; AFONSO, M. R.; ARAUJO, M. C.	Cesarean delivery and other risks for persistent pulmonary hypertension of the newborn. (A7)	2008	To evaluate the risks for persistent pulmonary hypertension of the newborn, confirmed by echocardiography, associated to cesarean delivery and other factors.
AZENHA, V. M.; MATTAR, M. A.; CARDOSO, V. C.; BARBIERI, M. A.; DEL CIAMPO, L. A.; BETTIOL, H.	Insufficient birth weight: a study of factors associated in two birth cohorts in Ribeirão Preto, São Paulo. (A8)	2008	To evaluate factors associated to the increasing rates of insufficient weight (IW) in two cohorts of newborns (NB) alive and single delivery in Ribeirão Preto, São Paulo, separated by 15 years (1978/79 and 1994).

Source: authors

The analysis of the articles has allowed the composition of the following categories: (1) Smoking Incidence

during pregnancy and (2) Complications Presented by NB (Table 2).

Table 2: Frequency and percentage of the categories obtained in the sample of articles of the IR. Uberlândia-MG, 2017.

	Categories	
	Smoking incidence during pregnancy	Complications presented by NB
Frequency (n)	1	7
Percentage (%)	12,5%	87,5%
Articles	A1.	A2; A3; A4; A5; A6; A7.
Publication Period	2013	2008-2011

Source: authors

The first category was called "Smoking Incidence During Pregnancy", found in 12,5% of the articles in the sample. This category is composed by an article that describes the smoking habit during pregnancy, present in 11,3% of the gestation, where 75,7% until the end of the gestation. The numbers founded in the study were close from the ones in the literature. However, the data may not be reliable duo to the fact of women fear the disapproval of the researchers and the possibility of being responsible for some damage that smoking can have caused to their children. Despite the fact of smoking had been practiced by pregnant women during all the gestational period, it was not possible to associate the statistical significance between the habit of smoking during

pregnancy and the presence of fetal malformations.⁹

The incidence of the smoking habit among women in fertile age is of major importance because it is a consensus that the habit of smoking during the pregnancy time is harmful to mother's and unborn child's health, being responsible for 20% of cases of low birth weight, 8% of premature births and 5% of all perinatal deaths.^{4,10}

The consulted literature showed that over the last years, there were a small reduction in the percentage of smoking pregnant women, and considering the smoking ones, a small part of them could abstain that habit in the weeks before the birth.¹¹

The second category found in 87,5% (07) of the articles was called

"Complications Presented by NB". In this category were identified the main complications presented by NB of mothers who smoke.

In the article A2, the maternal smoking during the pregnancy had presented negative impact over the weight of the NB, length and cephalic perimeter, compared to the NBs of non-smoker mothers.¹² In the article A3, the maternal smoking had not associated to the low birth weight in pregnant teenagers, suggesting that the increase of the incidence of low birth weight in this population is multifactorial.¹³ In the article A4, there were not observed any positive association between the habit of smoking during pregnancy and uncommon CL/PNS, confirming the rarity of such alterations in the Brazilian population.¹⁴ In the article A5, the habit of smoking during the pregnancy had not being associated with the preterm birth.¹⁵

In the article A6, the NB weight was lower in the group of smoking pregnant women, with an average variation of 143g less in this group. The number of small NB for its gestational age were significantly higher in the group of women who smoke during pregnancy, also the number of big NB for its gestational age were significantly lower in this group. Despite the fact that

the literature shows a bigger risk of abortion and intrauterine death in NB of mothers who smoked during pregnancy, in the study the level of abortion was not different between the two groups, there was not any intrauterine death or any case of placental abruption.¹⁶

The article A7 did not show any interactions between active smokers of any number of cigarettes/day; or between passive smokers, in part or in all of the gestations and the persistent pulmonary hypertension of NB.¹⁸

In the article A8, the maternal smoking habit was associated with the birth weight in two cohorts of NB separated by 15 years (1978/79 and 1994). However, in this interval of 15 years an increase of maternal smoking rate can be observed. Thus, according to the study, the smoking habit would not be associated with the increase of the prevalence of insufficient birth weight in this period.¹⁸

Studies point out a high risk of prematurity and low birth weight in pregnant women who smoke, and suggest that the effects over the fetal growth can be mediated by restriction in the uterus-placental bloody flow.¹⁰

Studies associate the smoking habit during pregnancy with alterations in the development of the nervous system, caused by fetal chronic

hypoxemia as result of high levels of carbon monoxide, besides the deficiency in the absorption of vitamin B12.¹⁰

The scientific literature indicates that the fetal exposure to smoking can affect the pulmonary growth, reducing the diameter of the airways, increasing the risk of chronic obstructive pulmonary disease, bronchial asthma, lung cancer and cardiovascular diseases.¹⁰

Impairment of the immunologic system could be noticed, with the reduction of macrophages phagocytic capacity and alterations in the level of IgA.¹⁹ The diminution in the concentration of ascorbic acid in the amniotic fluid of smoker women compared to non-smokers can justify the premature rupture of membranes and abortion.¹⁹

The nicotine reduces the production of prolactin, reducing this way the milk production, causing damage on breastfeeding. It can also cross the placental barrier and concentrate in the amniotic fluid. Likewise, it can cross barriers and concentrate in the breast milk, prejudicing the NB.²⁰

CONCLUSIONS

The search for evidences has pointed a high level of smoking among pregnant women during all the gestational period, presenting rates close to the ones in the literature.

Still according to this IR, the maternal smoking habit is associated to the reduction in the NB weight, length and cephalic diameter, and insufficient birth weight, compared to NB of mothers who never smoke. Associations between the smoking habit during pregnancy and low birth weight in pregnant adolescents were not observed; neither with uncommon CL/PNS; preterm births and persistent NB persistent pulmonary hypertention.

Through this study, it was possible to verify that exist a lacking of papers published in the national literature about the use of Tabaco during pregnancy and its complications, making necessary the conduction of new researches in order to provide the implementation of interventions in maternal and NB health care.

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