



REVISIONES

The early food introduction and the risk of allergies: A review of the literature

A introdução alimentar precoce e o risco de alergias: Revisão da literatura

La introducción alimentaria precoz y el riesgo de alergias: Revisión de la literatura

Amanda Maria Luz e Silva ¹

Gicely Regina Sobral da Silva Monteiro ²

Adrienny Nunes da Silva Tavares ³

Zenaide Verônica Ribeiro da Silva Pedrosa ⁴

¹ Resident nurse in Family Health. Municipal Health Department of Jaboatão dos Guararapes. Recife. Pernambuco. Brazil.

² Nurse coordinator of Primary Care. Municipal Health Secretariat of Jaboatão dos Guararapes. Recife. Pernambuco. Brazil.

³ Family Health Strategy Nurse. Municipal Health Department of Jaboatão dos Guararapes. Recife. Pernambuco. Brazil.

⁴ Nurse coordinator of the Human Milk Bank of the Hospital Barão de Lucena. State Secretary of Health of Pernambuco. Brazil.

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ABSTRACT:

Breastfeeding is considered a vital resource for promoting the child's nutritional health, with repercussions throughout life. The early food introduction to the infant diet is a risk factor for the development of chronic diseases, such as allergy to cow's milk protein. This research aims to analyze the literature about the low prevalence of breastfeeding, the introduction of early milk in the baby's diet and the development of food allergies. It is an integrative review of the literature. The search was performed in the databases Lilacs, Pubmed, Science Direct, Capes and VHL, with descriptors previously listed between the years 2008 to 2017. The inclusion criteria were articles online, available in full and published in Portuguese, English and Spanish, obtaining a sample of 11 articles. A critical examination of each research was made, separating them into four different categories so as to make it possible to analyze and answer the guiding question of this study. In view of this, we identified the need for further studies on the subject in order to guide and / or update health professionals in the maintenance of breastfeeding in infants with nutritional restrictions.

Key words: breastfeeding; infant nutrition; milk hypersensitivity.

RESUMO:

O aleitamento materno é considerado um recurso fundamental para promoção da saúde nutricional da criança, com repercussões ao longo da vida. A introdução de alimentos precocemente à dieta infantil é fator de risco para o desenvolvimento de doenças crônicas, como a alergia à proteína do leite de vaca. Esta pesquisa tem como objetivo: analisar as publicações acerca da baixa prevalência do aleitamento materno, a introdução do leite precoce na dieta do bebê e o desenvolvimento de alergias alimentares.

Trata-se de uma revisão integrativa da literatura, a busca foi realizada nas bases de dados Lilacs, Pubmed, Science Direct, Capes e BVS, com descritores previamente elencados, entre os anos de 2008 a 2017. Foram utilizados os critérios de inclusão: artigos online, disponíveis na íntegra e publicada nos idiomas português, inglês e espanhol, obtendo uma amostra de 11 artigos. Foi feito um exame crítico de cada pesquisa, separando-as em quatro categorias diferentes de forma que tornasse possível a análise e resposta a pergunta norteadora deste estudo. Diante do obtido, identificou-se a necessidade de mais estudos sobre o tema, a fim de nortear e/ ou atualizar os profissionais de saúde na manutenção da amamentação em lactentes com restrições nutricionais.

Palavras-chave: aleitamento materno; nutrição do lactente; hipersensibilidade a leite.

RESUMEN:

La lactancia materna se considera un recurso fundamental para promover la salud nutricional del niño, con repercusiones a lo largo de la vida. La introducción de alimentos precozmente en la dieta infantil es un factor de riesgo para el desarrollo de enfermedades crónicas, como la alergia a la proteína de la leche de vaca. Esta investigación tiene como objetivo: analizar las publicaciones sobre la baja prevalencia de la lactancia materna, la introducción de la leche precoz en la dieta del bebé y el desarrollo de alergias alimentarias. Se trata de una revisión integrativa de la literatura, la búsqueda fue realizada en las bases de datos Lilacs, Pubmed, Science Direct, Capes y BVS, con descriptores previamente enumerados, entre los años 2008 a 2017. Se utilizaron los criterios de inclusión: artículos en línea disponible en su totalidad y publicado en portugués, inglés y español, la obtención de una muestra de 11 artículos. Se hizo un examen crítico de cada investigación, separándolas en cuatro categorías diferentes de forma que hiciera posible el análisis y respuesta a la pregunta orientadora de este estudio. Ante lo obtenido, se identificó la necesidad de más estudios sobre el tema, a fin de orientar y / o actualizar a los profesionales de salud en el mantenimiento de la lactancia materna en lactantes con restricciones nutricionales.

Palabras clave: lactancia materna; nutrición del lactante; hipersensibilidad a la leche.

INTRODUCTION

The initial phases of life are of extreme importance for human development, which suffer influences of nutritional factors and metabolic determinants for a healthy growth and development. These habits acquired resonate until adulthood and cause implications on health status^(1,2).

In this context, breastfeeding is considered as the wisest natural strategy of protection, bond and child nutrition. It is a valuable intervention for the reduction of morbidity/mortality, contributing to the prevention of intestinal diseases, respiratory, allergic and metabolic diseases⁽²⁾.

In spite of the efforts and scientific evidence demonstrating the dominance of human milk at the expense of other foods, the prevalence rates of breastfeeding, especially exclusive breastfeeding, are still unsatisfactory, if compared to the recommendations of the World Health Organization (WHO)^(2,3). In 2009, a survey conducted by the department of programmatic actions says that the median of exclusive breastfeeding in Brazilian capitals, was 1.8 months and 11.2 months, breastfeeding and a prevalence rate for exclusive breastfeeding (EBF) of 36.6%, since it may indicate the early food introduction (EFI)^(4,5).

The introduction of other foods in the diet of infants is a critical phase by the high susceptibility to lead the child to the nutritional deficit and the development of infectious diseases and food allergies⁽⁶⁾.

The first and most frequent food started early to the baby's diet are the preparations of cow milk^(7,8), which bring to the fore the scenario of food allergies, in particular, the allergy to cow's milk protein (ACMP).

The ACMP is defined as an adverse immune response to antigens present in cow's milk, their signs and symptoms usually present themselves in the first year of life, after weaning and/or after their first exposure⁽⁹⁾.

The ACMP has been widely commented upon in recent times. Its prevalence rate has doubled in the last century and had an increase of approximately 20% in the last decade. Some studies bring a prevalence of 2 to 5% among infants younger than 1 year, but the rates of sub diagnosis are still high, reaching 15%^(10,11).

The differential diagnosis for other pathologies is important, due to the specificity of symptoms, which can present with abdominal cramps, vomiting, diarrhea, skin rashes and respiratory impairment^(10,11).

In this context, it is understood the need for activities that encourage breastfeeding, timely, as a measure of health promotion and disease prevention. In this way, the Ministry of Health (MOH) launches hand strategies to promote, protect and support breastfeeding^(12,13). The creation of the Breastfeeding Friendly Basic Health Unit, with the release of "10 Steps to Successful Breastfeeding", as well as the Network Breastfeeds Brazil, both deployed in Primary Care (PC), confirm the importance of the stimulus to the practice in this scenario, with an increase in the prevalence of EBF in the studied population^(12,13).

In the presence of these initial considerations presented, emerged the following guiding question: What are the causes listed in national and international scientific articles about the early complementary feeding and the risk of allergies? Thus, this study aims to analyze the publications about the question of introducing early feeding and the risk of developing food allergies.

MATERIALS AND METHODS

It is an integrative literature review, which is a methodological resource subsidized by evidence-based practice (EBP), which enables and facilitates the critical evaluation and the applicability of scientific studies, in the practice of care to the patient/client/user⁽¹⁴⁾.

For the development of this review, it was used as a parameter the steps referred to by Mendes, Silveira and Galvão⁽¹⁵⁾, began with the elaboration of the guiding question of this study, in sequence, the search of literature in the main data bases for national and international health, subsequently became the collection of data, the critical reading of the material caught, evaluation, categorization of content and finally, the analysis and understanding of the selected studies.

The search of the material was performed online in large databases, such as the Latin American and Caribbean Literature in Health Sciences (Lilacs), US National Library of Medicine, National Institutes of Health (Pubmed) and Science Direct, at the portal of the Coordination of Improvement Higher Education Staff (Capes) and on the Virtual Health Library (VHL).

For the selection of the sample, we used the following inclusion criteria: articles online, available in their entirety, published in Portuguese, English and Spanish, in the period between 2008 and 2017 and that beheld the chosen subject to be studied. There were excluded: review of the literature, theses, dissertations, letters to the reader and editorials.

The data were collected during the month of January 2018. As a research strategy we used the descriptors in Health Sciences (DeCS): “breastfeeding”, “hypersensitivity to milk”, “infant nutrition”, in order to associate the 3 descriptors and their possible combinations, in Portuguese and English, by the union of the Boolean operator “AND”. As a result, we found 50 articles in total, of which 11 comprised the sample.

To facilitate the collection of data, it has been using a previously validated instrument, directed to Integrative reviews(12), whereas the items: Identification: The title of the article, authors, year of publication, language, country of publication and the publication; Methodological Characteristics of the study: publication type and goals, added the information: the context of the study. These items were grouped in the software Microsoft Office Excel 2010. The data obtained were organized in tables and in thematic categories and interpreted based on scientific literature.

The articles were classified into 4 categories: “Breast milk: protective effect against allergies and stimulating growth factor”; the second: “The feeding practice and the development of allergies”; the third: “The influence of habits in the cow’s milk protein allergy” and the fourth entitled: “Perinatal factors associated with cow’s milk protein allergy”.

RESULTS

The sample for this study was composed by 11 articles from the last 10 years; being 2010 and 2015 with a higher prevalence of publications about the theme investigated, making up 27.27% of the sample.

About the scientific sources, the Latin American and Caribbean Literature in Health Sciences (Lilacs) and the Library BVS, apprehended 27.27% of the “n” of the sample. With respect to the languages, 72.72% were written in English, marking of the prevalence of English language and the low representativeness of studies published in the Portuguese. As the country of realization of researches, these varied in China, Chile, Denmark, UK, USA, Japan, India and Israel, all of them contributed an article for percentage of 9.09% and Brazil with 18.18%.

The professional category that most published on the theme were doctors, with 81.81%, followed by nutritionists. Pointing out the lack of studies of other professional classes, the example of nursing, so this group and necessary in direct assistance to breastfeeding and its particularities.

Another point to be considered is the context, the absolute majority (100%) of them is from hospital studies, and there is no occurrence, in this study, of research conducted in primary health care.

What concerns to the design methodology of research, highlighted the prospective cohort and cross-sectional studies with 36.36%.

Table 1- Distribution of the studies according to year of publication, language, country of publication, of publication, realization of the study context and type of publication (N=11).

Year of Publication	Articles	Percentages
2016	2	18.18%
2015	3	27.27%
2013	2	18.18%
2011	1	9.09%
2010	3	27.27%
Total:	11	100%
Database	Articles	Percentages
BVS	3	27.27%
Capes	2	18.18%
Lilacs	3	27.27%
Pubmed	2	18.18%
Science Direct	1	9.09%
Total	11	100%
Language	Articles	Percentages
English	8	72.72%
Portuguese	1	9.09%
Spanish	2	18.18%
Total:	11	100%
Country	Articles	Percentages
Chile	1	9.09%
China	1	9.09%
Denmark	1	9.09%
United Kingdom	1	9.09%
USA	1	9.09%
Ukraine	1	9.09%
Brazil	2	18.18%
Mexico	1	9.09%
Israel	1	9.09%
Taiwan	1	9.09%
Total:	11	100%
Area	Articles	Percentages
Medicine	9	81.81%
Nutrition	2	18.18%
Total:	11	100%
Context of the Study	Articles	Percentages
Hospital	11	100%
Primary Health Care	0	0%
Total:	11	100%
Publication Type	Articles	Percentages
Retrospective cohort	2	18.18%
Prospective cohort	4	36.36%
Experimental study	1	9.09%
Cross-sectional study	4	36.36%
Total:	11	100%

As to the objectives proposed by the publications, 02 articles composed the Category I: “Breast milk: protective effect against allergies and stimulating factor of growth”, 4 the Category II: “The feeding practice and the development of allergies”, 4 The Category III: “The influence of habits in the cow’s milk protein allergy” and only 1 Category IV: “Perinatal factors associated with cow’s milk protein allergy”, presented in the following schedules:

Schedule 1- Distribution of Category I items, according to the authors, title and objective of the publications.

Category I	Breast milk: protective effect against allergies and growth stimulant factor	
Authors	Title	Objective
Gitte Zchariassen	Nutrition, growth and allergic diseases among very preterm infants after hospital discharge	Evaluate the effect of adding fortifier to the breast milk for premature babies after discharge.
Chih-Yung Chiu, Sui-Ling Liao, Kuan-Wen Su, Ming-Han Tsai, Man-Chin Hua, Shen-Hao Lai ,et al.	Exclusive or partial breastfeeding for 6 months is associated with reduced milk sensitization and risk of eczema in early childhood	Determine the impact of different breastfeeding patterns in the development of atopic diseases from birth to 4 years of age.

Schedule 2- Distribution of articles of Category II, according to the authors, title and objective of the publications.

Category II	The nutrition practice and the development of allergies	
Authors	Title	Objective
Grimshaw KEC, Maskell J, Oliver EM, Morris RCG, Foote KD, Mills ENC, et al.	Introduction of complementary foods and the relationship food allergy.	Address issues relating to breastfeeding, complementary feeding, development of allergies and current infant feeding recommendations.
Silva LMP, Venâncio SI, Marchioni DML.	Complementary feeding practices in the first year of life and associated factors.	Investigate complementary feeding practices and the factors associated with the early introduction of complementary foods in children under 1 year old.
Caetano MC, Ortiz TTO, Silva SGL, Souza FIS, Sarni ROS.	Complementary feeding: inappropriate practices in infants.	Evaluate the practices and food consumption of healthy infants, between 4 and 6 months.
Cai L, Yu P, Zhang Y, Yang X, Li W, Wang P.	Effect of feeding pattern on infant illness in Chinese cities.	Investigate the effect of different feeding patterns in the occurrence of disease among infants.

Schedule 3- Distribution of articles of Category III, according to the authors, title and objective of the publications.

Category III	The influence of dietary habits on allergy to cow’s milk protein	
Authors	Title	Objective
Jarvinem KM, Westfaal JE, Seppo MS, James AK, Tsuang AJ, Feustel PJ, et al.	Role of maternal elimination diets and human milk IgA in development of cow’s milk allergy in the infants.	Evaluate the evasion of cow’s milk of maternal diet during breastfeeding with specific levels of IgA and development of cow’s milk allergy in infants.

Katz Y, Rajuan N, Goldberg MR, Eisenberg E, Heyman E, Cohen A, et al.	Early exposure to cow's milk protein protective against Ige-mediated cow's milk protein allergy.	To determine the prevalence, cross-reactivity with soy allergy and risk factors for APLV.
Errazuriz G, Lucero Y, Ceresa S, González M, Roussel M, Vives A.	Clinical features and management of infants under 1 year old with suspected allergy to cow's milk protein.	Describe demographic characteristics, and the clinical management of children under 1 year old with suspected APLV.
Ivakhneco O, Nyankovskyy S.	Nutritional status of babies and influence unmodified cow's milk on allergic reactions according to the epidemiological study from Ukraine.	Examine the peculiarities of nutrition of babies in Ukraine, to estimate the initial impacts of frequent consumption of cow's milk proteins, food hypersensitivity and allergic reactions in young children within two years old.

Schedule 4- Distribution of articles of Category IV, according to the authors, title and objective of the publications.

Category IV	Perinatal factors associated with allergy to cow's milk protein	
Authors	Title	Objective
Monjaraz EMT, Mayans JAR, Bustamante RC, Morales EG, Rosales AM, Barrios EM, et al.	Perinatal factors associated with the development of allergy to cow's milk protein.	Assess whether there is any association between the development of allergy to cow's milk proteins and the use of antimicrobials in the perinatal period, prematurity, type of birth and decreased prevalence of breastfeeding.

DISCUSSION

On the "Breast milk: protective effect against allergies and stimulating growth factor", the publications listed corroborate on the numerous benefits of breastfeeding in the prevention of diseases, in the various stages of the infants' life, especially those that occur concomitantly with allergic symptoms^(16,17).

The risk to develop allergic symptoms, such as eczema is portrayed in a study which specifies that children on exclusive breastfeeding until the sixth month of life have a lower risk of developing this symptomatology, in comparison with the partially breastfed infants, which has a higher risk for rashes⁽¹⁷⁾.

The protective factor against allergies is explained by the fact that breast milk is rich in varied compounds such: factors of humoral immunity and biologically active molecules that assist in the development and maturity of the baby⁽¹⁸⁾.

Another finding of human milk, in which concerns its ability to provide organic factors of ascension, is in the presence regulatory T cells, involved in maintaining the balance of the intestinal microbiota and cytokines/growth factors, which contribute to promote the maturation of the intestinal mucosa, impairing the penetration of pathogens⁽¹⁷⁾.

This assumption is reinforced by assigning a large part of this importance the presence of long-chain polyunsaturated fatty acids, which act in the production of defense cells (T37) in the infant's body⁽¹⁹⁾.

About the growth of children who were breastfed exclusively grow faster compared with those who have predominant breastfeeding and consumed infant formula. However those who use exclusively the infant formulas have the lowest rates of growth, demonstrating that there is a direct influence between the feeding practices and the growth factor of children in the first and second month of life⁽²⁰⁾.

Based on these facts, it is possible to identify the importance of incentive to exclusive breastfeeding until the sixth month of life in preterm and term. Its properties of health protection and disease prevention, are strongly based and ratified, attentive to the need for greater investment in policies for the promotion of breastfeeding.

When dealing with the “Feeding Practice and the development of allergies”, submitted articles emphasize on the erroneous feeding practices and the consequences for health.

It is known that breastfeeding should be kept until the 6 months of life. Later, other foods should be introduced gradually, complementing the breastfeeding and diet of infants⁽²⁾.

The early introduction of foods other than human milk, in feeding the infant, before the stage of maturation of the organism brings harmful consequences to their health, to the detriment of a reduced ingestion of protective factors present in human milk^(6,8).

These erroneous eating practices increase the risk for development of acute and chronic diseases such as: diarrhea, food allergies, with involvement of the plural of systems and metabolic diseases. These findings were reported by the majority of articles in this category⁽⁶⁻⁸⁾ and are also identified, in a survey conducted in 2013, on the question of early weaning, which brings that 41.2% of infants in their sample, developed some chronic pathology, at the expense of food error⁽²¹⁾.

The authors argue that the damages are intensified from the age and type of food inserted, as ratifies a study conducted in the United Kingdom⁽⁸⁾ found that babies exposed to solid food between 12 and 16 weeks developed food allergies⁽⁸⁾, while a cross-sectional study identified that 1/3 and 1/4 of the children participating in the research, received fruit juice and porridge, fruit or soup for 4 months, respectively, making association of increased risk for cardiovascular diseases and obesity and complementary feeding before 6 months of life⁽⁶⁾.

Another important point to be highlighted in the context of introducing early food, is the interruption of breastfeeding. Low levels of prevalence of breastfeeding were found in studies of this category, as for example, a study with a sample of 1,176 children, only 15% were being exclusively breastfed at 4 months of age and 34% received breast milk predominantly, by completing 6 months old and only 5% were on exclusive breastfeeding, while 13% were classified in predominant breastfeeding⁽⁶⁾.

In that heart to early weaning, some reasons reported by the mothers as justification were: the low milk production (16.7%) and the refusal of the child (8.4%). In the same study, mothers brought to the feeding practices adopted by them, were based in the first place, their own experience or their family (67.6%) and only then in professional guidelines⁽⁷⁾. Concordant scenario was seen in the study participants in 2013 that in addition to these two justifications, mothers add not have nipple favorable to breastfeeding⁽²¹⁾.

Even in the face of difficulties faced by mothers, it is notorious that human milk provides the necessary nutrients to the full development of the baby, including their oral tolerance, due to the presence of factors immunomodulators, reflecting on an important protective effect against allergies. In this way, keeping breastfeeding simultaneously the introduction of solid food and cow milk at an opportune moment, has been confirmed as a strategy beneficial to development⁽⁸⁾. These are guidelines that health professionals can use to enrich the dialog with the caregivers.

Thus it is revealed that the low prevalence of breastfeeding, the early introduction of cow milk and solids to babies' diets, coupled with the revelation that mothers do not follow the guidelines professionals as the main orientation when will start the introduction of food will result in a greater exposure of these children the total diseases and allergies, including food. Realizes the need to strengthen the links between health professionals and families with the aim of providing greater confidence in the guidelines about the importance of exclusive breastfeeding and the correct start of introduction of food, in actions and education services for health promotion and disease prevention.

It is noteworthy that, as there is the early introduction of food or milk different from human can result in nutritional and immunological risk to the health of the baby. When this milk is derived from cow's milk, an allergy commonly presented is the allergy to cow's milk protein- APLV (in Portuguese), the authors bring different perspectives on: "The influence of habits in the cow's milk protein allergy".

Research carried out in cities of Ukraine, says that the premature insertion of cow's milk proteins in the feeding infants, can cause hypersensitivity reactions and allergies. Even identified that 11% of children in the sample were exposed to cow's milk proteins during the first year of life, as main food or supplement, with an average age for introduction between 1.7 and 7.9 months of age⁽¹¹⁾.

With increasing prevalence rates of 17.04% in group 1 (children who do not come into contact with the cow's milk proteins during the first and second year of age), 49.2% for the second group (children receiving cow milk during the first year of life) and 51.52% for the group 3 (children that fed cow's milk in the first and second year of life, the authors confirm the association between the use of cow milk and food allergic reactions, for example APLV, as well as atopic diseases and rashes^(11,22).

Starting in against two other studies^(23,24), bring another point of view regarding the introduction of cow's milk protein, in the diet of the baby. A prospective cohort study one of the authors assess the levels of IgA in human milk, in the light of the withdrawal of cow's milk proteins in the diet of the mother⁽²²⁾ and the other, discusses the risk factors for the development of APLV, mediated by IgE, using the introduction of protein in the diet of infants, as evaluative method⁽²⁴⁾.

To evaluate the actions of milk protein, mothers were separated into three groups, the first with the exception of cow's milk protein in the first 3 months of lactation, the second group, withdrew the protein from the diet of breastfeeding, with more than 3 months of breastfeeding and the third group, made no restriction of maternal diet⁽²³⁾.

Of the 37 mothers who initiated the limitation in the first 3 months of breastfeeding, 16 babies had immediate, delayed APLV 16 and only 5 had no APLV. Already in the 49 mothers who established the elimination with more than 3 months of lactation, 27

infants had APLV of immediate and delayed type 15, only 7 were not diagnosed with the allergy⁽²³⁾.

Among the 59 mothers participating in the study, which does not have any restriction in the diet, none of the infants presented APLV, demonstrating in this way, the non-respect of the introduction of protein in the diet with the development of allergy⁽²³⁾.

Given that reiterates the idea advocated by the authors that added the low prevalence of allergies in breastfed children without dietary restriction of the mother, the levels of IgA and IgG are lower in the milk of lactating women who have restriction, when compared to mothers who did not do it, with a p value of $p = 0.019$ and 0.047 , respectively⁽²³⁾.

The premise is explained by the authors, using the hypothesis that reduced rates are given by the lack of antigenic stimulation during breastfeeding, considering its occurrence is common in the presence of allergenic foods in the diet of the mother, due to suspicion of food allergy in infants⁽²¹⁾. Suggesting that the exposure of breastfeeding, cow's milk in the first months of life, may represent a window of opportunity for the induction of oral tolerance^(23,24).

The difficulty in finding can be related to the symptoms of food hypersensitivity are often unspecific, they present themselves as 63% of their sample of gastroesophageal reflux (GER) and 49%, colic. The symptoms begin around 1.5 and 2 months of age, time which coincides with the beginning of the use of infant formula based on cow's milk⁽¹⁰⁾.

In the suspicion of hypersensitivity to milk, it is important to investigate the history of atopy and in first-degree relatives, food allergies, in view of the genetic predisposition to this condition⁽¹⁰⁾. It is also important, emphasizing the relevance of detailing the age of onset of symptoms, time between ingestion and manifestation of reactions, quantity of food consumed, type of physical manifestations and duration of symptomatic⁽²⁵⁾.

To assist in the confirmation or discard of APLV, launches the hand of some resources, and the oral provocation test (TPO) is designed as a main reference⁽¹⁰⁾. Despite this, there is controversy in the use of other complementary tests, such as test of specific IgE and skin prick test, which does not confirm the diagnosis of APLV, because of their low predictive value⁽²⁵⁾.

Another important difficulty in establishing the correct diagnosis is the high cost for the realization of the TPO and alternatively a publication of 2010 used the response to the exclusion diet only and then TPO, in the study. Identifying that 14% and 26% of participants, achieved significant response for diagnostic confirmation, respectively⁽¹⁰⁾.

As reported above, studies of this category of analysis are still not so well represented in the academy, in quantitative terms, demonstrating that it is still necessary to greater dedication on the theme, which has scientific relevance, making it possible to establish relationships and associations to base the decision of therapeutic decisions. Faced with this situation, the correct diagnosis of food allergies is fundamental in the therapeutic driving of infant and family, avoiding unnecessary behaviors that can bring harm to your health and family context.

Before the relevance of the theme of APLV, it is worth mentioning that there are “perinatal factors associated with cow’s milk protein allergy”.

The use of antimicrobial agents is one of these factors and has a relationship with the prematurity, the type of delivery, the low prevalence of breastfeeding and the development of APLV⁽²⁴⁾. Some associations were identified by determining the increase in risk to APLV: like the fact that the mother has done antibiotic therapy in the last trimester of pregnancy, increasing the risk of children develop the APLV. The author explains that the risk exists, due to the occurrence changes in intestinal microbiota of the mother-baby, changing the immune response, reducing the levels of cytokines that promote intestinal tolerance to such allergens⁽²⁶⁾.

Another relationship established is around the time duration of breastfeeding, in which it was observed that the group of APLV had an average duration of 2.2 months, versus the 5.9 months of breastfeeding in the control group⁽²⁶⁾. Another study recognizes that there are significantly different values for the duration of breastfeeding in infants of eutocic birth and cesarean, with average time of 11.11 months, and 5.79 months, respectively. Bringing to the fore the reflection on the association between type of birth and duration of breastfeeding, which constitutes a risk factor for the development of allergy, due to less contact with immunological factors present in human milk⁽²⁷⁾.

The type of birth by cesarean section was also proposed as one of the risk factors for food allergies⁽²⁴⁾. The relationship between the type of birth and development of allergies, especially food, was cited in a study where 12 children born from cesarean labor presented allergies and only 2 born from eutocic childbirth developed some type of allergic reaction⁽²⁷⁾.

In this way, it is understood that there is the influence of perinatal factors for the development of allergies, in particular APLV and with the results of the publications in this category, again it is perceived breastfeeding as the single source of nutrients necessary for growth and full development of the infant. Highlights the importance of the correct diagnosis of food allergies, in order to avoid harmful conduct, as well as a burden to the health system and/family responsible for the cost of the treatment.

CONCLUSION

To ensure an adequate nutrition of the babies, encouraging breastfeeding and the correct introduction of complementary feeding, with the aim of ensuring a healthy growth and development and avoid food allergies and/or related to cow’s milk protein, it is necessary to follow the rules and parameters of organs such as the health authorities in the national and international context.

It is worrying that there is not any study in the sample conducted in Primary Health Care, what reforms of the need to develop more studies in this level of attention, as well as promoting closer links between health professionals and families, so that it is held the incentive to exclusive breastfeeding until six months of life and adequate complementary feeding.

Given the above, it becomes necessary the expenditure and dedication of more studies with respect to risk factors for food allergies, in particular, cow’s milk protein

allergy and the important maintenance of breastfeeding, faced with the risk of food allergic reactions.

It is still necessary a greater encouragement to public policies for the promotion of breastfeeding, including in pathological situations, in view of the wide range of benefits of the same.

REFERÊNCIAS

1. Bortolini GA, Gubert MB, Santos LMP. Consumo alimentar entre crianças brasileiras com idade de 6 a 59 meses. *Cad. Saúde Pública*. 2012; 28(9): 1759-1771.
2. Ministério da Saúde (BR). Saúde da criança: aleitamento materno e alimentação complementar: Caderno de atenção básica. Brasília: Ministério da Saúde; 2015.
3. Sena MCF, Silva EF, Pereira MG. Prevalência do aleitamento materno nas capitais brasileiras. *Rev Assoc Med Brasileira*. 2007; 53(6): 520-524.
4. Ministério da Saúde (BR). II Pesquisa de Prevalência de Aleitamento Materno nas Capitais Brasileiras e Distrito Federal. Brasília: Ministério da Saúde; 2009.
5. Boccolini CS, Boccolini PMM, Monteiro FR, Venâncio SI, Giugliani ERJ. Tendência de indicadores do aleitamento materno no Brasil em três décadas. *Rev Saúde Pública*. 2017; 51: 1-9.
6. Silva LMP, Venâncio SI, Marchioni DML. Práticas de alimentação complementar no primeiro ano de vida e fatores associados. *Rev Nutrição*. 2010; 23(6): 983-992.
7. Caetano MC, Ortiz TTO, Silva SGL, Souza FIS, Sarni FOS. Complementary feeding: inappropriate practices in infants. *J Pediatría*. 2010; 86(3): 196-201.
8. Grimshaw KEC, Maskell J, Oliver EM, Morris RCG, Foote KD, Mills ENC, et al. Introduction of Complementary Foods and the Relationship to Food Allergy. *Pediatrics*. 2013; 132(6): 1529-1538.
9. Saarinen KM, Juntunen-Backman K, Järvenpää AL, Kuitunen P, Lope L, Renlund M, et al. Supplementary feeding in maternity hospital and the risk of cow's milk allergy: A prospective study of 6209 infants. *J Allerg Clin Immunology*. 1999; 104(2): 457-461.
10. Errázuriz G, Lucero Y, Ceresa S, Gonzalez M, Rossel M, Vives A. Características Clínicas y manejo de lactantes menores de 1 año com sospecha de alergia a proteína de leche de vaca. *Rev Chil Pediatría*. 2016; 87(6): 449-454.
11. Ivakhnenko O, Nyankovskyy S. Nutritional status of babies and influence of unmodified cow's milk on allergic reactions according to the epidemiological study from Ukraine. *Pol Pediat Society*. 2013; 88: 138-143.
12. Souza MT, Silva MD, Carvalho R. Revisão Integrativa: o que é e como fazer. *Einstein*. 2010; 8(1): 102-106.
13. Mendes KDS, Silveira RCCP, Galvão CM. Revisão integrativa: método de pesquisa para a incorporação de evidências na saúde e na enfermagem. *Texto Context Enfermagem*. 2008; 17(4): 758-764.
14. Zachariassen G. Nutrition, growth, and allergic diseases among very preterm infants after hospital discharge. *Dan Med Journal*. 2013; 60(2): 1-36.
15. Chiu CY, Liao SL, Su KW, Tsai MH, Hua MC, Lai SH, et al. Exclusive or partial breastfeeding for 6 months is associated with reduced milk sensitization and risk of eczema in early childhood. *Md journal*. 2016; 95(15): 1-6.

16. Hakansson AP. Protective effects of human milk antimicrobial peptides against bacterial infections. *Jorn Pediatría*. 2015. 91: 4-5.
17. Tinoco SMB, Sichieri R, Moura AR, Santos FS, Carmo MGT. Importância dos ácidos graxos essenciais e os efeitos os ácidos graxos trans do leite materno para o desenvolvimento fetal e neonatal. *Cad Saúde Pública*. 2007; 23(3): 525-534.
18. Fonseca PCA, Carvalho CA, Ribeiro SAV, Nobre LN, Pessoa MC, Ribeiro AQ. Determinantes da velocidade média de crescimento de crianças até 6 meses de vida: um estudo de coorte. *Cienc & Saúde Coletiva*. 2017; 22(8): 2713-2726.
19. Araújo JP, Almeida JLS, Souto CMRM, Oliveira AEA, Sudério MARP. Desmame precoce e suas causas: experiência na atenção básica de Campina Grande-PB. *Rev Univ Vale do Rio Verde*. 2013; 11(2): 146-155.
20. Schingaglia RM, Oliveira AC, Sousa LM, Martins KA. Práticas alimentares e fatores associados à introdução precoce da alimentação complementar entre crianças menores de seis meses na região noroeste de Goiânia. *Epidemiol Serv Saúde*. 2015; 24(3): 465-474.
21. Järvinen KM, Westfall JE, Seppo MS, James AK, Tsuang AJ, Feustel PJ, et al. Role of maternal elimination diets and human milk IgA in development of cow's milk allergy in the infants. *Clin Exp Allergy*. 2015; 44(1): 69-78.
22. Katz Y, Rajuan N, Goldberg MR, Elisenber E, Heyman E, Cohen A, et al. Early exposure to cow's milk protein is protective against IgE-mediated cow's milk protein allergy. *J Allergy Clin Immunology*. 2010; 126: 77-82.
23. Filho WR, Scalco MF, Pinto JA. Alergia à proteína do leite de vaca. *Ver Med Minas Gerais*. 2014; 24(3): 374-380.
24. Monjaraz EMT, Mayans JAR, Bustamante RC, Morales EG, Rosales AM, Barrios EM, et al. Factores perinatales asociados al desarrollo de alergia a las proteínas de la leche de vaca. *Rev Gatsro de México*. 2015; 80(1): 27-31.
25. Rodrigues SML. O impacto do parto eutócico versus cesariana eletiva na amamentação e introdução de alimentos complementares, na incidência de patologias e no desenvolvimento de competências nas crianças até aos dois anos de idade[tese]. Braga: Universidade do Minho; 2014.
26. Alves ALN, Oliveira MIC, Moraes JR. Iniciativa Unidade Básica Amiga da Amamentação e sua relação com o aleitamento materno exclusivo. *Rev Saúde Pública*. 2013; 47(6): 1130-1140.
27. Pereira RSV, Oliveira MIC, Andrade CLT, Brito AS. Fatores associados ao aleitamento materno exclusivo: o papel do cuidado na atenção básica. *Cad Saúde Pública*. 2010; 26(12): 2343-2354.

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