Correlation between early weaning and milk protein allergy

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ABSTRACT
Exclusive breastfeeding is recommended until 6 months by the World Health Organization (WHO). However, many mothers, within their respective scenarios and needs, opt for early weaning, which can have consequences, such as allergy to cow's milk protein (CMPA). CMPA is characterized by an immune-mediated adverse reaction to food protein, and the clinical manifestations can be diverse. Briefly, breastfeeding influences CMPA through the gut microbiota.Thus, the effects of early weaning associated with cow's milk protein allergy will be addressed in this work, including the pathophysiological aspects, diagnosis and treatment, in order to show the relevance of the association of both factors.

Keywords: Breastfeeding, World Health Organization (WHO).

1 INTRODUCTION

Exclusive breastfeeding is recommended until 6 months by the World Health Organization (WHO). However, many mothers, within their respective scenarios and needs, opt for early weaning, which can have consequences, such as allergy to cow's milk protein (CMPA). CMPA is characterized by an immune-mediated adverse reaction to food protein, and the clinical manifestations can be diverse. Briefly, breastfeeding influences CMPA through the gut microbiota.Thus, the effects of early weaning associated with cow's milk protein allergy will be addressed in this work, including the pathophysiological aspects, diagnosis and treatment, in order to show the relevance of the association of both factors.

2 OBJECTIVE

To conduct a literature review correlating early weaning together with the manifestations of allergy to milk protein, in order to better understand the cause-of-consequence relationship between both factors.

3 METHODOLOGY

This work will be carried out through the reading and systemic analysis of several bibliographies in order to make the correlation between early weaning and pediatric patients who presented allergy to milk protein in the face of such a situation. In addition to corroborating with numerical data that will be collected through public databases so that a better notion of the real number of patients who are affected by early

weaning and end up developing allergy to milk protein is obtained, thus making the research something more tangible, bringing the importance of the junction between the literature review and the numerical data.

4 DEVELOPMENT

Breastfeeding is one of the most important ways for the healthy development of newborns. Exclusive breastfeeding for a period of six months is currently recommended by the World Health Organization (WHO) as the best feeding option for babies. However, many mothers, within their respective scenarios and needs, opt for early weaning, which can have serious consequences on their children's health, one of them being cow's milk protein allergy (CMPA). During this initiation we will address the relationship between these two factors, since CMPA is a pathology of great relevance and not always easy to diagnose. This paper will address the effects of early weaning associated with cow's milk protein allergy, including pathophysiological aspects, diagnosis and treatment. To this end, the results of research and scientific studies that address the topic will be presented.

It is important to remember that breastfeeding is not only extremely nutritious, but also essential for the development of the newborn's immune system. Therefore, when interrupted before the recommended period, one of the risks that the baby runs is precisely to develop CMPA, which in turn can present cutaneous, gastrointestinal and respiratory manifestations, leading not only to the discomfort of the newborn, but also to generalized stress on the part of the caregivers, also affecting the psychological and structural sphere of the environment. This is because CMPA is one of many types of pathologies that can be developed by the baby, such as: lactose intolerance, gastroesophageal reflux disease, celiac disease, and even allergies to specific foods.

Faced with so many possibilities, it is necessary that the signs and symptoms presented by the NB be carefully investigated, in the case of CMPA, cases with only respiratory symptoms may occur, making the diagnosis more thorough. Another aspect that should be addressed during this analysis is the duration of the investigation, since many children need to follow a specific diet in which the indication is that cow's milk, as well as its derivatives, be completely removed from the diet for a specific period of time. This process can cause a certain strangeness not only on the part of the child who is already accustomed to his current diet, but also on the part of the caregivers, since the expenses are a little higher when it comes to products that do not depend on cow's milk for their manufacture.

Thus, the relationship between weaning and the number of associated CMPA cases will be addressed in this study, since it has great impacts on the general scenario of the family and needs to be approached in an assertive and multidisciplinary way. The aim is to show the relevance of breastfeeding, associated with CMPA prevention, within primary care, in addition to a more focused view of the diagnosis process, which can be time-consuming and expensive.

Supporting the above, breastfeeding is an essential factor for the growth and development of the baby, specifically in the first six months of life (BOCCOLINI, et al., 2017). Breastfeeding is the period in which not only the newborn's immune system develops, but also the mother-baby relationship, given its importance, it should be noted that breast milk is made up of different components, among them: vitamins, minerals, proteins, fats, carbohydrates and antibodies (OLIVEIRA, CARIELLO and DINELLY, 2016).

Therefore, it is scientifically proven that breast milk is sufficient for the complete nutrition of the newborn up to 6 months of age. Bringing once again the importance of completing this feeding cycle with breast milk by the specified period. In addition, the benefits also extend to the mother herself, since the act of breastfeeding has the following advantages: prevention of uterine and breast cancer, weight reestablishment, less postpartum bleeding, in addition to avoiding osteoporosis and cardiovascular diseases (ROCHA, et al.. 2018).

During the act of breastfeeding, the baby sucks, a process that contributes to the development of the digestive system, in addition to sharpening reflexes and improving the baby's immune system. Therefore, it is extremely important that breastfeeding is done not only during its determined period of six months, but also with the correct technique of sucking and latching on to the breast, so that the newborn can achieve not only adequate nutrition, but also all the benefits that it brings.

Cow's milk protein allergy (CMPA) is characterized by an immune-mediated adverse reaction to food protein. And it is the most common food allergy in childhood, affecting 2 to 3% of infants in the first year of life and 1.4 to 3.8% of children under 3 years of age. This is due to the fact that cow's milk proteins are the first food antigens to be introduced into the newborn's diet. (BURNS et al., 2017; ZEPEDA-ORTEGA et al., 2021).

The clinical manifestations of CMPA are diverse, and are dependent on the allergic mechanisms involved, which may be: IgE-mediated CMPA, non-IgE-mediated CMPA, and mixed CMPA). Unmediated IgE is the most predominant form, with its pathophysiology based on the hypersensitivity reaction mediated by T lymphocytes, and may manifest different clinical syndromes: enterocolitis, proctocolitis/allergic colitis, and food-induced enteropathy. (BURNS et al., 2017).

Enterocolitis and feed-protein-induced enteropathy are the most associated with early introduction to cow's milk protein, and manifest within days, weeks, or months after weaning. The main associated clinical findings are: chronic watery and acidic diarrhea, vomiting, intestinal malabsorption associated with anemia, perianal erythema, abdominal distension, growth failure, and weight loss. (BURNS et al., 2017).

Synthetically, breastfeeding influences CMPA through the gut microbiota. Whereas, the microbiota of infants fed exclusively on breast milk is different from those fed on artificial breastfeeding. Breast milk is rich in prebiotic fibers (oligosaccharides) that participate in the formation of the microbiota, in addition to having bacteria (genera *Lactobacillus, Staphylococcus, Enterococcus and Bifidobacterium).* The

oligosaccharides present compose several molecular structures that promote the growth of specific bacteria, with extremely positive importance for the child's gastrointestinal tract. (FERNADES TF, 2018 apud SIQUEIRA, 2020)

In this context, the objective of this study project is to understand how the practice of early weaning can influence the triggering of cow's milk protein allergy (CMPA). It is of great importance in view of the upward trend in cases of allergy to PLV, as they may be associated with significant morbidity, with impairment in the child's survival and quality of life. (BURNS et al., 2017; SIQUEIRA et al., 2020)

5 FINAL THOUGHTS

At the end of this review, we can conclude that exclusive breastfeeding until 6 months of age is of paramount importance, since its absence, together with other intrinsic factors in pediatric patients, can bring results such as allergy to cow's milk protein. Newborn patients have an intestinal microbiota that is more sensitive to alterations, since their microbiota is not yet fully developed, in addition to adjacent factors that possibly interfered in its formation, such as: gestational age, mode of delivery, use of antibiotics by the mother during pregnancy.

Thus, it is important to emphasize that the existence of allergies is due to the diagnosis of symptoms such as: gastrointestinal, cutaneous, respiratory, circulatory disorders and anaphylaxis. In particular, allergy to cow's milk protein may also present intrinsic factors, i.e., heredity, and also extrinsic factors, i.e., the interruption of breastfeeding. The major problem is patients who present only non-characteristic symptoms such as respiratory disorders and deficiency in their formation, because their diagnosis ends up being extremely complicated and often takes a long time to resolve.

In addition to the difficult diagnosis, pediatric patients have great difficulty in changing their diet, which ends up affecting their acceptance of new foods, as well as their actual food introduction. We should also emphasize the treatment of these patients, which consists of removing from their diet all foods that may contain milk or traces of cow's milk, which results in a differentiated diet, more expensive for the family itself, and with several restrictions.

In addition, exclusive breastfeeding up to 6 months of age has been proven to be a protective factor not only for the non-development of allergy to cow's milk protein, but also for several other possible comorbidities, such as: reduction of the risk of early childhood obesity, better development of the immune system and consequently a decrease in the number of infections and allergies acquired by this patient. among others.

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