INTESTINAL CONSTIPATION IN INFANTS: INTEGRATIVE REVIEW

CONSTIPACIÓN INTESTINAL EN LACTANTES: REVISIÓN INTEGRATIVA

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ABSTRACT

Objective: to characterize the scientific production on intestinal constipation in infants, highlighting risk factors; clinical features; diagnosis and treatment modalities. Method: Integrative review of literature in LILACS, MEDLINE, WEB OF SCIENCE and CINAHAL, using the keywords: "infant", "intestinal constipation", "diagnosis", "therapeutic". Results: of the 19 selected articles, were available on the WEB OF SCIENCE (1 article), LILACS (11 articles), CINAHAL (4 articles) and MEDLINE (3 articles) with the largest number of publications in 2007 (21.05%), with higher prevalence of descriptive (52, 64%) and quantititative (73, 69%). Conclusion: Constipation can be classified as acute or chronic, the first associated with factors such as change of environment, diet and fever and the second one to the inadequate management of the acute stage. The diagnostic investigation is implemented by physical examination and with complementary form, in order to biochemical tests. Among the risk factors, it should be highlighted the constitutional characteristics and alimentary habits of the family. Descriptors: infant; Intestinal Constipation; Diagnosis; Therapeutic.

RESUMO

Objetivo: caracterizar a produção científica sobre constipação intestinal em lactentes, destacando fatores de risco, características clínicas, diagnóstico e modalidades de tratamento. Método: revisão integrativa de literatura nas bases de dados LILACS, MEDLINE, CINAHAL e WEB OF SCIENCE, empregando-se os descritores: “lactente”, “constipação intestinal”, “diagnóstico”, “terapêutica”. Resultados: dos 19 artigos selecionados estavam disponíveis na WEB OF SCIENCE (1 artigo), LILACS (11 artigos), CINAHAL (4 artigos) e MEDLINE (3 artigos) com o maior número de publicações em 2007 (21.05%), com maior prevalência para os descritivos (52, 64%) e quantitativos (73, 69%). Conclusão: a constipação pode ser classificada como aguda ou crônica, à primeira associada a fatores como mudança de ambiente, dieta e estado febril e a segunda ao manejo inadequado do estado agudo. A investigação diagnóstica é concretizada por meio do exame físico e de forma complementar tendo em vista testes bioquímicos. Dentre os fatores de risco destacaram-se as características constitucionais e hábitos alimentares dos familiares. Descritores: Lactente; Constipação Intestinal; Diagnóstico; Terapêutica.

RESUMEN

Objetivo: caracterizar la producción científica sobre estreñimiento intestinal en lactantes, destacando factores de riesgo, características clínicas, diagnóstico y modalidades de tratamiento. Método: revisión integrativa de literatura en las bases de datos LILACS, MEDLINE, CINAHAL y WEB OF SCIENCE, empleando los descritos: “lactantes”, “estreñimiento intestinal”, “diagnóstico”, “terapéutica”. Resultados: de los 19 artículos seleccionados, estaban disponibles en la WEB OF SCIENCE (1 artículo), LILACS (11 artículos), CINAHAL (4 artículos) y MEDLINE (3 artículos) siendo el mayor número de publicaciones de 2007 (21,05%), con mayor prevalencia para los descritivos (52, 64%) y cuantitativos (73,69%). Conclusión: el estreñimiento puede clasificarse como agudo o crónico, el primero está asociado a factores como cambio de ambiente, dieta y estado febril y el segundo a manejo inadecuado del estado agudo. La investigación diagnóstica se concreta por medio de la prueba física y de forma complementaria teniendo en cuenta las pruebas bioquímicas. Entre los factores de riesgo se destacan las características constitucionales y hábitos alimentarios de los familiares. Descriptores: Lactantes; Estreñimiento Intestinal; Diagnóstico; Terapéutica.
INTRODUCTION

In recent years there have been several definitions of intestinal constipation trying to provide greater specificity in diagnosis. Thus, the heterogeneity of criteria for the characterization of presence or absence of constipation makes prevalence estimates show increasing variability, beyond hindering the actual establishment of the diagnosis, since this disease begins early, in the first half of life of the infant or even from birth. It should be noted that lactation is the period of child development that lasts from two to 29 days of birth until two years old, succeeds the period of newborn (NB) and precedes the preschool period. This is a phase that deserves special attention by health professionals, aiming to reduce rates of child mortality and morbidity.1

The theme shows itself so much relevant, since the parents or health professionals do not value the symptoms resulting in delayed initiation of treatment and causing the emergence of complications. Studies show that when diagnosed, early, a clinical picture of intestinal constipation, the rates of successful treatment are visible and it is essential to know and control the peculiarities involved in this disease. Because of its high prevalence in recent years, the constipation in infants has been considered a public health problem, and thus it is necessary to establish and publicize actions, preventive and therapeutic measures in children.2

The chronic intestinal constipation is common problem in the pediatric population; it is estimated to be the main complaint in 3% of pediatric consultations in Primary Care and 25% in consultations in specialized outpatient clinics in pediatric gastroenterology.3

The prevalence of intestinal constipation in children has increased in recent decades, as evidenced by changes in dietary patterns, and in studies of children aged from zero to nine years old, the increase in the number of visits for constipation was 2.8 times higher in children under two years of age, compared to those from two to nine years old, consisting of the ten most common problems in general pediatric practice.4

As nurses, researchers of this study could perform the follow up of infants with intestinal constipation during consultations performed in the program for growth and development in basic units of health. This experience awakened curiosity in research on the topic, since the nurse as an agent of transformation of the health-disease process needs to be qualified to intervene and guide the conduct, seeking promotion, protection and restoration of health.

The following questionings guided the investigation, namely:

- How to characterize the scientific production on intestinal constipation in infants, available in electronic databases?
- What are the risk factors, clinical characteristics, diagnostic procedures and treatment of intestinal constipation in infants?
- Based on the above mentioned, we aim at in this study:
  - Characterize the scientific production on intestinal constipation in infants, available in electronic databases.
  - Highlight the risk factors, clinical features, diagnosis and treatment of intestinal constipation in infants.

METHOD

Study of integrative literature review, according to the following steps: setting objectives of the review and inclusion criteria for the articles; definition of information to be extracted from researches, selection of articles, analysis of results, discussion on the findings and presentation of the review.

To guide this present review, we formulated the following research questions:
- How do you characterize the scientific production on intestinal constipation in infants, available in electronic databases?
- What are the risk factors, clinical characteristics, diagnostic procedures and treatment of intestinal constipation in infants?

Data collection was performed in the databases Latin American Health Sciences (LILACS), National Library of Medicine (MEDLINE); WEB OF SCIENCE and CINAHL.

For this purpose, we used a structured roadmap containing information such as: database, location of the achievement of study, authors, title of article, objective, study design, theme, main results and conclusion.

For the adequacy refinement of the data collection, we used as inclusion criteria: articles in Portuguese, English or Spanish freely available in full text in the databases mentioned above, in the period from January 2000 to December 2011 and that addressed the topic intestinal constipation in infants. So, the articles with publication before the year 2000 and duplications were excluded. The
cohort of the studied period is justified for ensuring the timeliness of the data, focusing on trends of analyzed investigations.

This present investigation was conducted between January and March 2011 by the crossing of Mesh or Medical Subject Headings (MeSH), “lactente / lactante x constipação intestinal x / constipation / estreñimiento x diagnóstico / diagnosis x terapêutica / therapeutics”.

For critical analysis of the articles found, we conducted the reading and descriptive interpretation of selected studies of integrative review, through the identification of common ideas, or different knowledge on the subject between studies, as well as the conflicting contents with the objectives proposed.

The next step consisted of the synthesis of the main results, making an analysis between theoretical knowledge present in the studies and conclusions presented. Thus, it was possible to obtain a synthesis of analyzed knowledge, from which, we presented the main results and conclusions.

Finally, the articles were classified by year of publication, study type, method and themes. We used descriptive statistics. The results were presented in tables with frequencies and percentages and the discussions were centered on the most relevant studies on intestinal constipation in infants, emphasizing the risk factors, clinical characteristics, diagnostic procedures and treatment modalities.

RESULTS

We found a total of 26 articles; however, only 19 were used, because they shared with the objective of this research.

The articles were arranged as follows in the databases: WEB OF SCIENCE (1 article), LILACS (11 articles), CINAHL (4 items) and MEDLINE (3 articles). For the year of publication, there was a predominance in the year of 2007 (21.05%). It was evident that between the years 2000 and 2001 there were no publications related to the topic in question. Regarding the type of study, the descriptive were the prevalent (52.64%), with a quantitative approach (73.69%). The data can be better seen in Table 1.

Table 01. Distribution of studies on intestinal constipation in infants in the electronic databases, according to year of publication, type of study and method used. Natal/RN - 2012

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Fonte: Data of the research. 2012

The studies analyzed showed generally that constipation can be classified as acute or chronic, since the etiology has an organic and functional nature. The diagnosis must be made by the clinical evidences during the practice of anamnesis and physical examination in the childcare consultation, as well as biochemical tests. Among the risk factors, we highlighted the individual character and family.

The striking changes in eating patterns of infants deserve special attention, since it is considered the most important factor in the genesis of this disease. The treatment modalities are related to use of laxative drugs, abdominal therapeutic massages, as well as through guidance to caregivers about the importance of a diet rich in vegetable fibers and increase the consumption of liquids.

DISCUSSION

Intestinal constipation is defined in terms of changes in frequency, size, consistency,
difficulty in passing stool, occurrence of painful evacuations or feces eliminated with effort, often accompanied by crying from the children, even though the number of evacuations is greater than or equal to three times per week.3

Regarding the duration, it can be classified as acute or chronic, not finding in the literature time limit to differentiate this classification. But, it is important to know about it. The acute clinical picture usually has no intestinal abnormalities and the possibility of successful treatment is higher than in chronic cases, since it is due to momentary factors such as change of environment, diet, febrile states, resting, among others.5

The chronic cases result, most often, from inadequate management of the acute stage. For some children constipation develops gradually as a result of progressive decrease in frequency of evacuations and progressive increase of difficulty in passing too hardened feces. Thus, the slow intestinal motility, coupled with the behavior of retaining stool due to the painful evacuations of large fecal mass, are factors that contribute to the development of chronic constipation.5

Regarding etiology, constipation may be organic or functional. The structure is determined when the etiologic agent is known as Hirschsprung disease, fissures and anal stenosis, hypothyroidism, receded anus, use of certain medications, among others. The functional constipation have unknown etiologic factor and, according to the literature, corresponds 95% of constipations presented by children.5 It can also result from the action of many factors not yet fully established, but it is clear that one of them is an individual predisposition for its installation.6

Diagnostic investigation of chronic intestinal constipation is obtained by means of data on the clinical history and physical examination. Laboratory tests are used when exist a suspicion of organic origin. Among the most commonly used laboratory tests stand out biochemical (when there is the suspicion of deficiencies or excesses of thyroid or adrenal hormones and electrolyte disturbance), radiological studies such as simple abdominal X-rays (which assesses the presence or absence of fecal retention and its extension, if it is present), opaque enema (when there is strong suspicion of Hirschsprung disease and other neuronal disorders), anorectal manometry (a test that evaluates the anorectal motility) and rectal biopsy (standard examination in the diagnosis of Hirschsprung's disease).5

For the treatment of chronic intestinal constipation, if it is organic, should be directed to the underlying cause, for example, the replacement of thyroid hormones in hypothyroidism, removal aganglionic segment in Hirschsprung's disease, if it is functional, there are basically four types of treatment: the conventional clinical (involving education, disimpaction with intestinal duct washing, prevention against reaccumulation of feces through the fiber intake, fluid intake and use of laxative drugs), psychological treatment, biofeedback (aims to train the infant to relax the anal sphincter during the act of the effort to evacuate) and surgery, beyond the use of non-drug therapies.5

It is important to mention the individual and family factors that may be associated with likely intestinal motility disorders and constipation. The constitutional or hereditary characteristics are suggested by the high frequency of constipation among relatives of these children, although it can not rule out, in this case, influence of family eating habits.7

In infants basically fed with maternal milk is important to differentiate the constipation from the false constipation. This last mentioned is distinguished by the elimination of soft and amorphous feces, without pain or difficulty, occurring at intervals extending over several days. This condition is physiological and requires no treatment except, guidance for babies’ family and reiteration of the need for maintenance of breastfeeding. Constipation in infants usually begins after weaning or inclusion of complementary feeding; it is characterized by elimination of dry feces, reduced volume and accompanied by pain or difficulty when evacuate.6

It is also worthy to differentiate the possibility the occurrence of dyschezia on the infant, this illness is characterized by the occurrence of at least ten minutes of effort and crying, before the removal of soft stools. It occurs in the first half of life and this is a temporary situation that disappears spontaneously when the infant acquires the ability to relax the anal sphincter and pelvic muscles, when you press down the abdomen at the time of evacuation, with no need for treatment.8

The baby’s feeding deserves special attention in the triggering and perpetuation of constipation in the first year of life, at what stage begins constipation. In most cases occur
striking changes in eating patterns of infants. Thus, the weaning is considered a period in which the newborn can change the default evacuation towards constipation. It has been observed in a study with 240 infants between two and 20 weeks of age, which until the eighth week the daily frequency of evacuations was statistically higher in infants with natural breastfeeding than in those that drank industrial milk. Also was found that the volume of feces in natural babies with breastfeeding was higher than those fed with industrial milk. The duration of natural breastfeeding in children with constipation was lower than the control group, showing that the lesser occurrence of constipation in the first semester of life in newborns with natural breastfeeding; therefore, this habit is a protective factor against the development of constipation. One possible explanation stems from the good digestibility of lipids in human milk compared to formula of industrial milks, favoring formation of stools less consistent.  

Another important feeding factor in the genesis of constipation after the sixth month of the infant is the poor diet in alimentary fiber. A diet rich in fiber has importance in the prevention and treatment of constipation, as it is essential for the formation of the stool, and assists in intestinal motility. However, there are concerns that high intake of alimentary fiber may have a negative impact on growth by causing early satiety, or by interfering with the absorption of minerals.  

It is noteworthy that the quality and quantity of food consumed have wholesome importance, beyond have striking repercussions throughout life. The maternal milk alone meets the needs of infants up to six months, and then must be complemented with appropriate foods to meet nutritional needs of the same, considering that the protection of maternal milk is evident in the first six months of life and the advantages for the child to go beyond this period. The maternal milk contributes up to 2/3 of energy intake and remains being an important source of fat, vitamin A; calcium, and riboflavin until the second year of life. With that comes to the fore the need for constant intervention and advice of health professionals regarding infant feeding, especially as regards the selection, management and how to offer these foods.  

Nevertheless, meals with complementary foods do not replace, but rather complement breastfeeding, which should be maintained until at least two years of life. With the introduction of complementary feeding, the infant will naturally begin to intake lesser quantity of maternal milk. Therefore, one should avoid too many meals with complementary foods, for not decreasing the amount of breast milk intake.  

The low liquid intake is associated with intestinal constipation for providing slow intestinal transit and decreased fecal removal. Besides water, juices and cocktails from laxatives fruits (orange, avocado, papaya, etc.) are also indicated as subsidies in the treatment of intestinal constipation.  

According to the literature, there is the possibility of decreased appetite in infants associated with intestinal constipation; there are reports of lower energy daily intake, macronutrients, iron and insoluble fiber in children with constipation, compared to those without constipation. Thus, while nutritional advice is important to explain to parents that this low food intake is part of the symptoms of illness, and with the treatment, the trend is that the appetite becomes appropriate.  

A study published by Dutch researchers observed the time of introduction of gluten in the diet of a child and its influence on the risk of constipation. This synchronism has its importance, considering that, in general, the earlier a product is introduced into the child’s diet most likely to cause problems of food sensitivity. Accordingly, the constipation is most likely in children with introduction of the gluten to six months or sooner, compared with those children with the late diet with gluten. However, we can not conclude that gluten causes constipation, but this food is really a factor for this fact occurs, such as other intestinal symptoms in childhood.  

The supply of liquid is very important in determining the fecal consistency and use of laxative drugs is employed when considering the age, weight and severity of constipation. The laxative drugs must be, preferably, used in infants up to six months of age. Below that age, diet modification and use of non-drug therapies usually deregulate intestinal functions, and these are risky procedures due their side effects.  

The objective of medicinal treatment is the occurrence of one or two evacuations per day and complete emptying of the terminal large intestine, thus avoiding the possibility of (re) fecal impaction. The main cause of the lack of response to treatment is the unsuitable form used; therefore not always the family follows the guidelines correctly, and the child does not accept the recommended dietary patterns.
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and laxative drugs are not managed properly.\textsuperscript{15}

The use of laxative medications to treat intestinal constipation is common. However, it is necessary to remember that for a long period, it may lead to harmful side effects such as increased constipation, furthermore this practice can bringing risks of fecal impaction and cancer in colon and rectum. The use of non-drug therapies is a major ally in the prevention and treatment of chronic functional constipation. Among them, may be mentioned therapeutic massages and abdominal pressing that began in the 19th century and for over 100 years these massages are used for relief of intestinal constipation and associated symptoms. They went through a period of oblivion, but resurfaced in the 20th century as a way of approach in relieving symptoms.\textsuperscript{16}

Studies have shown that regular abdominal massage is easy to be performed and when performed for at least four to six weeks, it allows observe an improvement in peristaltic movements, increase in frequency of evacuations, decrease of abdominal distention, flatulence and reduction in use laxative drugs. In addition to these benefits, the abdominal massage can reeducate the intestinal function and there is not known any side effect from it.\textsuperscript{16}

Irregular intestinal habits facilitate the emergence of constipation. Therefore, it is important to watch the regularity of the intestinal function for maintenance of normal reflexes of defecation. The ideal is that the massage is performed clockwise, permeating the ascending colon, transverse and the descending for a period of five to ten minutes, especially after the breakfast and main meals, when the gastrocolic and duodenocolic reflexes cause mass movements in the large intestine. The abdominal pressing helps the expulsion of stool due to the lever mechanism and increased abdominal pressure, it is developed simultaneously the intestinal massage, pressing the legs flexed on the abdomen.\textsuperscript{16}

Most infants can and should be treated preferentially by non-drug measures, that is to say, change in lifestyle including dietary modification, increase in fluid intake, intestinal reeducation and assistance of prepared foods from vegetable fibers, components of therapeutic in the success for most cases of chronic intestinal constipation and, eventually, the laxative drugs are also advisable as initial aid measures in this treatment. It has in mind that laxatives are not remedies to treat constipation, not having therapeutic properties, as constipation may not be disease, and like symptom, we should seek the cause, alerting to substances that alter motor functions, absorptive and secretory in the gastrointestinal tract, producing constipation or diarrhea, dehydration and malnutrition.\textsuperscript{12}

In research conducted by pediatricians in the United States for treatment of intestinal constipation, the main laxative medications were surveyed, emerging references to polyethylene glycol, lactulose, mineral oil, milk of magnesia, senna and sorbitol.\textsuperscript{16}

In cases of chronic constipation without response to treatment with laxative drugs and increase in the amount of alimentary fiber in the diet, it has as an alternative the therapeutic test with exclusion diet of cows' milk, since that the allergy to cow's milk protein was recently appointed as the likely triggering factor for causing constipation, by entail proctitis and colitis, triggering episodes of painful evacuations.\textsuperscript{6}

If there is not defecation when the reflexes are excited or, if there is excessive use of laxative drugs instead of the natural function of the intestines, the reflexes become progressively weaker. In summary, the intestinal maneuvers provide the following benefits: enhance intestinal peristalsis, relieve flatulence, precipitate evacuation, help in regularizing intestinal habits; and these techniques can be easily learned by a caregiver and they are noninvasive and pleasant options for the management of intestinal constipation.\textsuperscript{16}

For certain authors, the share of responsibility of the deaths in these infants is partially associated to the health services, and it is important to have an effective immediate intervention, particularly with regard to the strengthening of these services and the quality of assistance both from caregivers and hospital procedures.\textsuperscript{17}

Thus, treatment of constipation should be done as early as possible, in order to prevent the development of a clinical picture of severe constipation and / or fecal leak, with a view that the analysis of result of the curative actions is easier than when it includes promotion and prevention measures, given that these components have influence from the social, behavioral and cultural aspect about what is care.\textsuperscript{18-19}

\textbf{CONCLUSION}

The scientific production on intestinal...
Constipation in infants was characterized as follows: most of the articles was available in Portuguese, arranged in an electronic database (LILACS), published in 2007 and were of type descriptive with quantitative approach.

According to the literature investigated, the constipation in infants may be classified as acute or chronic, the first being associated with factors such as change of environment, diet, and fever. The second one gradually develops for reasons not yet fully known, but the consensus that it is from the family. The diagnostic investigation is carried out through the anamnesis and physical examination in the childcare consultation, as well as biochemical tests. Among the risk factors, we highlighted whether the constitutional or hereditary characteristics, as well as the eating habits of family.

The abrupt changes in alimentary patterns of infants deserve special attention, because it is considered the most important factor in the genesis of this disease. Treatment forms are related to dietary and laxative therapeutic, beyond the appropriation of non-drug therapies such as massage and abdominal pressings, in view of the relief and treatment of chronic functional constipation.

Conceptualize and classify intestinal constipation, knowing properly differentiate it from false constipation in infant, gives to the health professional more support for choice of the therapeutic form to be recommended, and with it, a more successful result before the morbidity faced.

It is recommended that the investigation of intestinal constipation in infants is performed during the consultations for growth and development, in order to take early therapeutic measures aimed at avoiding the complications. Thus, it is the job of health professionals carry out adequate guidelines regarding the treatment, forms of relief and prevention of this illness as a strategy to promote to the health of the infants.

Finally, it is expected that this study allows basing the clinical practice of nurses in relation to consultations directed to the infant, such as the early identification of intestinal constipation, contributing to the selection of interventions based in evidences for achieving results of nursing for which the nurse is responsible.

REFERENCES


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Sources of funding: No
Conflict of interest: No
Date of first submission: 2012/02/14
Last received: 2012/11/11
Accepted: 2012/11/12
Publishing: 2012/12/01

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