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Research Article

Influence Of Eliminating Food Allergens (Other Than Cow's Milk Protein) From the Mothers Diet in Infantile Colic in Infants 1-6 Months Old Referred to Taleghani Polyclinic of Gorgan In 2013 To 2014

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ABSTRACT:

Introduction and objectives: Colic is a common disease in infancy. Colic is a series of occasional symptoms of abdominal pain that may be with intestinal origin and severe cries. Infantile colic is defined: Intense crying with no known cause, At least 3 hours a day, at least 3 days per week for at least 3 weeks. Approximately 15-40% of infants under 3 months are affected. Our main objective of this study is assessment of influence of eliminating food allergens (other thancow's milk protein) from the mother's diet in infantile colic in infants who are exclusively breastfed.

Methods and materials:This cross - sectional study was performed on 40 infants referred to Taleghani Hospital Clinic in two diet eliminates allergens in food groups and the control group based on random simple sampling, the controls group were infants with infantile colic referred that matched for age and weight. After a week changes in infants' symptoms were evaluated by questionnaire. Data was analysis with SPSS16.statistical test including paired and t-test, Chi square and 95% confidence intervals at a significance level of 5% was used to determine the relationship between the variables.

Results: Results showed that eliminating food allergens other than cow's milk from the mother's diet is effective in improving infantile colic and reduced by more than 40% of the Infants symptoms. Data analysis showed that age, sex and weight of the infants were not significantly associated with an improvement in their symptoms. The analysis of the findings in this study showed that the symptoms of colic in infants such as crying in the night, crying in the evenings, the average number of days per week of crying, straining significantly improved in the target group than in the control group. But there is no significant difference in other symptoms includes infant crying in the morning, crying time during the day, restlessness and non-breastfed between the groups.

Discussion: This study showed that there is a clear association between the food allergens elimination other than cow's milk protein from diet of mothers who have infants with colic for 7 to 10 days and improvement of symptoms infants. Review and analysis of the data showed that follow this diet for 7 to 10 days, improved more than 40% of symptoms. According to evidence from previous studies and confirm the elimination of cow's milk in infants symptoms in these studies and according to the results of this study this diet can be used to improve the symptoms of infants with infantile colic and in severe resistant cases this diet in addition to eliminating cow's milk also can be used.

Keywords: Infantile colic, infant, maternal food elimination diet, food allergens

INTRODUCTION:

Colic is a common problem in infancy. A series of occasional symptoms of colic is severe abdominal pain and tears which is probably intestinal origin. Colic usually occurs in infants younger than 3 months (1). ROME III criteria for the diagnosis of infantile colic by category are listed in a table. The disease has specific clinical protests, attacks are usually sudden and loud cries constantly begin. The attacks may continue for several hours, the child's face may be red or a pale around the lips and mouth. The abdomen is usually distended. May smooth legs for short periods, but often accumulate in the abdomen. Are often cold feet and hands are also often fist. Attacks maycontinue to be fed until the infant. Sometimes you may pass gas or stool in the improvement of infant symptoms (2).

Infantile colic is defined as follows: severe crying without apparent cause, at least 3 hours per day, at least 3 days a week for at least 3 weeks. About 40-15 percent of infants less than three months are infected.It seems that some infants are more sensitive to the risk of colic. The cause of this disease is unknown.But in some infants seem to hunger strikes or swallowing air that has passed into the intestines connection.Feeding too much can also cause discomfort and abdominal distension infant, and some foods, especially foods with high carbohydrate content, can cause fermentation of these materials into the intestines.However, a change of diet could scarcely infant colic prevents further attacks (3). Attacks usually occur in the late afternoon or midnight.Anxiety, fear, sadness and excitement that older children may be causing nausea can also cause colic in infants, but for colic a particular factor cannot be considered permanent as well as single and consistent treatment for the symptoms of infants.Prevent attacks must find and improve feeding technique involves taking baby burp after each feeding, providing a stable psychological environment for the infant, finding and eliminating foods that cause allergies is possible and diet in infant or maternal diet and also avoid poor nutrition or overfeeding.Although infantile colic is self-limiting and in most cases not associated with any serious side effects but can be serious because infant crying affect the morale of parents and even the relationship between parents and children to be wrong and may also cause anxiety and fatigue of the mother too.

There is conflict about the role of diet in reducing infantile colic still. Any food can cause allergies, but there are a few foods that cause the most food allergies such as milk, eggs, nuts, fish, and sausages.Remove foods from the mother's diet is not safe prescribing.It could be harmful consequences for the health of mothers and children.Prohibition of unreasonable mother from eating certain foods must be based on proven and solid evidence. Remove the mother's dietary cow's milk and its derivatives in the treatment of infantile colic had different results. If we consider infantile colic role for food allergens may be due to different materials other than cow's milk.Research suggests this is different.Evans et al in 1981, double-blind study conducted on 20 nursing mother during the two-day interval were excluded cow's milk and the result was thus eliminating cow's milk from the mother's diet had no effect in reducing infantile colic (4).A study by Garrison and Christakis systematic review in 2000 was conducted in conjunction with colic treatment and during which 57 papers were reviewed and as a result was as follows and the effect of removing allergens from the diet of breastfeeding mothers is somewhat effective in improving infantile colic however, other alternative therapies is also required (1).In children cow's milk, eggs, peanuts, soy, wheat, fish 85% of food allergies are included. Food allergies in people with genetic predisposition are not created when normal oral tolerance is created.The key for a food allergy, regardless of the type of clinical allergy, diet food allergens agent is removed.Dietary proteins that cause allergies removed from the mother's diet is beneficial and this is because breast milk contains antibodies that cause allergies are intact. Diagnosis based on symptoms upon withdrawal of food allergy-causing proteins like

cow's milk.Continue to have symptoms after eliminating a certain food, such as cow's milk because there are not specified in the mother's diet other foods (such as eggs, peanuts, wheat, etc.).Given that there are very few articles and the effect of the discontinuation of allergens than cow's milk in reducing symptoms of infantile colic were examined and we decided to remove the impact of food allergens than cow's milk and the nursing mother's diet in reducing the symptoms of infantile colic examined.

METHOD:

This crosssectional study was performed on 48 infants with infantile colic. Patients were randomly selected and available from the patients who were referred to the clinic of Taleghani Hospital in Gorgan.RomeIII infants based on clinical criteria and evaluated by a physician certified gastroenterologist with children and a neonatal specialists were selected. The 48 patients in the study were randomly divided into 2 groups of target and control group; each group consisted of 24 patients.Infants were divided into two groups, one group of nursing mothers taking common food allergens than cow's milk (includes: eggs, soy, nuts, sauces and condiments) and the second group is strictly avoided as a witness.After two weeks, reduce or increase the symptoms were assessed with a questionnaire.Inclusion criteria were diagnosis of infantile colic, according to rome III criteria and exclusion criteria also include non-diet during the study, medications that are used in the treatment of infantile colic and lack of follow-up during treatment.

The sample size p1 = 0.77, p2 = 0.40 and statistical power of 80% and $\alpha = 0.05$, 24 people in each of the 2 groups was calculated.After extracting data from the check lists, the data was analyzed by SPSS-16 software and using chi-square and paired t-test associations between variables were assessed.Inclusion was completely voluntary and people could be excluded at any time. All information was confidential.And at the time of reporting the bill does not mention the identity of individuals. This study was approved by the Ethics Committee of the Golestan University of Medical Sciences.

RESULTS:

Target group and a control group matched for age, sex, birth weight and current weight was similar.The average age of the target and control was 62 days and 51 days. 52% were male and 48% were female.The target group and the control group in mean birth weight 3034 g and 2865 g respectively and the average weight of infants in the first visit in the target group and the control group was 4845 g and 4410 g, according to independent t-test, the mean of the two groups showed no significant difference relative to each other.At the beginning of the intervention, 57 infants were studied, of which between 48 infants completed the study.At the beginning of the study infants crying time per day, number of days per week that the average infant cries,during the day crying, agitation, straining, agonize and were not taking the breast based on the results of data analysis, in the first visit, the two groups were not significantly different in terms of these criteria.

The aim and control between the two groups there was no significant difference in terms of the symptoms.The most common symptom is listed in the first visit was in the midst of all infants cry, cry at night were more common than other times of the day.The symptoms in infants after night crying, agitation, straining, agonize, cry evenings, lack of breast and cry in the morning, the prevalence among all infants, respectively, and were the most common symptom.The mean duration of crying during the day among all infants was 131 minutes and the average number of days during a week complaining of crying among all infants was 4.95 days.The complaint of crying among infants of both groups in the morning, with an average 19% lowest incidence among infants had symptoms during the first visit.

After two weeks of infants were re-visit and the changes of symptoms were measured again.In the meantime crying at night, crying evening, straining, agonize and the average number of days crying during the week showed statistically

significant decrease. The results of data analysis in Table 3 are expressed in the second visit.The overall cure rates for the disease in infants a score for each symptom was considered infants for each of the marks cry in the morning, afternoon and night, restlessness, straining, agonize and lack of breast was considered a score for score average crying time during the 24 hours of 0, 1 and 2, respectively, for crying less than an hour, cried between an hour and two hours and cry was over 2 hours (questionnaire).Also crying for Average number of days during the week score of 0 and 1, respectively, less than the median crying for days (median of 6 days) and most of Asia was considered.Data analysis showed an increase in weight infants after two weeks observing the recovery rate of maternal diet increases, but it is statistically significant (correlation coefficient 0.173on48 people and p = 0.2).Comparing data between two appointments among infants in the target group using the McNemar test showed signs of reviews crying at night and in the evening, straining, agonize and cry in the average number of days per week had a significant improvement, while other signs of colic in infants studied include:

Cried the morning, restlessness, lack of breasts and the average crying time during the 24 hours did not show significant improvement.In the morning crying infants during the first visit and the second visit of the 5 infants with target groups during the first visit in the morning were crying2 cases (40%) followed by the mother's diet for 7 to 10 days have been improved and this was not statistically significant (p = 0.5 in the target group and the control group p = 1).and while there was no difference in the control group. Analysis of the data showed statistically significant improvement in crying time (target group and the control group p = 0.125 p = 0.016, respectively).Among the 18 infants cry on the night, 6 infants cry night (33.3%) after low-allergen diet had improvedThe improvement was statistically significant (p = 0.031 and the target group was the control group p = 0.687). Restless infants in this study did not show significant improvement with the diet and from 17 infants with agitation 7 (41.2%) had improvement and the recovery rate in the control group was not significant (p = 0.180 and the target group was the control group p = 0453).

DISCUSSION:

Dietary restriction is set for the mother of the various conditions should be based on proven experience. Diets based on speculation are several complications for mother and baby. Mother and child malnutrition and reduced quality of life and reduce the efficiency of dietary variety of regimes are unaware of these effects. Cow's milk protein-free diet is a strict diet and annoying mothers and deprives them of many and loss of minerals like calcium and phosphorous which can cause problems. It may be completely useless in certain conditions. Studies in this area to determine the food allergen can cause doctors and nutritionists help create a recipe quite right and harmless. In our study the effect of eliminating certain food allergens than infants with colic from cow milk from the mother's diet was evaluated. According to an article by Garrison and Christakis in 2000 as systematic review was written in treating colic, the effect of removing allergens from the diet of breastfeeding mothers in the improvement of infantile colic is not known yet (1).Our study shows that eliminating food allergens than cow's milk from the mother's diet improved overall and disease in infants with colic symptoms effectively.The results of data analysis in our study showed that the regime remove allergens than cow's milk (including: eggs, soy, nuts, sauces and condiments) the nursing mother's diet for two weeks improved patients' symptoms and more than 40% symptoms resolved and the need to eliminate cow's milk protein in all cases.As mentioned in the introduction to the study Evans et al eliminating cow's milk from the mother's diet had no effect in reducing infantile colic (4).Taubman et al. (1988) study of a clinical trial conducted on 20 infants and concluded that teaching parents more effective than cow's milk is removed (5).In one study, double-blind, placebo-controlled trial by Hill and collaborate on 77

infants were randomly divided into two groups for mothers, low-allergen diet includes foods without artificial colors, no additives and no preservatives compared with a control diet began.Responding to the diet was assessed at day 1 and day 8. The study showed that the elimination of food allergens from the diet may improve symptoms of colic in infants of breastfeeding mothers compared with control group.

In this study, large allergens such as eggs, wheat, meat, nuts and a group of vegetables and fruits were removed from mother's diet (3).In another study, a clinical trial of Hill & Associates in 2005, which was conducted on 107 infants? Mothers were randomly divided into 2 groups: control group, low allergen diet that women with low allergen diet of cow's milk, eggs, nuts, wheat, soy and fish were removed from their diet to diet in the control group continued their mothers. After 7 days crying and restlessness result of the changes in the infants were examined within 48 hours. The primary objective of the study is reduction of more than or equal to 25% of the initial amount was crying and restlessness. After 7 days, significant response was seen in the low allergen diet (74% vs. 37%).In conclusion, the study was a reduction of 37% in the incidence of colic and the children crying during 48 hours in low allergen, 28% reduced (6).In study Imanieh et al on 77 infants were shownthe elimination of dairy and milk from the mother's diet has no effect on the improvement of colic in infants who are not exclusively breastfed (7).

In a prospective cohort study questionnaire by Clifford and colleagues in 2002 on 856 samples of mother and suckling was shown that in 85% of cases of infantile colic will resolve spontaneously and not the status of the mother (8).

According to the guidelines published in the mother's diet, it is recommended that if you remove a child had no symptoms of allergens, material removed again added to the mother's diet. Other studies show the effects of diet on the improvement of infantile colic had conflicting results.

The role of cow's milk and cow's milk protein-containing foods in infantile colic is shown in various studies.The results of the study, Jakobssonet al in 1983 in contrast to the aforementioned studies (studies Imanieh and Evans) it was shown that the elimination of milk from the mother's diet in reducing the incidence of colic in infants has been effective so that 35 infants without colic symptoms were a total of 66 infants studied (9).

Campbell and colleagues used a double-blind study of 19 infants during 3 weeks, standard cow's milk formula, and soy milk compared with formula. Time colic symptoms during the week in soy milk have dramatically decreased.In the four infants whose symptoms spontaneously or had no improvement in the consumption of soy milk Milk protein hydrolysates received the positive response was observed in 2 cases resolved their colic symptoms.During this study, 13 of 19 children had a significant reduction in infantile colic (10).

In a study of a clinical trial by Estep and Kulczyckiin 2000, when the infants were fed formula based on amino acids, reduction in average crying time was within 45%, which represents a decrease of 1 to 5 hours per day and all infants have colic significant decrease in the incidence (11).

In this study, Jakobssonet al in 1983 that double-blind trial was conducted on 66 nursing mother remove the milk from the mother's diet in reducing the incidence of colic in infants has been effective so that 35 infants of infants without colic symptoms (9).

In the double-blind study of Lucassenet al in 2000 that on 43 infants, which contains two 23-member groups that whey protein-free formula and the other group consisted of 20 infants who were fed the standard formula, whey protein was removed from the diet of infants in a reduction of 63 minutes duration was crying during the day. This widespread use of hydrolyzed whey formula to reduce crying time in infants with colic proposed (12).Dehdashtianet al in a study in 2004 on 50 infants with infantile colic symptoms did and it

was shown that the removal of milk and dairy products from the diet improved crying mothers in 48% of them and improvement of malaise in 44% of them (13).Unlike Garrison and Christakis study in 2000 study by Hill et al in 1995 were performed on 77 infants was shown which exclude food allergens (milk, eggs, wheat and nuts) caused an improvement in infants with infantile colic.The analysis of the agitation on the eighth day of the first day of the infants in the target group also showed significant improvement as compared to the control group (3).

In another study Hill et al in 2005 was conducted on 107 infants, it was found that the removal of some of the main allergen foods from the maternal diet infants with colic for a week with a significant reduction in infant crying and restlessness associated. Preliminary results analyzed in this study 37% of low allergy risk reduction compared to the control diet group. The mean difference in duration of crying and restlessness was between the two groups at the end of about 3 hours for 48 hours (6). Evidence obtained in studies, Hill et al in 2005 was confirmed in this study. As the results of data analysis showed the diet eliminates allergens than infants with cow's milk improves symptoms was more than 40%, also among the symptoms of the infants cried night and day, straining, agonize and the average number of days during the week crying in the second visit two weeks later improved diet and this reduction was statistically significant.The findings of our study ranged cry in the morning, not decreased. Since colic more restless and cry in the evening and night shows therefore it can be concluded when the main symptoms of children crying in the morning time and other causes should be considered and studies continue is necessary.There are several reasons for the lack of the breast.Infant reflux is a common cause of different treatment. The findings in our study not fall it will be different because the complaint is justified. Change how nutrition and breastfeeding reflux and is sometimes prescribed antacids.The results of our study showed that eliminating food allergens than cow's milk from the mother's diet improves colic in infants that are similar to the study; Hill et al believe infants in the target group had significant improvement as compared to the control group.Our study also showed that adhere to this diet causes significant improvement in symptoms such as straining and agonize patients.Time to remove allergens from two weeks to four weeks and it seems to be considered in future studies of this increase for removal.According to the study, Jakobssonet aland Machtingeret al 9 days after the removal of allergens and food antigens in breast milk are foods (14) and (15) and the duration of the study, it is possible to achieve the complete elimination of food allergens for all infants breast milk is not enough and the longer period of time remove allergens can improve the response of an infant.

LIMITATIONS:

The study population was randomly selected from among patients, and higher average severity of the problem had not responded to treatment earlier measures. The findings of our study may be attributable to the larger population of infants and patients with lower severity of the disease.If future studies could be a longer observation period and identified the main allergens and specifically the material to be removed and therefore easier for mothers diet results will be different.

CONCLUSION:

Our study showed that diets eliminating food allergens than cow's milk (including: eggs, soy, nuts, sauces and condiments and peanuts) in mothers of infants with infantile colic for two weeks with more than 40% improvement in symptoms associated infants.While this communication regarding the improvement of other symptoms including crying infants in the morning, restlessness, lack of latch and the average crying time during 24 hours does not apply.Because of the importance of the fact that nutrition interventions should be avoided unnecessary in most infants with colic: colic in infants who have severe symptoms and disease caused by food allergens appear and can be

limited to a period of experimental treatment for two weeks with diet eliminates food allergens include allergens than cow's milk can be used.In infants with mild symptoms of the diseases they can remove a portion of their sensitivity to food allergens that may further for two weeks, and if no response to the allergen is removed to expand the whole regime.

SUGGESTION:

Remove food allergens than cow's milk from the mother's diet as a treatment alone or in combination with other therapies in the treatment of infantile colic infants who have moderate to severe symptoms. A questionnaire investigates the effect of allergens than cow's milk from the mother's diet in infantile colic.

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- Child's profile:

  The child's age, sex of child: birth weight: the current weight children:

- symptoms:

  1. Crying • Morning • Duration (hours) .....

  • The number of days crying and restlessness time in weeks:

- Evening
- Night

  2. Restlessness

  3. Straining

  4. Agonize

  5. Lack of getting breast

- Child's profile:

  The current weight children:

- symptoms:

  1. Crying • Morning • Duration (hours) .....

  • The number of days crying and restlessness time in weeks:

- Evening
- Night

  2. Restlessness

  3. Straining

  4. Agonize

7 to 10 days after baby revisit:

G4. Infant Colic

Diagnostic criteria *Must include **all** of the following in infants from birth to 4 months of age:*

1. Paroxysms of irritability, fussing or crying that starts and stops without obvious cause
2. Episodes lasting 3 or more hours/day and occurring at least 3 days/wk for at least 1 week
3. No failure to thrive

Table 1: Rome III criteria for the diagnosis of infantile colic

	Target	Control
Cry in the morning time	21%	17%
Cry in the evening time	54%	50%
Cry in the night time	75%	83%
Cry in the day time	71%	79%
Straining	62%	83%
Agonize	54%	79%
Breast rest	35%	13%
Crying time during the day (min)	19.5±124	22±138
the average number of days cried per week	0.5±4.7	0.4±5.2

Table 2: Symptoms of infants in groups at baseline

	Target	Control
Cry in the morning time	12.5%	12.5%
Cry in the evening time	25%	33.3%
Cry in the night time	50%	91.7%
Cry in the day time	71%	66.7%
Straining	29.2%	62.5%
Agonize	25%	70.8%

Table 3: Symptoms of infants in groups in the second visit

Breast rest	20.8%	12.5%
Crying time during the day (min)	14±62	18±106
the average number of days cried per week	0.5±2.8	0.4±5.1

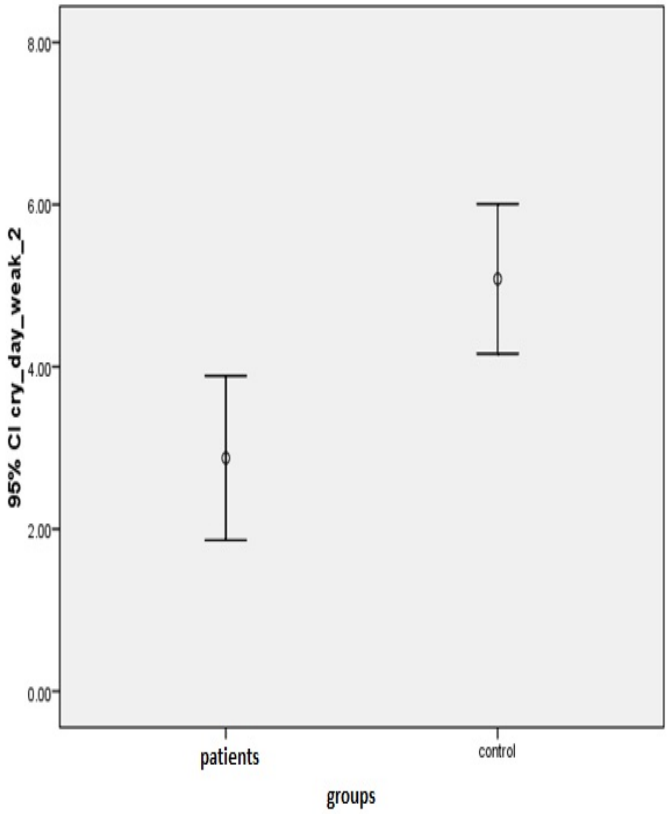

Figure 1: Comparison of business improved in the first and second target group (compared to 95 percent the number of days per week crying in the target group and the control group).