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What is Physician's Experience on Managing Infant's Colic with Probiotics?

Šta nam poručuje iskustvo lekara o tretmanu infantilnih kolika probioticima?

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Summary Diagnosis of infant's colic is based on Wessel's rule of three: crying more than 3 hours, at least 3 days a week, for more than 3 weeks. It is described as paroxysmal crying accompanied by leg flexion and gas passing. Apart of proper advise, education and support to mother, parents and caregivers, probiotics are the only products confirmed to have positive effect on colic.
Material and methods: The "Crying and colic" survey was conducted in order to review physician's attitudes towards the management of infant's colic with LGG probiotic strain.
Results: We analysed a total of 778 completed surveys from numerous Serbian regions. For all infants with diagnosed or suspected colic 7 drops of Lactobacillus rhamnosus strain was advised. In almost all cases (98.7%) the improvement of symptoms within first five days of treatment was noticed followed by further improvement during consecutive 30 days during Lactobacillus rhamnosus administration.
Conclusion: A positive effect of LGG within the first few days of administration was registered. It is highly recommended to continue for at least 14 days after cessation of problems. Upon reaching a good therapeutic response within first month, it is advised to continue the administration for another two months.

Key words: infant colics, crying, probiotics

Sadržaj Infantilne kolike se najčešće dijagnostikuju pomoću Wesselovog pravila trojke: plač više od 3 sata, najmanje 3 dana nedeljno, duže od 3 nedelje. Infantilne kolike se mogu opisati kao paroksizmalni plač koji je praćen grimasiranjem lica, fleksijom nogu i gasovima. Probiotici su jedini lekovi koji mogu biti korisni za tretiranje kolika.
Materijal i metode: Istraživanje „Plakanje i kolike“ sprovedeno je sa ciljem analiziranja stava lekara prema tretiranju infantilnih kolika probiotičkim sojem Lactobacillus rhamnosus (LGG).
Rezultati: Analizirali smo ukupno 778 popunjenih anketa iz brojnih srpskih regiona. Za svu decu sa dijagnostikovanim ili sumnjama na kolike savetovano je 7 kapi soja Lactobacillus rhamnosus. U skoro svim slučajevima (98,7%) lekari su primetili poboljšanje u prvih pet dana lečenja uz dodatno poboljšanje u periodu praćenja od 30 dana dok su koristili Lactobacillus rhamnosus.
Zaključak: Definitivno je pokazan pozitivan efekat LGG-a u prvih nekoliko dana primene, kao i preporuka da se nastavi primena najmanje 14 dana nakon prestanka problema. Nakon postizanja dobrog terapijskog odgovora u prvom mesecu, najbolje je nastaviti sa primenom probiotika još dva meseca.

Ključne reči: kolike, novorođenčad, plač, probiotici

Introduction

Infant crying is one of the most disturbing conditions for parents. It is one of the most common reasons for pediatric consultations. The most important patterns of crying are timing, duration, frequency, intensity and variability. Preterm infants cry less than term infants until they reach the 40 weeks gestational age. On the other side they trend to cry more until they reached 6 weeks of corrected gestational age mostly due to different underlining medical conditions such as visual impairment, bronchopulmonary dysplasia and feeding disorders. Frequency of crying is less variable.

The average frequency of combined crying and fussing is around 10 episodes in 24 hours. Crying are mostly presented in the late afternoon. The intensity of crying can be described from fussing to screaming. An intense crying (pitch or loudness) is often a very disturbing for parents or caregivers and usually they trend to seek medical help. Sometimes it is very difficult to distinguish pain crying from hunger crying. (1)

Colic is traditionally defined by the Wessel's criteria of crying or fussing more than three hours of the day for more than

three days of the week. (2) The new Rome IV criteria define it as 'recurrent and prolonged periods of infant crying, fussing or irritability reported by caregivers that occur without obvious cause and cannot be prevented or resolved. The biggest limitation of this definition is the lack of specificity of word crying and the necessity to wait for 3 weeks to make diagnosis. Colic crying can be described as paroxysmal crying that accompanied with facial grimacing, leg flexion and passing flatus. (3)

Guidance and Management of infant's colic

The management of infant's colic begins with the education and demystification. The role of physicians is to educate parents about the normal pattern of infant crying and to provide them with the information regarding atypical crying that require further medical attention (4,5).

There are several strategies for colic management. Techniques for calming infants include: Dr. Harvey Karp's "5Ss": swaddling, side or stomach holding, soothing noise, shushing or slow rhythmic movements and sucking on a pacifier. Health care providers are supposed to encourage and support parents particularly to advise them against harmful methods to soothe an infant such as placing infant on a vibrating clothes dryer. Parents should be well educated and warned about the danger of shaking baby syndrome. (6)

Phenobarbital, diphenhydramine, alcohol, simethicone, dicyclomine and lactase have not been shown to be benefit and may cause serious side effects. As well as alternative treatments such as: camomile, fennel, vervain, licorice and balm mint teas have not been approved for use in infants due to severe side effects that can cause such as hyponatremia and anemia.

Dairy changes are not effective only in the case of suspected cow's milk protein allergy/or intolerance or lactase deficiency when a hypoallergenic diet of the nursing mother is recommended (level A) and for infants who are not breast-feeding to switch to extensive hydrolysates (level A). (7)

Some results showed that a disorder at the level of the axis of the microbiome of the gastrointestinal tract -central nervous system can be a very important in the pathophysiology of infant's colics. (8,9)

According to the recent studies probiotics are the only products that can be useful for treating colic accompanied with the improvement of feeding measures, avoiding excessive caffeine and alcohol on nursing mothers, ensuring adequate yet not excessive bottle nipple flow and cautioning against overfeeding. (10)

Lactobacillus reuteri and *Lactobacillus rhamnosus* are two strains that have been mostly studied for treatment of infant's colic. Results from those studies showed that *Lactobacillus reuteri* can be recommended for treating infant's colic with level B. Some randomized study it is showed that the combination of probiotic cultures of *Lactobacillus rhamnosus* and *Lactobacillus reuteri* had a beneficial effect on infantile colic in terms of reducing the intensity and length of the weeping. (9,10)

Ong's Cochrane Data Base systematic review of the literature has not shown that probiotics are effective in combating infantile colic, but certainly their use can reduce the length and intensity of crying. (11)

Material and methods: The "Crying and colic" survey was conducted in order to define physician's attitudes towards the management of infant's colic with LGG probiotic strain. The survey was anonymous and voluntary. A questionnaire was constructed in two parts: physician's characteristics: age, gender, location, profession, specialty, years in clinical practice, approximate number of infants evaluated per day. The second part was related to patient's characteristics : average age, gender, management of colic, effects of the treatment. The results were reported.

Results

We analysed a total of 778 completed questionnaires from various regions across Serbia. Almost all participants (87%) were pediatricians, mostly female and predominantly above 45 years of age. The great number of physicians were employed in public primary health care centers working with healthy babies most of their time. It was presumed that majority of physicians have been able to access the intensity and severity of infants' colic. 75% babies diagnosed or suspected of having infants' colic were given 7 drops of *Lactobacillus rhamnosus* strain (Bebicol forte, Abela pharm). The improvement of symptoms during the first five days of treatment was registered in 82% of cases with further improvement during the follow up period of 30 days when *Lactobacillus rhamnosus* strain was continued.

The results of this analyses confirmed pediatricians' positive attitude towards probiotics in treating infant's colic. Probiotics, particularly LGG strain are the unique preparations that have been proven to be capable to reduce symptoms of infantile colic, without any side effects (12, 13) with excellent safety profile.

Conclusion

According to the results of the analyses paediatricians' positive experience with LGG strain in treating and preventing infant's colic has been confirmed .

References:

1. Nelson Essentials of Pediatrics - 8th Edition, Elsevier 2019
2. Wessel MA, Cobb JC, Jackson EB, Harris Gs Jr, Detwiler AC. Paroxysmal fussing in infancy, sometimes called 'colic'. *Pediatrics* 1954;14:421-34.
3. Zeevenhooven J, Koppen IJN, Benninga MA. The new Rome IV criteria for functional gastrointestinal disorders in infants and toddlers. *Pediatr Gastroenterol Hepatol Nutr* 2017;20:1-13. <https://doi.org/10.5223/pghn.2017.20.1.1>
4. Savino F, Castagno E, Bretto R, Brondello C, Palumeri E, Oggero R. A prospective 10-year study on children who had severe infantile colic. *Acta Paediatr Suppl* 2005;94:129-32. <https://doi.org/10.1111/j.1651-2227.2005.tb02169.x>
5. Hemmi MH, Wolke D, Schneider S. Associations between problems with crying, sleeping and/or feeding in infancy and long-term behavioural outcomes in childhood: a meta-

- analysis. Arch Dis Child 2011;96:622-9. <https://doi.org/10.1136/adc.2010.191312>
6. Sung V, Cabana MD. Probiotics for colic: is the gut responsible for infant crying after all? J Pediatr 2017;191:6-8. <https://doi.org/10.1016/j.jpeds.2017.09.010>
 7. Sung V, Partty A. Chapter 12 The association between intestinal microbiota and infant crying and behaviour. In: Browne PD, Claassen E, Cabana MD, editors. Microbiota in health and disease: from pregnancy to childhood. Wageningen, The Netherlands: Wageningen Academic Publishers; 2016. p. 219-43.
 8. Partty A, Kalliomaki M, Salminen S, Isolauri E. Infantile colic is associated with low-grade systemic inflammation J Pediatr Gastroenterol Nutr 2017;64:691-5. <https://doi.org/10.1097/MPG.0000000000001340>
 9. de Weerth C, Fuentes S, de Vos WM. Crying in infants: on the possible role of intestinal microbiota in the development of colic. Gut Microbes 2013;4:416-21. <https://doi.org/10.4161/gmic.26041>
 10. Gerasimov S, Gantzel J, Dementieva N et al. Role of Lactobacillus rhamnosus (FloraActive™) 19070-2 and Lactobacillus reuteri (FloraActive™) 12246 in Infant Colic: A Randomized Dietary Study. Nutrients. 2018 Dec 13;10(12). pii: E1975. doi: 10.3390/nu1012197
 11. Ong TG, Gordon M, Banks SS, Thomas MR, Akobeng AK. Probiotics to prevent infantile colic. Cochrane Database Syst Rev. 2019 Mar 13;3:CD012473. doi: 10.1002/14651858.CD012473.pub2
 12. Horvath A, Dziechciarz P, Szajewska H. Meta-analysis: Lactobacillus rhamnosus GG for abdominal pain-related functional gastrointestinal disorders in childhood. Aliment Pharmacol Ther. 2011 Jun 1;33(12):1302-10. doi: 10.1111/j.1365-2036.2011.04665.x. Epub 2011 Apr 20.
 13. Chau, Kim et al. Probiotics for Infantile Colic: A Randomized, Double-Blind, Placebo-Controlled Trial Investigating Lactobacillus reuteri DSM 17938. The Journal of Pediatrics, 2015; (166): 74 - 78. doi: 10.1016/j.jpeds.2014.09.020. Epub 2014 Oct 23.
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