UVODNIK – EDITORIAL

Probiotics for acute gastroenteritis – physician's thinking and decision

Primena probiotika kod akutnog gastroenteritisa- mišljenje lekara i odluka

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Summary

Introduction: In the last two decades, a large number of studies on probiotics for gastrointestinal disorders has been published. Probiotics are bacterial microorganisms that can have a benefit on human health if properly used. So far, the most commonly used strains of probiotics are Lactobacillus rhamnosus (LGG), and Bifidobacterium brevis. The aim of the article was to discusss the effectiveness of LGG probiotic culture in the prevention and treatment of acute gastroenteritis. Material and methods: The survey was conducted with an anonymous closed-type questionnaire, which involved 382 pediatric specialists. Results: The survey results showed that paediatricians considered Bebicol forte as very effective in treatment and prevention of acute gastroenteritis.
Conclusion:Modern approach in treatment of children with acute gastroenteritis should have been consisted of probiotic strains like LGG alongside with fluid and electrolytes.

Key words: probiotic, acute gastroenteritis, prevention

Sažetak

Uvod: U poslednje dve decenije, objavljen je veliki broj studija o upotrebi probiotika za gastrointestinalne poremećaje. Probiotici su bakterijski mikroorganizmi koji se koriste I za lečenje I za prevenciju digestivnih poremećaja. Do sada su najčešće korišćeni sojevi probiotika Lactobacillus rhamnosus (LGG) i Bifidobacterium brevis. Cilj ovog traktata je razmišljanje o efikasnosti probiotičke kulture LGG u prevenciji i lečenju akuntih digerstivnih problema. Materijal i metode: Istraživanje je provedeno anonimnim upitnikom zatvorenog tipa, u kojem je učestvovalo 382 pedijatra. Rezultati: Rezultati ankete pokazali su da pedijatri probiotsku kulturu LGG smatraju visoko efikasnom u lečenju akutnog gastroenteritisa.
Zaključak: Moderan pristup u lečenju dece sa akutnim gastroenteritisom, podrazumeva primenu efikasnih sojeva probiotika poput LGG-a, uz rehidrataciju i korekciju gubitaka tečnosti i elektrolita.

***Ključne reči:** probiotici, akutni gastroenteritis, prevencija.*

Introduction

Acute gastroenteritis is one of the most common problems in children under three years of age. Incidence in Europe is 0.5-1.9 episodes / year in children less than 3 years of age. Acute gastroenteritis is a clinical syndrome of diarrhea (more then 3 stools in 24 hours) with or without vomiting that usually last for a couple of days. (1)In general diarrhea can be caused by a variety of infectious or inflammatory processes in the intestine that directly affect enterocytes secretory and absorptive function. Gastroenteritis can be caused by viruses, bacteria and parasites. Viral gastroenteritis is the most common cause of diarrhea in children globally. Rotavirus is the most frequent viral cause of diarrhea in young children during the winter months. Fortunately the rotavirus vaccine has resulted in a significant reduction in the incidence of acute gastroenteritis and hospitalization due to rotavirus. (2)

Infectious diarrhea is a leading cause of mortality and morbidity in children around the world particularly in undeveloped and developing countries. Rates of the disease and death vary with age and access to health care, clean water and sanitation. Feco-oral route is the most common but the infectious can be also spread via ingestion of contaminated water or food. (3)

Treatment

Most infectious causes of diarrhea in children are self limited. Antibiotics are not generally used. Management of viral and most bacterial causes of diarrhea is primarily supportive and consists of correcting dehydration and ongoing fluid and electrolytes deficits. Hyponatremia is common, hypernatremia is less common. Metabolic acidosis results from losses of bicarbonate in stool, lactic acidosis

results from shock and phosphate retention results from transient prerenal-renal insufficiency. Traditionally therapy for 24 hours with oral rehydration solution alone is effective for viral diarrhea. Therapy for severe fluid and electrolyte losses involves intravenous hydration. Less severe degrees of dehydration in the absence of excessive coming or schock may be managed with oral solution containing glucose and electrolytes (Orosal 65). (4)

In pediatric practice, probiotics are most commonly used for the treatment of acute gastroenteritis. Probiotics are bacterial microorganisms that can have a beneficial effect on human health if used properly. (5) The most commonly used probiotic strains so far are Lactobacillus rhamnosus (LGG), and Bifidobacterium brevis. Lactobacillus rhamnosus was isolated from the healthy gut of humans in 1983, and has been the most studied probiotic in various target groups (elderly, adults, children, newborns, prematurs). It is currently in use in over 70 countries. LGG is a gram positive anaerobic bacteria that colonize the digestive tract and produce milky mildew that inhibits pathogens. It also attaches itself tightly to the intestinal wall with its whip because particulary it has the affinity for enterocytes and thus prevents the adhesion of pathogenic bacteria. According to the renewed recommendations of Floch et al., LGG is recommended with the level of recommendation A for the treatment of infectious diarrhea and diarrhea associated with antibiotic use in children. (6.7)

Lactobacillus rhamnosus is one of the best clinically tested probiotics in the world. Over 1000 scientific studies indicate the unique characteristics of this probiotic, making it a first-choice probiotic. The LGG probiotic culture has the ability to survive stomach acids and bile, bind to the intestines and help alleviate stomach problems. (8)

Additionally, LGG has been shown to increase the response of specific antibodies (IgA) to rotavirus in newborns, proving that in addition to strengthening the intestinal barrier and eliminating harmful bacteria, this probiotic also enhances rotavirus defense. Statistics say that by the age of five, as many as 95% of children are infected with rotavirus and the infection is spreading at a high rate. (9)

Material and methods

This survey used a written questionnaire about the physician's attitudes towards the management of acute gastroenteritis, specialy related to usage of LGG (BebiCol forte, Abela pharm). The survey was anonymous and voluntary. A questionnaire consisted of two parts: demographic characteristics of phyisician: age, gender, location, profession, speciality, years in clinical practice, approximate number of paediatric patients evaluated per day. The second part was related to patients characteristics: average age, gender, management of acute gastrenteritis, effects of the treatment. The results were analyzed.

Results

We analysed a total of 382 completed questionnaires from the following regions: Backa Topola, Belgrade (down city, New Belgrade, Zemun), Bor, Cacak, Jagodina,Kragujevac, Kikinda, Kosjeric, Krusevac, Lazarevac, Mladenovac, Nis, Novi Sad, Pancevo, Paracin, Pozarevac, Pozega, Sjenica, Subotica, Sabac, Ub, Vlasotince, Vrbas, Vrsac. Most of the participants 66% were between the ages 30 and 50 years and most were female (80%). 84.9% are employed in public health care centres, 1.8% in private settlement and 13.3% in both. Almost all participants (87%) were paediatricians. 82% of infants diagnosed acute gastroenteritis was advised 14 drops once daily of Bebicol forte Abela pharm. Majority of cases (96.67%) claimed the improvement of symptoms (reduction of number of stools) within the first few days. The adverse events or side effects were not registered.
The results of this particular survey confirmed well known opinion that the use of LGG probiotic culture in the first few days leads to improvement (reduction of number of stools) which is consistent with the recommendations and results of the other studies.(10) Anti-infective drugs should only be given in complicated cases. Hospitalization was indicated only in a case of need for parenteral rehydration.

Conclusions

Administration of LGG strains has level of recommendation A for the treatment of infectious diarrhea and diarrhea associated with antibiotic use in children.
Paediatricians enrolled in this survey confirmed the significant agreement on everyday practice and prescription of LGG (in this case BebiCol forte) for their patients suffering acute gastroeneterocolitis.

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