tional digestive disorders [1]. Hypothesis: a symbiotic, containing *Bacillus coagulans* LMG-S-24828, minimizes the gastrointestinal adverse effects associated with the use of TK-i or Miglustat.

Objectives: To evaluate in patients treated with TK-i or Miglustat the effect of the controlled administration of the symbiotic for a month, regarding to rhythm and type of stools.

Method: Randomized cross-over trial in which 15 patients with TK-i or Miglustat were blinded to placebo or symbiotic in a daily dose, with a "washing" phase of two months between the administration of each of them. The patients were asked to complete the Bristol Stool Chart (BSC) every day during the study period. This score allows to identify the stool form using seven different images with accompanying written descriptors. The frequency of withdrawal of treatment with TK-i and Miglustat in each group will also be evaluated. The analysis of the results will be carried out using the Student's t-test, considering the statistical significance of the differences with p-value < 0.05. The protocol was approved by the Autonomous Committee of Ethics.

Results: The study period has not yet concluded before deadline. The results and conclusions will can be provided in the meeting.

References: 1) Simrén M, Barbara G, Flint HJ, et al. Intestinal microbiota in functional bowel disorders: a Rome foundation report. Gut. 2013; 62: 159-76.

EFFECT OF THE ADMINISTRATION OF A PROBIOTIC WITH *LACTOBACILLUS* AND *BIFIDOBACTERIA* ON ANTIBIOTIC-ASSOCIATED DIARRHEA

O. García Trallero[1], L. Herrera Serrano[2], M. Bibián Inglés[2], D. Roche Vallés[3], J. González Castro[3]

[1]Coordinadora Médica del Servicio de Urgencias, Hospital Universitari Dexeus-Grupo Quirónsalud. Barcelona, Spain. [2]Schwabe Farma Ibérica, Departamento Médico. Madrid, Spain. [3]Methodex, Compañía de Investigación Clínica. Barcelona, Spain.

Background/Aims: Antibiotics treatment is related to diarrhea (AAD). There is a lack of studies demonstrating the beneficial effect of using a specific probiotic combination: Pearls IC[a] (*Lactobacillus acidophilus* NCFM, *Lactobacillus rhamnosus* Lr-32, *Bifidobacterium breve* M-16V, *Bifidobacterum longum* BB536, *Bifidobacterium lactis* BI-04 and *Bifidobacterium bifidum* Bb-02). The aim of the study is to analyze the effect, safety and acceptability of this combination of probiotics on diarrhea associated with treatment with amoxicillin-clavulanic acid (CA).

Methods: Pilot, unicentric, randomized, double-blind, parallel group, placebo-controlled study (probiotic vs. placebo for 30 days). *Target population:* Patients older than 18 years, both sexes treated with CA (850 mg/125 mg every 8 h/orally) for 7 days. *Sample size:* n = 40. Considering a prevalence of the antibiotic effect in the stools of 75% and a reduction by the antibiotic effect of 35% (80% powered and 95% confidence). *Subjects:* Adult patients who attended the Emergency Department (Dexeus Hospital, Barcelona) between January and April of 2018 with prior informed consent with a follow up in primary care at 30 days. *Variables:* The differences between day 0 and day 30 of the number of daily stools and duration of diarrhea were evaluated; Stool consistency according to Bristol Stool Form, Quality of intestinal life (GIQLI). Subjective evaluation and evaluation of adverse effects of the product through a specifically designed questionnaire. *Statistical methods:* U-Mann-Whitney test. Significance level of 5%. Software R v3.4.2.

Results: Thirty-six subjects were included (18 per group). Pearls IC[a] delayed between 4 and 5 days the appearance of the diarrheic episode vs placebo ($p < 0.001$) with a tendency to decrease the number of daily bowel movements and a better subjective assessment.

Conclusions: Pearls IC[a] demonstrated its beneficial effect on DAA by delaying the onset of diarrhea and showed a tendency to decrease the number of daily stools vs placebo.

PATIENT CHARACTERISTICS INFLUENCING INFANT COLIC AMELIORATION UNDER A PROBIOTIC TREATMENT

E. Navarro-Tapia[1], M. Sticco[2], E. Astó[1], M. Aguilo[1], F. Vallefuoco[3], J. Espadaler[1]

[1]Innovation Department. AB-BIOTICS SA. Sant Cugat del Valles, Spain. [2]Pediatric Department. Azienda Sanitaria Locale Caserta, Distretto Nº21. SM Capua Vetere. Italia. [3]Medical Department. ADL Farmaceutici. Casalnuovo di Napoli. Italia.

Background/Aims: Probiotic interventions are gaining clinical evidence for the treatment of infant colic and other functional gastrointestinal diseases (FGIDs). However, patient characteristics facilitating or preventing response to probiotic intervention in colicky babies have not been studied.

Methods: Prospective, observational trial in babies diagnosed for colic and/or functional constipation, and initiating treatment with an oil suspension containing *B. longum* CECT7894 and *P. pentosaceus* CECT8330 ($\geq 10^9$ cfus daily). Exclusion criteria included preterm delivery, antibiotic or probiotic use within 2 weeks of enrollment, and concomitant acute or chronic medical conditions. Severity of colic, constipation and other FGIDs was rated by pediatricians on a 5-point Likert scale each, at baseline and after 2 weeks. Parental anxiety was measured with the GAD-7 scale. Effect of patient characteristics was assessed by multivariate linear regression.

Results: 36 babies (64% female, 53% cesarean delivery, age range 1-40 weeks) were available for analysis. 85% had moderate-to-severe colic symptoms, 63% had concurrent functional constipation and 45% had other FGIDs. Prevalence of breastfeeding, formula-feeding and mixt feeding were 38%, 38% and 24%. Moreover, 33% of babies had previously failed other treatments for colic symptoms, and 50% of them had at least one parent with anxiety. Colic severity was reduced by 1.4 ± 0.9 points ($P < 0.001$) and constipation severity was also reduced. Colic improvement was significantly higher in babies with higher baseline scores, and lower in babies having one or more parents with anxiety or also displaying constipation (multivariate $R^2 = 0.55$, individual factors p-values ranging 0.049 to < 0.001). Type of feeding, mode of delivery, gender, body weight and previous failure of other colic interventions did not influence the change in colic severity in babies taking this particular probiotic formula.

Conclusions: Baseline severity, concomitant FGIDs and parental anxiety can influence treatment response in babies receiving a probiotic intervention for infant colic.

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Patient Characteristics Influencing Infant Colic Amelioration Under A Probiotic Treatment

E. Navarro-Tapia[1], M. Sticco[2], E. Astó[1], M. Aguilo[1], F. Vallefuoco[3], J. Espadaler[1]

[1]Innovation Department. AB-BIOTICS SA. Sant Cugat del Valles. Spain; [2]Pediatric Department. Azienda Sanitaria Locale Caserta, Distretto Nº21. SM Capua Vetere. Italia; [3]Medical Department. ADL FARMACEUTICI. Casalnuovo di Napoli. Italia.

Introduction

Functional gastrointestinal disorders (FGIDs) are gut-brain axis disorders, defined by a combination of chronic or recurrent symptoms not associated to structural or biochemical disturbances [1]. One of the most common FGIDs in the early months of life is Infant Colic, a behavioral syndrome consisting of long periods of inconsolable crying and/or agitation [2]. Functional Constipation is also highly prevalent in infants [2], and could influence colicky behavior. *Intestinal dysbiosis* can play a crucial role in FGIDs [1], particularly infant colic [3], and probiotic interventions are gaining clinical evidence for the treatment of infant colic.

Objectives

In previous investigations we evaluated the efficacy of an oral probiotics formula in reducing infant colic [4]. Here we aimed to study patient characteristics facilitating or preventing response to probiotic intervention using the same formula (*B. longum* CECT7894 and *P. pentosaceus* CECT8330)

Methods

Subjects: Term infants, 1 week-10 months of age, diagnosed for infant colic and/or functional constipation as per clinical practice (Rome-IV criteria) [2].

Treatment: $2x10^9$ cfu/day for 14 days of *B. longum* CECT7894 and *P. pentosaceus* CECT8330 suspension in oil (AB-Biotics SA).

Data collection: Delivery mode, type of feeding, past and current medications for FGIDs obtained from medical records and anamnesis. Parental anxiety was assessed with the GAD-7 scale [5]. The severity of colicky crying and constipation was scored by the treating pediatricians using a 5-point Likert scale (0: no symptoms, 4: extremely severe symptoms). Parents recorded the daily duration of colicky crying in a Baby Diary.

Statistics: Patient characteristics significantly influencing crying reduction were identified by means of multivariate linear regression, using forward-selection with a p-value cut-off of 0.05. Changes in symptom scores over time vs selected patient characteristics were assessed using repeated measures ANOVA with Bonferroni post-hoc tests.

Results

Variable	Population (N=36)
Sex (% girls)	64%
Age (weeks, median and range)	12.5 (1 – 40)
Delivery type (% caesarean)	53%
Feeding (breastfeeding / mix / formula)	38% / 24% / 38%
Previous treatment* (% yes)	33%
Concomitant treatment* (% yes)	31%
Incidence of colic / constipation	85% / 63%

Table 1 (Left). Demographic and clinical information of the study sample. *) simethicone, hydrolyzed formula, herbal extracts and/or laxatives.

Effect of patient characteristics on Colic reduction	Coefficients	P-value
Baseline severity of the colic (Likert scale; 0-4)	0.58	< 0.001
Number of parents with mild to severe anxiety (GAD-7 ≥ 5)	-0.31	0.034
Baseline severity of the constipation (Likert scale; 0-4)	-0.21	0.045
Body weight at birth (gr)	-0.21	> 0.10
Feeding (0=formula; 1=mix; 2=breastfeeding)	-0.20	> 0.10
Sex (0=boy; 1=girl)	0.08	> 0.10
Delivery type (0=vaginal; 1=caesarean)	-0.21	> 0.10
Probiotic used as 1st line therapy for current FGID (0=yes; 1=no)	-0.02	> 0.10
Concomitant use of simethicone, laxatives, herbal extracts or hydrolyzed formula (0=no; 1=yes)	-0.06	> 0.10

Table 2 (Right). Predictors of response were calculated by multivariate linear regression (variance explained by final model R^2 = 53%, p < 0.001)

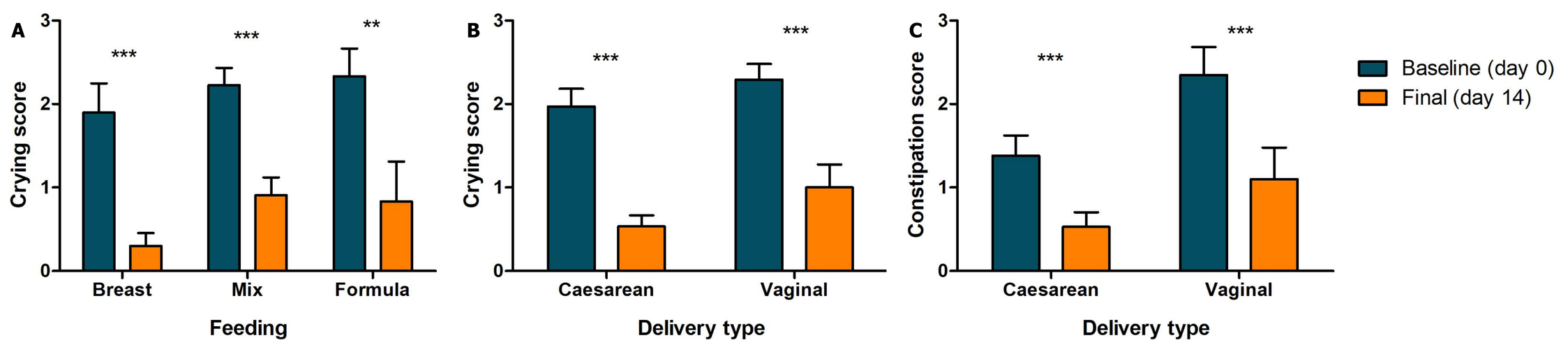

Figure 1. Response to treatment depending on key subject characteristics. A) Crying reduction was statistically significant independently of the type of feeding. Moreover, no statistically significant divergences in final crying score were found between feeding groups. B) Crying reduction was statistically significant independently of delivery type. Besides, no statistically significant differences in final crying score were found between delivery groups. C) Constipation reduction was statistically significant independently of delivery type. Furthermore, no statistically significant differences in final constipation score were found between delivery groups. Only baseline constipation severity was found to significantly influence the change in the constipation score. (**= p<0.01; ***= p<0.001).

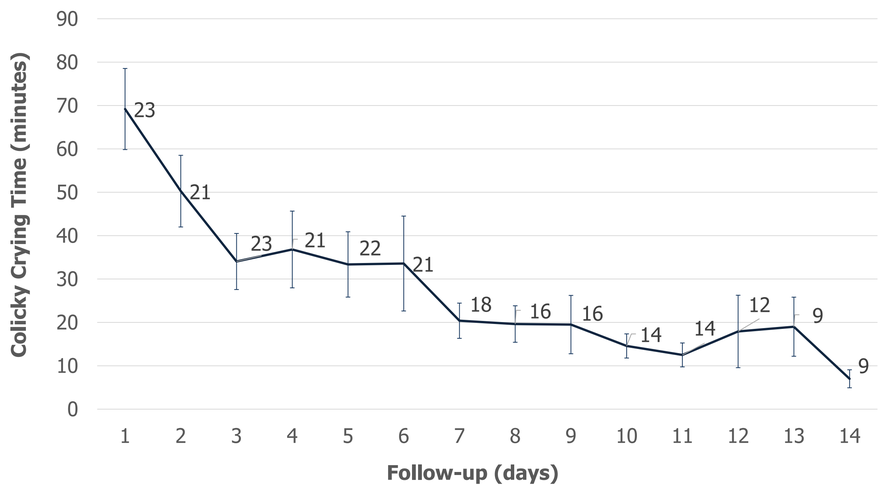

Figure 2. Reduction of crying time over treatment days (1-14), as per Baby Diaries. Diary filling and retrieval was poor, numbers indicate number of diaries available at each day. Change from day 1 was already significant on days 2 and 3 (Paired T-Test, p = 0.006 and p = 0.002, respectively).

Conclusions

In babies taking this particular probiotic formula, the reduction in the crying score was larger in babies with higher severity at baseline, and lower in those with concomitant constipation or whose parents displayed mild to severe anxiety. Of note, type of feeding, mode of delivery, gender, body weight and previous failure of other colic interventions did not influence the change in colic severity.

Bibliography

1. Drossman, D.A. and Hasler W.L., Rome IV - Functional GI Disorders: Disorders of Gut-Brain Interaction. *Gastroenterology*, 2016. 150:1257-1261.
2. Benninga, M.A., *et al.*, Childhood Functional Gastrointestinal Disorders: Neonate/Toddler. *Gastroenterology*, 2016. 150:1443-1455.
3. De Weerth *et al.* Intestinal Microbiota of Infants With Colic: Development and Specific Signatures. *Pediatrics* 2013;131:e550–e558
4. Santas, J., *et al.*, Pediococcus pentosaceus CECT8330 and Bifidobactrium longum CECT7894 show a trend towards lowering infantile excessive crying syndrome in a pilot clinical trial. *Int J Pharm Bio Sci.*, 2015. 6:458-466.
5. Spitzer R.L. *et al.*, A brief measure for assessing generalized anxiety disorder: the GAD-7. *Arch Intern Med*. 2006;166(10):1092-7.