emphasizes the importance of vaccination, especially in infants and young children.

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CLINICAL, ECONOMIC AND HUMANISTIC IMPACT OF SHORT BOWEL SYNDROME – INTESTINAL FAILURE IN PORTUGUESE PAEDIATRIC PATIENTS (PARENTERAL STUDY)

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Short Bowel Syndrome – Intestinal Failure (SBS-IF) is a rare, chronic, and debilitating disease, requiring patient-tailored complex management and comprehensive care. Parenteral nutrition (PN) remains the standard-of-care due to its life-sustaining nature. This study aimed to assess the clinical, economic and humanistic impact of paediatric SBS-IF in Portugal.

This was a retrospective cohort study, with a cross-sectional component for the quality of life (QoL) evaluation, including paediatric SBS-IF patients

(≥1-18 years) with stable PN over at least six months. Data collection included patient chart review over a 12-month period and patient/caregiver self-report and PedsQL™ questionnaires with 6- and 1-month recall periods, respectively. Main endpoints included clinical and PN characterization, healthcare resource utilization (HRU), direct medical and non-medical costs, and patient QoL. Unit costs were obtained from national databases/decrees, retailers, and patient/caregiver. Costs were standardized using the 2019 consumer price index and annualized assuming constant use of resources.

A total of 20 patients were included with a mean age (SD) of 7.5 (5.0) years, 50.0% female, and a mean time since diagnosis of 6.6 (4.2) years. The three leading causes of SBS-IF were volvulus (40.0%), intestinal atresia (35.0%), and necrotizing enterocolitis (10.0%). PN was administered for a mean of 6.6 days/week, in 90.0% of cases at home for a mean of 10.8 months/year. Nevertheless, 60.0% had PN administered at least once in an inpatient setting for a mean of 1.8 months/year. HRU was high, including a mean annual frequency of 10.2 (5.3) medical visits, 29.8 (85.3) visits with other healthcare professionals (including nurse, dietitian, psychologist),

3.0 (2.5) emergency visits, and 2.0 (1.5) hospitalisations. A total of 40 hospitalizations were reported, with a mean annual length of stay of 29.4

(32.3) days, of which 85.0% due to catheter-related complications, including septicaemia, local central venous catheter infection, and mechanical complications. Mean annual direct costs (95%CI) per patient amounted to 74,734.5€ (74,614.8–74,854.4), with PN and hospitalization as the main cost drivers accounting for 57.3% and 21.0% of overall costs, respectively.

Patient QoL assessment showed a PedsQL™ mean total score slightly below the Portuguese norm (73.3 vs. 75.6), but with a notorious deterioration in the school functioning domain (57.5 vs. 72.6).

Paediatric SBS-IF management is characterized by a substantial therapeutic burden and HRU, translating into high direct costs and QoL deterioration, mainly in school performance. There is a clear unmet need for therapeutic alternatives that lower SBS-IF burden. This research was funded by Takeda.

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CLUSTER BREASTFEEDING SYNDROME IN INFANTS

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Cluster breastfeeding syndrome («cluster feedings», «bunch feedings») is when baby has several feedings close together during a certain period of time, in some cases during the day. The purpose of this study is to examine the frequency and to identify the reasons for the cluster breastfeeding syndrome in lactating women.

Questioning was conducted with 223 lactating women aged 19–44 years.

Questioning including questions regarding the use of the delivery methods and the lactation period. Psychological testing of lactating women was also conducted. The anxiety level was evaluated by Hamilton Anxiety Rating Scale

(HAM-A) (score of 14 points is borderline). Lactating women were divided into two groups: without Cluster Breastfeeding syndrome (group I) and with Cluster Breastfeeding syndrome (control group). Statistical analysis was performed using Microsoft Excel 2007, SPSS Statistics v 24.0.0.0. Spearman's correlation coefficient (r) and Pearson's correlation coefficient (rxy) were calculated. Data was compared using chi-square test and $P \leq 0.05$ was regarded as statistically significant.

Among the women surveyed, women with one child pre-valued (63%). The average duration of the lactation period was 11.1 ± 5 months. The average time the baby was at the breast was 19 ± 4.1 minutes. Syndrome of prolonged, continuous feeding was noted in 5% of cases when the baby was at the chest continuously for a day, with short breaks at night sleep. In this group, in women (90%), labor was performed by Caesarean section. In the group I (cluster breastfeeding syndrome group), the average age of women was $35.8 \pm$

5.5 years, in the control group 25.0 ± 4.6 ($p < 0.001$). In group I, the average score on the Hamilton scale was 28.4 ± 6.5 (level of symptomatic anxiety), in the control group – 12.9 ± 9.7 ($p = 0.0003$). All baby in the group I have been gaining enough weight and producing sufficient dirty and wet diapers. Correlation analysis revealed a direct strong correlation between the presence of cluster breastfeeding syndrome in a child born by Caesarean section ($rxy = 0.97$) from mothers who gave birth over the age of 35 and have a level of symptomatic anxiety ($r = 1$).

Cluster breastfeeding syndrome (cluster feedings, bunch feedings) occurs in 5% of cases and is associated with the late birth of the first child, high anxiety of the mother and the birth of a child by Caesarean section.

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INFANT HEMATEMESIS: A CHALLENGING DIAGNOSIS, POSTNATAL CMV INFECTION OR NON IGE-MEDIATED COW'S MILK PROTEIN ALLERGY? A TWO CASE REPORT COMPARISON

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Introduction While severe manifestations of congenital Cytomegalovirus (CMV) transmission are widely investigated, little

is known about postnatal CMV (pCMV) infection. Although pCMV infection in term healthy infant is mostly asymptomatic, serious gastrointestinal symptoms (vomiting, diarrhea, abdominal distension, hepatosplenomegaly, blood stools) are described in literature.

We describe two cases of infant hematemesis, focusing on the challenging differential diagnosis between pCMV gastritis and non IgE-mediated Cow's Milk Protein Allergy (CMPA) enteropathy.

Case 1: a 3-month-old female infant presented with growth impairment, hematemesis and melena. Blood and stool analysis (bacterial, viral and parasites panels) resulted normal. Cow's milk specific-IgE were negative.

Viral serologies revealed recent CMV infection with positive CMV-DNA Polymerase Chain Reaction (PCR) on urine and blood samples. Congenital CMV infection was ruled out through negative CMV-DNA PCR on the first day of life saliva sample. Esophagogastroduodenoscopy (EGD) revealed petechial elements in antral and duodenal-bulb mucosa; at biopsies normal eosinophils count and negative morphological research of *Helicobacter pylori* (HP) were found. Intranuclear CMV inclusion bodies were not detected and CMV immunostaining was negative.

Case 2: a 2-month-old male infant presented with dehydration, bloody diarrhoea, vomiting and feeding refusal. Blood analysis revealed severe hypoalbuminemia, anaemia and hypertransaminasemia. Stool examinations (bacterial, viral and parasites panels) and Mycobacterium Tuberculosis screening were negative. Allergological and immunological investigations resulted normal. CMV-DNA PCR on urine, blood and maternal milk samples were positive. CMV-DNA PCR on Guthrie card was negative. EGD and rettosigmoidoscopy revealed exudative active inflammation in duodenal mucosa. HP research was negative while CMV immunostaining visualized duodenal cells viral inclusions.

Discussion Paediatric hematemesis is mainly caused by foreign bodies ingestion, CMPA, infectious gastritis (*Helicobacter pylori*, CMV, parasites), drug-induced gastritis (steroids and FANS) and eosinophilic gastropathy. In our cases the differential diagnosis focused on pCMV infection and non IgE-mediated CMPA. Both infants had a partial clinical improvement after starting a cow's milk protein free diet. However, due to the concomitant pCMV infection and the absence of cow's milk specific-IgE, a definitive diagnosis could not be established.

In conclusion, paediatric hematemesis differential diagnosis turns out particularly challenging when considering non IgE-mediated CMPA and pCMV gastropathy. In fact, neither the absence of cow's milk specific-IgE

and comparison of gluten-degrading microorganisms (GDM) from feces and saliva of adolescent patients with coeliac disease (CD) and healthy controls (HC). Additionally, we compared genomes of the same bacterial species isolated from samples of feces and saliva obtained from the same individual.

Feces and saliva were obtained from 5 CD patients (2 female, 3 male) on gluten-free diet (GFD) and 5 HC (3 female, 2 male) aged 13-18 years. Samples were inoculated on culturing medium (MCG3) with gluten as a major source of carbon and nitrogen. All colonies with lysis zone were further isolated in pure culture and identified using MALDI Biotyper (Bruker Daltonics). In 4 samples (3 CD, 1 HC), Whole genome sequencing (WGS) was performed on MiSeq platform (Illumina) on all strains that belonged to the same species and were isolated from fecal sample and from saliva in the same individual.

In the CD group 10 GDM strains were isolated (5 were not identified): 2 from feces and 8 from saliva. In contrast to the HC group, where 16 GDM were isolated (1 was not identified): 7 from feces and 10 from saliva, 1 GDM was isolated from both samples (saliva and feces). GDM isolated from CD samples belong to 3 genera of bacteria and 1 yeast (*Candida albicans*). The latter was also isolated in the HC group along with bacteria from 12 different genera. That indicates higher GDM diversity in HC compared with the CD group.

Three bacterial species were isolated from feces and saliva of the same individual: *Veillonella parvula*, *Lactobacillus paracasei*, *Lactobacillus rhamnosus*. WGS showed identical genomes only in *L. rhamnosus*. That could indicate transmission between oral cavity and gut.

We found that cultivable GDM are diverse and more often present in feces and saliva of HC than CD, which could be the effect of GFD the CD patients were on. Genomically identical lactobacilli were detected in saliva and in feces of the same individual.

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HELICOBACTER PYLORI INFECTION IN CHILDREN WITH CELIAC DISEASE

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Aim: to reveal the effect of *H. pylori* on course of celiac disease (CD) in children.

Methods 58 children with histologically confirmed CG and newly diagnosed CD were examined. Children were divided into two groups according to presence of *H. pylori* infection: the first group-12 *H.pylori*-positive and the second group – 46 *H.pylori*-negative subjects. All patients underwent histological examination of gastric and duodenal biopsies, histological verification of *H. pylori* infection and biopsy urease test. Tissue transglutaminase antibodies (tTG IgA, IgG) anti- H+/K+ ATPase and anti-intrinsic antibodies, were measured by ELISA. **Results** Mean age of patients was 11.33 ±3.06 years in group1 and 10.38±1.43 years in group 2 (p=0.582). Manifestation of CD didn't differ statistically significantly in groups.

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GLUTEN-DEGRADING MICROORGANISMS IN ADOLESCENTS WITH COELIAC DISEASE

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Oral and gut microbiota play an important role in the pathogenesis of coeliac disease. The aim of our study was isolation