

at the time of “firing” capsule. The fresh juice examined immediately by light microscope confirmed presence of *Giardia* cists. Mucosal biopsy specimen examination, after Hematosilin-Eosin staining, allowed us to confirm giardiasis diagnosis showing the duodenal dwelling trophozoites. Therapy with metronidazole 15 mg/Kg/die in three administrations for one week was effective in eradicating infection.

Conclusions. *Giardia Lamblia* infection needs to be excluded every time we have acute patients presenting with vomiting, diarrhoea, and abdominal pain or also patients with history of long lasting abdominal pain, or chronic diarrhoea even if failure to thrive is absent or weight loss is lacking.

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PA11

COELIAC DISEASE (CD) AND PREGNANCY: COULD THE BIRTH OF A SMALL FOR GESTATIONAL AGE NEWBORN (SGA) BE A SYMPTOM OF COELIAC DISEASE IN THE MOTHER? A CASE-CONTROL MULTICENTRIC STUDY

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A SGA birth could be a symptom of undiagnosed CD in mother. Early diagnosis and treatment may avoid damages [1].

Aim. To determine the prevalence of untreated CD among SGA mothers (SgaM) in six towns of the region of Apulia.

Methods. From September 2005 to October 2006, SgaM (cases) and Nga mothers (NgaM), as control group, were enrolled.

Exclusion criteria: twin birth, artificial insemination. Blood samples were taken (5 cc) and antihuman IgA and IgG classes antitissue transglutaminase antibodies (IgA and IgG anti-tTg ab) were tested by ELISA commercial kit (Eurospital, Trieste, Italy); total IgA ab were tested. Statistical analysis: Fisher exact test, Odd ratio (OR).

Preliminary Results. 120 SgaM (mean age 31.7 y) and 120 NgaM (mean age 31.1 y) were enrolled.

SGA were like all NGA except for the for the body weight (1977 ± 584.5 g vs. 2830 ± 701.6 g; $p < 0.05$). SgaM had an higher risk of spontaneous abortions (OR = 1.2). 2/120 (1.6%) SgaM had positive IgA and IgG anti-tTg ab (intestinal

biopsy: subtotal villous atrophy, HLA determination: DQ2 positivity).

Summary. Undiagnosed CD is slightly more frequent (1.6%) among SGA mothers than in the general population.

Conclusions. A SGA birth (without a known cause) could be a risk factor for CD: screening for CD in SgaM (in pregnancy) could lead to the effective strategies for the prevention of such disease.

Reference

[1] Hadziselimovic F., Geneto R. Dahlbom ESPGHAN Abstract Books Dresden 3–7/6/2006; SY2–2.

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PA12

FECAL CALPROTECTIN (FC) IN NEWBORN: PREDICTIVE MARKER OF GASTROINTESTINAL AND/OR ALLERGIC DISEASE?

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Fecal Calprotectin (FC) is a biomarker of intestinal inflammation both in adults and in children. High FC concentration in healthy term and preterm newborns are similar to those found in children with treated IBD and elevated FC levels at two months of age have been found in infants with atopic dermatitis, cow's milk intolerance, severe infantile colic and gastro oesophageal reflux.

Aim. To evaluate if FC levels at birth and at one month of age can relate to the development of gastrointestinal functional (DFGI) and/or allergic disease.

Methods. Between December 2007 and January 2008 a telephonic interview was done to parents of 109 children (mean age: 2.5 years) healthy term newborn in which FC has been measured both at birth and at one month of age [1]. A modified version of the original paediatric questionnaire for paediatric functional gastrointestinal disorders (QPGS) [2] was used for this interview, with specific questions added to address allergic disease. Statistical analysis were performed using SPSS version 10.1 for Windows. Models of statistical variance were used to assess associations between variables.

Results. 89/109 (81.6%) of parents accepted to answer. There were 11/89 (12.3%) children with diagnosed cow's milk protein allergy (group 1), 5/89 (5.9%) children with atopic dermatitis (group 2), one case (1.1%) with diagnosis of infant regurgitation according to Roma III criteria (group 3); 72/89 (80.7%) have no disease (group 4). FC levels did not differ among different groups. 45/89 (50.5%) children

have familiar history positive for gastrointestinal diseases (group 5).

Conclusion. We have not found correlation between high FC levels during the first month of age and subsequent development of allergic or gastrointestinal disease. High calprotectin levels during the first month may be related to its cytokine-like activity, playing a pivotal role in the physiologic development of the immune response and the host defence mechanisms against fungal or bacterial infection.

References

- [1] Baldassarre ME, et al. *Endocr Metab Immune Disorders* 2007.
[2] Caplan A, et al. *J Pediatr Gastroenterol Nutr* 2005.

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PA13

LACTOBACILLUS GG IMPROVES RECOVERY FROM COW MILK ALLERGY COLITIS COMPARED TO EXTENSIVELY HYDROLYZED FORMULA ALONE

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Introduction. Cow milk allergy (CMA) can cause colitis which resolves feeding an extensively hydrolysed protein formula. Lactobacillus GG (LGG) is effective in treating atopic dermatitis caused by CMA. Fecal calprotectin (FC), a marker of intestinal inflammation, has not been evaluated in infants with CMA colitis.

Objectives. (1) Compare FC in infants with allergic colitis at the time of diagnosis with that of matched controls and changes after a 4 wk period of dietary antigen elimination and (2) determine the effects of the addition of LGG to an extensively hydrolyzed protein formula, Nutramigen LGG® vs. Nutramigen® alone on FC and symptoms.

Methods. Twenty-six formula-fed infants with hematochezia (Group A) were randomly assigned in a double blind manner to Nutramigen LGG or Nutramigen. Group B: age and sex matched healthy controls.

Results. At diagnosis FC in group A was significantly higher than in B (Mean $\mu\text{g/g}$ 325.89 (95% C.I. 269.01–387.76) 131.97 (95% C.I. 118.56–145.38) ($t=6.79$; $p<0.0001$). After one month, FC mean reduction was highly significant ($F=107.7$; $p<0.0001$) and was significantly higher in colitis patients who received N LGG milk than in colitis patients who received N or control groups ($F=12.45$; $p<0.0001$). After the diet occult blood stool was negative in 19/30 (63.33%): in 12/12 patients who received

NLGG, in 5/14 who received N and this difference is statistically significant (χ^2 : 11.85; $p=0.0027$).

In CMA colitis: (1) FC appears to be a good marker of inflammation; (2) Addition of LGG to an extensively hydrolysed formula resulted in a significant reduction of intestinal inflammation compared to the formula alone.

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PA14

FAECAL CALPROTECTIN AS A NON INVASIVE MARKER OF DIGESTIVE DISTRESS IN PRETERM NEONATES: CUT-OFF LEVELS

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In preterms, enteropathy or necrotizing enterocolitis are prominent features of digestive distress, impacting differently enteral feeding. Their diagnosis, currently based on clinical and radiological data, would benefit from a non invasive biological marker.

Patients and methods. This multicentric study enrolled 126 preterms (75 boys, 51 girls) born at a median gestational age of 33 weeks (range: 25.7–35 weeks) with a birth weight of 1760 g (730–2750 g). For each neonate, faecal samples were collected weekly from the end of the first week of life until the end of the first month and if any gastrointestinal event occurred. Samples were immediately stored at -80°C before ELISA measurement (Calprest®, Eurospital, Italy).

Results. Three hundred and twelve samples were analysed. Median calprotectin value was 206 $\mu\text{g/g}$ (16–1240), 393 $\mu\text{g/g}$ (52–996) and 832 $\mu\text{g/g}$ (168–4775) in samples from healthy neonates (252), from neonates with mild digestive symptoms (42) and from those with NEC (18), respectively. ROC curves analysis gave a cut-off value of 363 $\mu\text{g/g}$ (sensitivity 0.65, specificity 0.82) for the development of digestive symptoms and a cut-off of 636 $\mu\text{g/g}$ (sensitivity 0.72, specificity 0.95) for the development of severe symptoms.

Calprotectin might be a promising non invasive clinical screening marker for intestinal distress in neonates.

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