bulb and 4 in the descending duodenum (1/quadrant). The histological specimens were fixed in 10% formalin and stained with hematoxylin and eosin (H&E). The pathologist reported blindly the histological M/O diagnosis of the bulb and of the descending duodenum. The diagnosis of CD was confirmed according to the revised ESPGHAN criteria.

Results. Of the 21 paediatric enrolled patients:

- 15 subjects (71%) had the same histology in bulb and descending duodenum: 3 pts had IIIa M/O (20%); 3 pts had IIIb M/O (20%); 9 pts had IIIc M/O (60%).
- 5 subjects (23%) had a major histological atrophy grade of the bulb than in the duodenum, and in two of these the descending duodenal biopsies were negative for CD (0 M/O) (Table 1).
- 1 subject (6%) presented the duodenal histological atrophy grade major than the bulb (bulb = IIIa and descending duodenum = IIIb).

Table 1

Patients	Bulb histology (Marsh-Oberhuber grade)	Duodenal histology (Marsh-Oberhuber grade)
1	II	0
2	IIIa	II
3	IIIa	II
4	IIIb	0
5	IIIb	IIIa

Conclusion. In conclusion this study suggests that the routinely esecution of biopsies in addition to descending duodenum could improve the diagnostic sensitivity of the bioptic procedure.

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PP46
MEASUREMENT OF SERUM CALPROTECTIN LEVEL FOR DIAGNOSIS OF NECROTIZING ENTEROCOLITIS

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Background. Necrotizing enterocolitis (NEC) is a major cause of morbility and mortality in very low birth weight (VLBW) neonates. Although NEC onset is often inconspicuous, with minimal, subtle and non-specific signs, the clinical course may be fulminating. Thus, a prompt diagnosis to initiate an appropriate therapy is crucial. Faecal calprotectin has been proposed for diagnosis of NEC, however a wide overlapping between normal and pathological data in neonatal age limit their diagnostic use.

Aim. To investigate whether serum Clp determination could be useful for the diagnosis of NEC.

Methods. Prospective, multicenter study involving VLBW newborns with a gestational age <32 weeks. Serum Clp was measured in subjects presenting clinical and radiological diagnostic criteria for NEC (Bell stage >II), while healthy newborns served as controls. Serum Clp values was determined by an ELISA technique (Calprest®, Trieste, Italy) at similar postnatal age for subjects with NEC and controls.

Results. During an observational period of 24 months 78 newborns were enrolled: 7 received diagnosis of NEC (male 4; birth weight 913 ± 248 g; gestational age 27.8 ± 1.8 wks; postnatal age 15.8 ± 5.0 d), and 71 subjects were classified as healthy controls (male 47; birth weight 1098 ± 239 g; gestational age 28.7 ± 2.8 wks; postnatal age 13.9 ± 3.7 d). The mean serum Clp concentrations resulted higher in patients with NEC (3.98 ± 0.69 μg/ml) compared to healthy controls (0.70 ± 0.37 μg/ml) ($p < 0.0001$).

Conclusions. Determination of serum Clp concentration could be considered an additional diagnostic marker for identification of NEC.

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PP47
RACECADOTRIL DIRECTLY INDUCES ION ABSORPTION UNDER BASAL CONDITION AND INHIBITS ROTAVIRUS CHLORIDE SECRETION IN HUMAN ENTEROCYTES

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Background. Racecadotril is a potent inhibitor of enkephalinase [1]. Enkephalinase is an enzyme abundant in the gastrointestinal tract that inhibits the enkephalins, neurotransmitters produced by the enteric nervous system (ENS) that possess an antisecretory effect on transepithelial ion transport. Racecadotril reduces ion secretion triggered by cholera toxin and prostaglandins, and is effective in acute diarrhoea in *in-vivo* studies. Rotavirus (RV) is the major cause of gastroenteritis in infants. A putative mechanism of RV diarrhoea is related to the activation of ENS. However we have previously reported that RV exerts a double pathogenic effect in human enterocytes: an early chloride secretion and a subsequent intestinal epithelial damage.

Aim. We tested the hypothesis that Racecadotril directly interacts with the enterocytes stimulating ion absorption in basal conditions and reducing chloride secretion induced by RV. Since MAPKs ERK1/2 and p38 are involved in the regulation of transepithelial ion transport, we also tested the hypothesis that either or both may be involved in the antagonist effects to RV induced by Racecadotril on intestinal ion transport.

Materials and methods. Short-circuit current (Isc), an electrical parameter of chloride secretion, was measured in Caco-2 cell monolayers infected with RV strain SA-

11 (5PFU/cell) or controls, mounted in Ussing chambers and exposed to increasing concentration of Racecadotril in different phases of RV infection (pre- and post-infection). MAPK involvement was evaluated by the pre-incubation with PD098059 and SB0203580, the specific inhibitors of ERK1/2 and p38 respectively. In addition expression of ERK1/2 and p38 active forms was evaluated by western blot method.

Results. Racecadotril addition to the mucosal side of enterocytes induced a decrease in Isc, indicating ion absorption. This effect was- time and dose-dependent. Isc peak was observed at 1 hour at Racecadotril concentration of 10 μM. MAPK inhibitors caused total abrogation of absorptive effects of Racecadotril, indicating the direct involvement of MAPK Erk1/2 and p38. This was confirmed by Western blot analysis. Rotavirus secretion was inhibited when Racecadotril was added in post-infection phase. The addition of Racecadotril before and during RV infection had no effect on secretion.

Conclusions. Racecadotril has a direct proabsorbptive effect on intestinal ion transport in basal condition. This effect involves both ERK1/2 and p38 MAPK. In addition Racecadotril is able to abolish chloride secretion induced by RV acting directly on intestinal epithelial cells. These results indicate that Racecadotril is effective in RV infection through a direct interaction with the enterocyte**.**

Reference

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PP48
LATENT CELIAC DISEASE IN EMILIA-ROMAGNA PAEDIATRIC POPULATION—3 YEARS SURVEILLANCE

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Aim of the study. A prospective evaluation of the follow up data of 16 subjects with positive serum IgA autoantibodies (EmA and antitTG), HLA haplotype and normal mucosa when performed a small bowel biopsy, according to the Marsh-Oberhuber classification (type 0 and 1).The data were collected by gastroenterologists of 5 paediatric departments in Emilia-Romagna region. The number of celiac patients affering to the 5 paediatric departments is 1254 and the latent celiac subjects are 25 (2%), but only 16 were evaluable for the study.

Methods. The age of the patients enrolled for the study is 2–12 years (70% female). HLA DQ2 or DQ8 haplotype and normal mucosa were found in all children. All subjects were left on gluten containing diet and serologically assessed after 6,12, 24, 36 months.

Results. The follow up lasted at least 6 months for all children, 12 months for 9 children, 24 months for 8 children and 36 months 6 subjects. For 5 subjects the follow up lasted more than 36 months. All patients serologically positive made other evaluations, until EmA anti tTG were negative. Only one serologically positive had 6 months follow up.

After 6 months anti tTG and EmA were negative in 37% of the patients, anti tTG negative but EmA positive in 31,5% and anti tTG and EmA persisted positive in 31,5%. After 12 months anti tTG and EmA were negative in 55%, anti tTG negative but EmA positive in 22,5% and anti tTG and EmA positive in 22,5%. After 24 and 36 months all subjects, but one, had negative serum anti tTG and EmA.

A second small bowel biopsy was performed in 2 children, both with positive serum autoantibodies: the first after 6 months and the second after 24 months. Both had histologically diagnosed celiac disease: the first had a Marsh class 2 lesions on distal duodenum, the second a Marsh class 3 on a bulbus biopsy and a class 2 on distal duodenum.

Conclusions. Patients with latent celiac disease need a long follow up. A great number of patients shows a transitory positivity of autoantibodies for celiac disease. They may represent a false positive serological tests, milder disease or in a small part of patients a more sensitive tests that identifies latent celiac disease before mucosal injury. For this reason, these patients should receive a long clinical-serogical follow up. We suggest that patients with persistent positivity of EmA and anti tTG have to receive a second small bowel biopsy extended to duodenal bulbus.

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PA1
ASSOCIATION BETWEEN ANTRAL NODULARITY, SEVERE GASTRITIS, POSITIVE CYTOTOXIN ASSOCIATED PROTEIN (CagA) SEROLOGY, AGE, GENDER, ABO BLOOD GROUP AND HELICOBACTER PYLORI IN CHILDREN

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Background. *Helicobacter pylori* (Hp) causes one of the most widespread infections worldwide. It is well known that blood group antigens are related to the development of peptic ulcer and gastric carcinoma.

Aim. To investigate the association between virulence factors (cytotoxin-associated gene A) of Hp, severe gastritis, age, gender and ABO blood group.

Methods. 25 patients (15 Male; age range 3–18 years) underwent to esophagogastroduodenoscopy with antral