foods including potatoes, bananas and vegetables all tested positive in 4% of the children. Pumpkin tested positive in one infant who had presented with rectal bleeding. Majority of the children had positive tests to multiple foods. Only 14% of the children had negative tests. The commonest gastrointestinal (GI) symptoms were abdominal pain (38%), constipation (36%), vomiting (14%), diarrhea (11%), failure to thrive (9%) and colics (3%). Majority of the children had multiple GI symptoms. Eczema and cough were associated symptoms in 9% and 3% of the children respectively.

Conclusions: The prevalence of food allergy as suggested by this study is high in Kenyan children and contributes significantly towards gastrointestinal morbidity. While cow milk, egg and beef are the commonest allergens, the emerging allergy to local infant complementary foods is also significant. The high frequency of multiple allergens partly contributed to poor compliance in the exclusion rechallenge programme due to lack of options on alternative foods.

442 Coincidence of Celiac Disease and Gluten Allergy
Katarzyna Markiewicz, PhD,1 Grażyna Rowicka, MD, PhD,2 and Maria Gołębiewska-Wawrzyniak, MD, PhD3.1Immunology; 2Nutrition Department; 3Department of Clinical Immunology, Institute of Mother and Child, Warsaw, Poland.

Background: The type I or IV of hypersensitivity reactions according to Gell and Coombs classification may be responsible for clinical symptoms observed after ingestion of gluten - containing products. The mechanisms of these reactions are either IgE-dependent or IgE-independent. Celiac disease based on IgE-independent mechanism is classified as gluten hypersensitivity. Clinical manifestation of celiac disease and gluten allergy is often similar. Correct diagnosis of this disease is particularly important due to the different long-term therapeutic procedures. We would like to assess the incidence of celiac disease in children with gluten allergy.

Methods: The study involved 50 children with abdominal pain, chronic diarrhea, recurrent respiratory and ears inflammation and skin lesions - patients of the Immunological and Gastroenterology Outpatient Clinic of Institute of Mother and Child. The allergy to gluten was confirmed on the basis of positive peripheral blood lymphocyes blast transformation test and detection of allergen-specific IgE antibodies to gluten (f79). In all children plasma concentration of immunoglobulin classes A, G M and IgA or IgG antibodies against tissue transglutaminase (tTGA) were measured.

Results: In children on the study group the type IV of hypersensitivity reaction to gluten was diagnosed. In 3 children specific IgE antibodies to gluten was also confirmed (f79 - 1 type hypersensitivity). Anti-tissue transglutaminase antibodies both IgA and IgG were detected in 2 children in whom the concentration of IgA and IgG in serum remained within normal range for age. In these children celiac disease was confirmed by jejunal biopsy.

Conclusions:
1. The predominant frequency of type IV of hypersensitivity reactions in children in response to the gluten antigen should be taken into account in diagnosis of food allergy.
2. In children diagnosed with gluten allergy the test for celiac disease should be performed.

Background: The aim of the study was to evaluate the allergenicity of one of the main allergens from cow milk, β-lactoglobulin (β-Lg) after being digested through a simulated orogastrointestinal digestion and to identify those peptides generated during the digestion process.

Methods: The digestion was performed in 3 steps by using simulated oral, gastric and duodenal fluids. Digestibility of β-Lg was assessed by SDS-PAGE and RP-HPLC. IgE binding of native β-Lg and hydrolysates was evaluated by indirect ELISA, using the sera from 6 milk-allergic patients. The peptides produced during the orogastrointestinal digestion, were identified by liquid chromatography tandem mass spectrometry analysis.

Results: Results showed that β-Lg was progressively degraded during the digestion. Intact β-Lg was observed after the gastric phase and in the first stages of the duodenal digestion. However, no residual β-Lg was observed at the end of the duodenal phase. Immunoblot showed that during the in vitro gastric and duodenal digestion immunoreactivity decreased progressively with an EC50 value increased 150 times at the end of the digestion. Among the products of digestion, 146 peptides were identified. No peptides were found in the oral phase. Forty five peptides were detected in the gastric phase, 71 in the duodenal, and 30 were common in both phases. Between those identified peptides, 4 of them with the sequences LIVTQTMK, GLDIQK, IDALNENK, and VLVLDDTDYK had been previously described as epitopes of β-Lg.

Conclusions: β-Lg is progressively degraded during the digestion process. Similarly, β-Lg allergenicity is reduced through the simulated digestion with a severe reduction at the end of the duodenal stage. From the digestion products, 147 peptides have been identified. Studies are underway to evaluate the ability to cross the intestinal barrier and to bind to human-IgE of the most relevant identified peptides.

HEALTH OUTCOMES FOR ASTHMA

444 Associations between Self-reported Adherence to Asthma Anti-inflammatory Therapy and Risk Factors for Non-adherence (NA) in Pediatric Patients
Andrew Weinstein, MD,1 Jean-Phillipe Laurenceau, PhD,2 and Jacqui Vok, BS.3 Allergy/Immunology, Thomas Jefferson Medical College, Newark, DE; Psychology, University of Delaware, Newark, DE; Asthma and Allergy Foundation of America, Landover, MD.

Background: Identifying patient adherence status and reasons for non-adherence are important components of asthma management. GINA 2008 Guidelines have identified risk-factors associated with poor adherence

Methods: Three hundred sixty one parents of children with intermittent and persistent asthma (59.6% male; 64.1% Caucasian; mean age 8.07 years) completed the AsthmaPACT, a 96-item asthma survey hosted by the Asthma and Allergy Foundation of America website. The AsthmaPACT identifies risk-factors for not following treatment recommendations as well as medication use. Asthma surveys were completed from August 2009 thru June 2011.

Results: Descriptive statistics indicated that 259 of the sample reported giving their child one or more of the anti-inflammatory medication prescribed. Of these, 69 (27%) were diagnosed as NA, operationalized as whether a parent reported giving the child anti-inflammatory medication “less than prescribed by their physician.” During the 4 weeks prior to completing the survey, 43.0% were having symptoms daily and 39.4% were using albuterol MDI daily. In this cross-sectional data set, items intended to relate risk factors to NA were examined using chi square (χ2). Parents who claimed that their child receive less anti-inflammatory medication than prescribed, were more likely to report: 1) symptoms from emotional states: crying χ2(df = 2) = 8.643 P = 0.013; frustration χ2(df = 2) = 6.202 P = 0.045; anger χ2(df = 2) = 11.029 P = 0.0042); Parent more likely to see child as anxious or a worrier χ2(df = 2) = 6.527 P = 0.038; 2) Child’s Quality of Life (QoL) is more likely to be effected at school χ2(df = 2) = 12.963 P = 0.002; and interfere with family activities χ2.