Of these 32 patients 29 had positive tTg. This gives a sensitivity of 90%. Thirteen patients had tTg greater than 100, 12 had positive intestinal biopsy; this gives a sensitivity of 92%.

**Conclusion** Although the sensitivity of tTg in our series is 90%, it is reasonable to assess small intestinal biopsy in before subjecting children to lifelong gluten free diet.

**Abstracts**

724 **HLA DQ2/DQ8 Typing in Children Diagnosed with Celiac Disease**

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**Background and Aims** Genes encoding HLA DQ2/DQ8 are associated with celiac disease (CD) and testing for their presence has high negative predictive value for the diagnosis. The aim of this study was to assess the role of HLA typing in symptomatic individuals in whom the diagnosis of CD is uncertain.

**Methods** We proceeded a retrospective study led on a group of children investigated for CD in ‘Grigore Alexandrescu’ Emergency Children’s Hospital from 2007 to 2012 that underwent HLA typing. Inclusion criteria were all patients with mild enteropathy (Marsh 1, 2, 3a), moderate elevated values of tisular transglutaminase (tTG) antibodies (between cut off point and 5 times normal value) and poor response to gluten free diet. The medical records of all patients investigated for CD were reviewed.

**Results** 164 patients were performed HLA typing; 26 patients satisfied the inclusion criteria; 20 (76.9%) of these had HLA DQ2/DQ8 present and 6 (23.07%) had a negative test for HLA DQ2/DQ8. The mean age of our investigated group was 23.46 months and the mean age for HLA DQ2/DQ8 negative group was 21.08 months. Sex distribution indicated 9 boys and 17 girls. Gastrointestinal symptoms dominated: 17 children had diarrhea, 9 had failure to thrive and 13 patients had both chronic diarrhea and poor weight gain.

**Conclusion** Patients with clinical suspicion of CD that have moderate levels of tTG antibodies, mild biopsy changes and poor response to gluten free diet need to have HLA typing specially at younger ages (under 3 years old).

725 **Lymphocyte Respiration in Children with Trisomy 21**


**Aims** This study aimed to measure lymphocyte mitochondrial O2 consumption (cellular respiration) in children with trisomy 21.

**Methods** Peripheral blood mononuclear cells were isolated from whole blood of trisomy 21 and control children and immediately used to measure the respiratory rate. [O2] was determined as function of time from the phosphorescence decay rates (1/t) of Pd (II)-meso-tetra-(4-sulfonatophenyl)-tetrabenzoporphyrin. In sealed vials containing cells and glucose as a respiratory substrate, [O2] declined linearly with time, confirming the zero-order kinetics of O2 consumption (conversion to H2O) by cytochrome oxidase.

**Results** The rate of respiration (k, in mM O2 per min), thus, was 0.82 ± 0.02 (coefficient of variation = 76%; median = 0.60; range = 0.20 to 2.80), p<0.001. Fourteen of 26 (54%) children with trisomy 21 had k, values of 0.20 to 0.60 (i.e., < -2SD).

**Conclusion** Thus, it appears that some children with trisomy 21 have relatively reduced lymphocyte bioenergetics. The biological implication of this finding (variation) requires further studies.